

CHAPTER 2 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, & AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

***Introductory Note:** As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document:*

- *Parks and Recreational Facilities: There are no parks or recreational facilities within or adjacent to the project impact area. The alignments for a number of planned trails do, however, cross the U.S. 101 corridor. The project's consistency with the future trails is discussed in Section 2.1.2.2.*
- *Timberlands: There are no timberlands located in the project vicinity.*
- *Community Cohesion: The project will construct improvements to an existing highway. The improvements will not divide any community or neighborhood.*
- *Coastal Zones: The project site is not within or near areas covered by the Coastal Zone Management Act of 1972.*
- *Wild and Scenic Rivers: There are no waterways designated as Wild and Scenic Rivers in the project area. The closest rivers with this designation are over 100 miles from the project area.*
- *Energy: When balancing energy used during construction and operation against energy saved by relieving congestion and improving other transportation efficiencies, the project would not have substantial energy impacts.*

HUMAN ENVIRONMENT

2.1 LAND USE

2.1.1 Existing and Future Land Use

Existing Land Use

The project is located in a rural/agricultural area of southern Santa Clara County/northern San Benito County. As shown on Figure 3, land uses along the project segment of U.S. 101 are predominantly associated with agriculture and grazing. Other land uses include low-density residential and commercial.

At the northerly end of the project, in the area adjacent to the U.S. 101/Monterey Street interchange, existing land uses are primarily commercial on the east side of U.S. 101 and primarily low-density residential on the west side of U.S. 101. The commercial uses include restaurants, service stations, a motel (National 9 Inn), and a recreational vehicle (RV) Park (Garlic Farm RV Park).

In the vicinity of the U.S. 101/SR 25 interchange, the primary land use is agricultural. Other land uses include a number of single-family residences and several commercial uses related to agricultural (e.g., a cherry stand, Rapazzini Winery, the Garlic Shoppe, and Garlic World). Approximately on-half mile west of this location, adjacent to the southerly end of Santa Teresa Boulevard, is Gavilan College.

South of the U.S. 101/SR 25 interchange, the existing land use is almost entirely agricultural and grazing. One exception is a rock and sand quarry (Freeman Quarry) that is located approximately 1,500 feet west of U.S. 101, 0.7 miles south of the U.S. 101/SR 25 interchange. Another exception is a RV park (Betabel RV Park) that is located along the west side of U.S. 101 adjacent to the Betabel Road/Y Road interchange.

Several commercial uses, as well as a number of single-family residences, are located at the southerly end of the project in the area adjacent to the U.S. 101/SR 129 interchange.

The UPRR parallels the project segment of U.S. 101. South of Tar Creek, the tracks are on the west side of U.S. 101, and north of this location the tracks are on the east side of U.S. 101. This UPRR line is one of the primary north-south rail lines in California and it carries both passenger and freight traffic.

Future Land Use

At the time this EIR was prepared, there were no proposed or approved projects that would change the land uses on parcels located along the project segment of U.S. 101. [Note: An application for a proposed development on an approximately 5,800-acre site located on the west side of U.S. 101, south of SR 25, was filed with San Benito County. If approved, the project, known as the El Rancho San Benito Specific Plan, would have included up to 6,800 residences, 550,000 square feet of commercial uses, and 1.1 million square feet of employment uses. In May of 2009, the application for this project was withdrawn and the project is no longer being considered by the County. See also Section 2.2, *Growth*.]

There is one development application on file that would expand an existing land use adjacent to U.S. 101. The application would increase the size of the existing Freeman Quarry from 60 acres to 120 acres.

Although there are no proposed changes in land use on the parcels located along the project segment of U.S. 101, regional growth is projected to continue. Table 6 summarizes projected growth in both population and employment at the regional, county, and local levels, and the data show that substantial growth in both population and employment is projected throughout the region over the next 30 years. In Santa Clara County, population and employment growth between 2005 and 2035 is projected to be 38% and 62%, respectively. During this same period, population and employment growth in San Benito

TABLE 6

PROJECTED POPULATION AND EMPLOYMENT GROWTH

	Population			Employment		
	2005	2035	% Change	2005	2035	% Change
Monterey Bay Area	740,000	920,700	24	326,300	404,300	24
San Francisco Bay Area	7,096,500	9,073,700	28	3,449,700	5,107,400	48
San Benito County	57,300	94,700	65	16,900	21,700	28
Santa Clara County	1,763,000	2,431,400	38	872,900	1,412,600	62
City of Gilroy	48,200	69,600	44	17,400	26,400	52
City of Hollister	37,000	62,800	70	10,500	13,900	32

Notes:

- The Monterey Bay Area consists of Monterey, San Benito, and Santa Cruz Counties.
- The San Francisco Bay Area consists of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.
- All numbers are rounded to the nearest 100.

Sources: *Projections 2009* (Association of Bay Area Governments); *Monterey Bay Area 2008 Regional Forecast* (Association of Monterey Bay Area Governments).

County is projected to be 65% and 28%, respectively. The growth that is projected to occur will result in increased demand on services, utilities, and public infrastructure, including highways. This increased demand is reflected in the year 2035 traffic volumes that are shown in Section 2.6, *Transportation and Traffic*.

2.1.2 Environmental Consequences of the Build Alternative

2.1.2.1 *Land Use Changes*

Although the proposed project will construct improvements to an existing highway facility, the improvements will necessitate the acquisition of additional right-of-way from numerous parcels (see Table 3). In many cases, the right-of-way needed for the project would affect only a portion of a given parcel and the existing land use would remain viable and intact. In some cases, however, the entire

parcel would be acquired for the project and the existing land use would be removed. In other cases, while only part of the parcel will be acquired, the portion being acquired will impact the underlying land use. Table 7 lists those properties where the project would result in the existing land use being changed to highway purposes.

Although the project will require the acquisition of the four residences and three businesses listed in Table 7, it will not have the effect of physically dividing an established community. The existing U.S. 101 facility, as well as the UPRR that parallels U.S. 101, already function as a divide between the land uses located in this area. The affected residences and businesses are scattered along both sides of U.S. 101.

The owners of any properties acquired for project right-of-way will be compensated for the loss and/or use in accordance with Federal and State right-of-way requirements. Caltrans' relocation benefits are summarized in Appendix C of this document.

Indirect land use impacts such as noise and visual/aesthetics are discussed under their own headings in this document.

Impact LU-1: The project will not physically divide an established community. **[No Impact]**

2.1.2.2 Consistency with State, Regional, and Local Plans and Programs

Highway Plans and Policies

The project is listed in, and therefore consistent with, VTA's *Valley Transportation Plan 2035*, which is the transportation plan for Santa Clara County that was adopted in January 2009.¹²

The portion of the project within San Benito County is listed in the 2010 *San Benito County Regional Transportation Plan*.¹³

The project includes the extension of Santa Teresa Boulevard to the U.S. 101/SR 25 interchange, an improvement project that is identified in both the *Gilroy General Plan* and the *Southern Gateway Transportation and Land Use Study* (VTA, 2006).

¹²The portion of the project between Monterey Street and SR 25, including the extension of Santa Teresa Boulevard, is listed in *VTP 2035* as Project H18. The portion of the project between SR 25 and SR 129 is listed in *VTP 2035* as Project H56.

¹³It is identified in the Plan as Project # Cal-6, Widening of U.S. 101 to a 6-lane Freeway from the Santa Clara County to SR 156. [Note: These limits are slightly larger than the proposed project as SR 156 is located 1.7 miles south of SR 129.]

TABLE 7

LAND USE CHANGES RESULTING FROM THE PROJECT

Assessor's Parcel Number	Property Address	Existing Land Use	Parcel Size (acres)	Right-of-Way Required (acres)		Land Use Change
				Design Option A	Design Option B	
808-23-003	4965 Monterey Rd., Gilroy	agricultural w/ residence	24.8	2.6	2.4	Residence & associated structures to be acquired; agriculture use to remain.
808-23-004	4395 Monterey Rd., Gilroy	agricultural w/ residence	46.1	4.1	2.8	Residence & associated structures to be acquired; agriculture use to remain.
808-23-005	55 Castro Valley Rd., Gilroy	agricultural w/ residence & farmworker cottages	49.2	7.9	3.4	Residence & associated structures & farmworker cottages to be acquired; agriculture use to remain.
810-35-007	3201 Monterey Rd., Gilroy	agricultural w/residence & barn	1,186.6	13.1	14.2	Barn will be acquired; residence will not be impacted; agriculture use to remain.
841-32-015	4420 Monterey Rd., Gilroy	agricultural w/ residence	46.1	2.8	1.8	Residence & cherry stand to be acquired; agriculture use to remain.
841-32-009	4360 Monterey Rd., Gilroy	agricultural & commercial	11.8	4.6	1.0	Buildings (Rapazzini Winery) to be acquired; agriculture use to remain on residual portion of 841-32-009.
841-32-010	4350 Monterey Rd., Gilroy	commercial	0.5	0.5	0.2	
841-32-011	4340 Monterey Hwy., Gilroy	agricultural	28.9	28.9	28.9	Agriculture use to be impacted.
841-32-013	n/a	agricultural & commercial	19.0	19.0	19.0	Buildings (Garlic Shoppe) to be acquired.
841-32-014	4310 Monterey Hwy., Gilroy	commercial	1.2	0.3	1.2	

Note: Information in this table is preliminary and is subject to minor revision during final design.

There are a number of transportation-related policies in the *Santa Clara County General Plan* that are relevant to the proposed project. The policies support the expansion of the County's transportation network to meet projected demand, recognizing the importance of transportation to a healthy economy and the quality of life for residents. The *General Plan* does not contain a list of specific roadway improvements, but instead contains policies that support the implementation of VTA's *Valley Transportation Plan 2035*.

The Transportation Element of the *San Benito County General Plan* (1994) contains a policy that supports the preparation of a countywide transportation master plan, so as to identify transportation needs within the County. The 2010 *San Benito County Regional Transportation Plan*, which is referenced above, and which identifies the proposed project as a needed improvement, fulfills this policy of the General Plan. The project is, therefore, consistent with the *San Benito County General Plan*.

Bicycle Plans and Policies

The *Gilroy General Plan*, *Santa Clara County General Plan*, *San Benito County General Plan*, and VTA's *Valley Transportation Plan 2035* all contain policies that promote the completion of the planned bicycle network to facilitate bicycling for both commuting and recreational purposes. In addition, Section 888 of the California Streets and Highways Code states that Caltrans will not construct a State highway as a freeway that will result in the severance or destruction of an existing major route for bicyclists unless it provides a reasonable, safe, and convenient alternate route or unless such a route already exists.

The project will eliminate bicycle access on U.S. 101 within the project limits, as well as access on SR 25 within the project limits. The project, therefore, includes replacement of north-south and east-west bicycle access, which is described in Section 1.3.1.8. The replacement facilities will provide safe and direct routes for bicyclists in the project area.

Trails Plans and Policies

The *Santa Clara Countywide Trails Master Plan (1995)* identifies a network of existing and future trails throughout the County. Although there are no existing trails that cross the project segment of U.S. 101, several trails are planned to cross the highway in the future:

- The alignment for the Mount Madonna/Coyote Lake segment of the Bay Area Ridge Trail is shown as crossing U.S. 101 in the vicinity of the U.S. 101/SR 25 interchange.
- The alignment for the Northern Recreation Retracement Route of the Juan Bautista de Anza National Historic Trail is shown as crossing U.S. 101 at the Pajaro River.
- The alignment for the Monterey - Yosemite Trail is shown as crossing U.S. 101 at the Pajaro River.

- The alignment for the Benito - Clara Trail is shown as crossing U.S. 101 at the Pajaro River.

These same trails are also identified and referenced in the *Gilroy General Plan*.

The project will facilitate the future Bay Area Ridge Trail by constructing a Class 1 bike path under U.S. 101 in the vicinity of the U.S. 101/SR 25 interchange. As described in Section 1.3.1.8, two alternatives are being considered:

Alternative 1 would route bicyclists and trail users, including equestrians, under U.S. 101 and the U.S. 101/SR 25 ramps via the large box culverts that will be installed as part of the project for flood passage purposes. This alternative is only viable under Design Option A as there would be insufficient vertical clearance in the culverts under Design Option B.

Alternative 2 would route bicyclists and trail users, including equestrians, under U.S. 101 at Carnadero Creek via a path to be constructed on the south bank of the creek. Alternative 2 is viable under both Design Option A and Design Option B. Alternative 2 is preferred by both the Santa Clara County Parks and Recreation Department and the Bay Area Ridge Trail Council.¹⁴

In addition to the crossing of U.S. 101, there are other bike path and frontage road improvements being proposed by the project in the vicinity of the U.S. 101/SR 25 interchange, all of which are described in Section 1.3.1.8. These improvements will not only facilitate travel by bicycle, but will facilitate access by all trail users.

The project would facilitate the future trail crossing of U.S. 101 at the Pajaro River because the new freeway bridge will be designed so as to provide adequate clearance for the trail. In addition, the project proposes a new bridge on Betabel Road over the Pajaro River, which will provide the opportunity for bicyclists, pedestrians, and equestrians to access the future trail from this location.

Habitat Conservation Plans/Natural Community Conservation Plans

The Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) ~~is currently under development~~ was adopted in late 2012/early 2013 by six “local partners” (VTA, County of Santa Clara, Santa Clara Valley Water District, and the Cities of San Jose, Morgan Hill, and Gilroy), in cooperation with the California Department of Fish & Wildlife (CDFW)¹⁵ and the U.S. Fish & Wildlife Service (USFWS). The Santa Clara Valley HCP/NCCP covers approximately 520,000 acres, primarily within southern Santa Clara County, and several special status plant and animal species (called

¹⁴ Letters to VTA from the Santa Clara County Parks & Recreation Department and the Bay Area Ridge Trail Council dated 2/20/09 and 2/23/09, respectively.

¹⁵ Formerly the California Department of Fish and Game (CDFG).

“covered species” in the HCP/NCCP). The current schedule anticipates that the approval implementation of the HCP/NCCP will occur in late 2013.

The proposed project is a “covered” activity, meaning that it is a project whose impacts are described and accounted for in the proposed Santa Clara Valley HCP/NCCP. The project is, therefore, consistent with this plan. [Note: For a detailed discussion as to how many of the biological impacts of the project will be mitigated by the HCP/NCCP, see Section 2.17.5.]

Impact LU-2: The project is consistent with relevant regional and local plans and policies. [**No Impact**]

2.1.3 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the existing facilities along the project segment of U.S. 101 would remain and no improvements to U.S. 101 would be built. No conflict with existing land uses would occur.

The No Build Alternative would, however, be inconsistent with the regional transportation plans that are described in Section 2.1.2.2. This statement is based on the fact that those plans identify the improvements that comprise the Build Alternative as a component of the planned highway system. Therefore, not implementing the improvements would be inconsistent with the plans.

2.1.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.2 GROWTH

2.2.1 Regulatory Setting

CEQA requires the analysis of a project's potential to induce growth. CEQA guidelines, Section 15126.2(d), require that environmental documents “...discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.”

2.2.2 **Environmental Consequences of the Build Alternative**

2.2.2.1 *Introduction*

The purpose of this section of an EIR is to disclose whether or not the construction of a project is likely to foster additional growth, either directly or indirectly. This information can be an important factor in a decision to approve a project because such approval can lead to additional projects that may have environmental consequences.

The fact that a project may result in additional growth does not imply that such growth is either detrimental or beneficial. For example, a project that furthers growth consistent with the adopted goals and policies of a city's general plan would likely be considered as beneficial. Conversely, a project that fosters growth that would conflict with such goals and policies would likely be considered as detrimental.

Finally, projects can induce growth directly or indirectly or both. A direct growth-inducing impact occurs when the construction of one or more projects is "conditioned on"¹⁶ the construction of another project. An indirect growth-inducing impact occurs when a project fosters such growth but there is not direct linkage to future projects. An indirect growth-inducing impact can also occur if a project such as a new highway provides access to an area that was previously inaccessible.

Numerous factors other than increased freeway capacity affect growth in the vicinity of U.S. 101 and in the region as a whole. These include the adopted general plans of cities and counties; the availability of other existing, new, and/or expanded arterial, highway, or transit facilities; the availability of other infrastructure such as utilities, solid waste, domestic water, wastewater treatment and schools; market demand for housing, employment, and commercial services; and the strength of the area economy and employment levels. The majority of these factors are independent of any decision to improve U.S. 101 and these factors would influence future growth in this area with or without the project.

2.2.2.2 *Direct Growth Inducement*

The proposed improvements to U.S. 101 will not result in any direct growth-inducement because there are no pending or recently-approved projects whose construction is conditioned upon the implementation of the project. Similarly, the project does not include any new roadways or connections that will provide access to areas that are currently inaccessible.

¹⁶Cities and counties frequently place conditions on a project at the time it is approved. These conditions can take the form of restrictions, project modifications, and/or prerequisites to construction. An example of a prerequisite would be where the construction of a shopping center cannot proceed until the local wastewater treatment plant has been expanded to accommodate the wastewater to be generated by that facility.

El Rancho San Benito Specific Plan

The above paragraph notwithstanding, it is important to note the connection between the proposed project and a development project that was proposed on an approximately 5,800-acre site located on the west side of U.S. 101, south of SR 25, in northern San Benito County. If approved, the project, known as the El Rancho San Benito (ERSB) Specific Plan, would include up to 6,800 residences, 550,000 square feet of commercial uses, and 1.1 million square feet of employment uses. The ERSB project would also include the construction of a 4-lane divided parkway through the site, which would extend from the U.S. 101/Betabel Road/Y Road interchange to SR 25, east of Shore Road. In May of 2009, the application for this project was withdrawn.

According to a May 7, 2009 letter from the applicant, DMB Associates, Inc., the decision to withdraw the application was that “these unprecedented economic times have caused the ERSB team to reassess the possibilities and business strategies for the property”. The letter concludes with the statement “we look forward to a time when economic conditions recover to a point where we can again consider a project on the property.”

Thus, while the ERSB project is currently not under active consideration by San Benito County, there is the possibility that the project will be resubmitted in the future. This is relevant to the discussion of the U.S. 101 Improvement Project’s growth-inducing impacts because it is widely believed that the County would not approve ERSB without the widening of U.S. 101. In fact, in an effort to facilitate the widening of U.S. 101, DMB Associates, Inc. is funding a portion of the cost of both the preliminary design and this EIR for the U.S. 101 Improvement Project. The May 7, 2009 application withdrawal letter from DMB alludes to the importance of future roadway improvements when it states that “the State’s budget woes are anticipated to significantly reduce state and county transportation improvement resources that are essential for ERSB to move forward.”

The projected growth for San Benito County that is shown in Table 6 does not include ERSB. The projected year 2035 traffic volumes that are used in various analyses in this EIR do not include traffic associated with development on the ERSB site. This is due to the fact that development of the ERSB site is not planned for, or included in, the County’s adopted General Plan. Approval of ERSB would require the County to amend the General Plan land use designations for the ERSB site from *Agricultural Productive* and *Agricultural Rangeland* and to rezone the site from *Agricultural Productive District* and *Agricultural Rangeland District*.¹⁷

Similarly, the purpose and need for the proposed U.S. 101 Improvement Project, which is described in Section 1.2, is independent of, and does not include traffic generated by, ERSB. Further, approval and construction of the proposed project by Caltrans and VTA would not require the County to approve the ERSB project. Nonetheless, to the extent that the absence of the U.S. 101 improvements are an

¹⁷Source: Notice of Preparation of an EIR for the ERSB Master Community Specific Plan, San Benito County Planning & Building Department, December 2008.

impediment to the implementation of the ERSB project, then the construction of the U.S. 101 improvements will remove that impediment.

To summarize, if the application for the ERSB project is resubmitted, and the proposed magnitude of development is the same as, or similar to, that of the previous application, it is probable that approval and implementation of the ERSB project would be conditioned on the widening of the project segment of U.S. 101. If this were to occur, it would be a direct and significant growth-inducing effect of the U.S. 101 Improvement Project.

Impact GR-1: The U.S. 101 Improvement Project would result in a direct and significant growth-inducing impact if and when the application for the ERSB project is resubmitted and the approval of ERSB is conditioned upon the widening of U.S. 101. **[Significant Impact]**

2.2.2.3 *Indirect Growth Inducement*

As shown in Table 6, substantial growth is projected to occur during the coming decades in the vicinity of the project, as well as in the region. Such growth is projected based upon forecasted economic conditions, as well as the adopted general plans of each jurisdiction. The degree to which the proposed improvements to U.S. 101 will affect this planned growth is discussed below. Three aspects of this issue are examined:

1. The potential for the project to affect the rate of future growth,
2. The potential for the project to affect the location of future growth, and
3. The potential for the project to affect the amount of future growth.

Potential for the Project to Affect the Rate of Future Growth

As stated above, the rate of growth is driven in large part by economic, housing and employment pressures and local jurisdictions' responses to those demands. Santa Clara and San Benito Counties, the adjoining counties, and incorporated cities in each county have general plans that include detailed land use designations for their respective jurisdictions. How quickly or slowly the buildout of the land uses identified in each general plan is achieved is based on a complex combination of economic conditions; demand for housing and employment; local support or opposition for development; availability of key infrastructure including potable water, sewers and schools; availability of public services and other related factors.

The proposed project will increase capacity on the project segment of U.S. 101 and the increased capacity is being proposed based on the desire to accommodate existing and future traffic demand. The forecasted traffic volumes are based on the planned land uses identified in each jurisdiction's adopted general plan. The implementation of the proposed improvements on this segment of U.S. 101 by

themselves are not likely to substantially affect the regionwide pressure or rate of growth in response to economic conditions and the demand for employment and housing. Specifically, although the proposed improvements will increase capacity on the project segment of U.S. 101, decisions to alter the rate of growth by approving development faster than would occur without the improvements would be solely the responsibility of the applicable local jurisdictions.

While these proposed improvements to U.S. 101 may make southern Santa Clara County and northern San Benito County somewhat more attractive for development because of reduced congestion on U.S. 101, local land use policies, land prices and availability, developer interest, other economic factors, and the availability of water, sewer, and public services will have a much greater role in affecting the rate of growth in these areas. Of particular importance in this process is the interest of each local jurisdiction in increasing the rate of growth in their communities. While it is possible that a jurisdiction could determine that the increased capacity resulting from the project will support accelerated growth, such a decision is unlikely. Increasing the rate of growth in these jurisdictions solely in response to additional capacity on the project segment of U.S. 101 is not likely to occur as each of these cities and counties would be much more likely to pursue a faster rate of growth based on a large number of factors, including economic conditions, local desires for increased housing or jobs, developer interest, and other factors, and would not make this decision based solely on the improvements to the project segment of U.S. 101.

Therefore, the proposed project will not result in a substantial impact related to changes in the rate of local or regional growth.

Potential for the Project to Affect the Location of Future Growth

The locations for future growth in the greater project area are identified in the adopted general plans of the surrounding cities and counties. Other than the extension of Santa Teresa Boulevard, the proposed project does not include any new connections to U.S. 101. The extension of Santa Teresa Boulevard to the U.S. 101/SR 25 interchange is identified in Gilroy's General Plan and the City's land use plan assumes that extension will be in place to support planned growth. Based on these facts, the project will not result in pressure to relocate general plan land uses to the vicinity of new ramps or access points.

It is possible that a local jurisdiction could perceive that the proposed project provides improved access to/from U.S. 101 and could, therefore, modify its general plan to shift certain planned land uses closer to existing ramps serving the project segment of U.S. 101. However, the general plan land uses were planned with consideration of a number of factors, including the existing access provided to/from U.S. 101 and major arterials, the distribution of land uses in the area, and the appropriateness of identified land uses for specific areas in southern Santa Clara/northern San Benito Counties. Therefore, if a local jurisdiction chooses to shift the locations of its general plan land uses, it would likely be in response to a number of factors and not solely to due to the increased capacity on U.S. 101.

Potential for the Project to Affect the Amount of Future Growth

The total amount of growth in any jurisdiction is based on the land uses designated in its general plan and local approvals of specific land uses consistent with those land use designations. Caltrans and VTA have no authority to adopt, modify or approve local land use plans or decisions. Each city and county has land use planning and approval for the area within its specific jurisdiction.

As discussed earlier, one or more of these land planning agencies may perceive that the proposed project provides capacity that would be adequate for additional land uses beyond those already included in their adopted general plans. As a result, those agencies could approve additional growth beyond that included in their adopted general plans. However, as discussed earlier, local land use policies, land prices and availability, developer interest, other economic factors, local support/opposition and the availability of water, sewer and public services will have a much greater role in affecting the amount of growth in an area than the provision of freeway capacity. Nonetheless, one or more of these land planning agencies could decide to amend its general plan to accommodate an increase in the total amount of growth in its jurisdiction, based in part on its assumption of increased capacity on the project segment of U.S. 101. Therefore, there is some potential that the proposed project could contribute to an increase in the amount of total growth in the area. However, this potential impact is not expected to be significant because the decision to increase the amount of growth allowed within a specific jurisdiction will be based on a large number of factors, only one of which would be the increased capacity on the project segment of U.S. 101.

Impact GR-2: The project's indirect effect on the rate, location, and/or amount of future growth will not be substantial. [**Less-than-Significant Impact**]

2.2.3 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. Therefore, no direct or indirect project-related growth would occur in the project area.

2.2.4 Avoidance, Minimization, and/or Mitigation Measures

As discussed in Section 2.2.2.2, the U.S. 101 Improvement Project would result in a direct and significant growth-inducing impact if and when the application for the ERSB project is resubmitted and the approval of ERSB is conditioned upon the widening of U.S. 101. There are no feasible measures that would avoid or minimize this impact, should it occur. The responsibility for mitigating the effects of the ERSB project would fall to the County of San Benito, the Lead Agency for that project. Caltrans

would have no authority or jurisdiction over the ERSB project and/or any other future project that would be subject to the land use regulations of a local agency.

Conclusion: The project would result in a direct and significant growth-inducing impact if and when the application for the ERSB project is resubmitted and the approval of ERSB is conditioned upon the widening of U.S. 101. [Significant Unavoidable Impact]

2.3 FARMLANDS

2.3.1 Regulatory Setting

CEQA requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to deter the early conversion of agricultural and open space lands to other uses.

2.3.2 Affected Environment

The information in this section is based primarily on the Land Evaluation & Site Assessment (LESA) Report (April 2011) that was prepared for the project. A copy of this report is available for review at the locations listed inside the front cover of this document.

As shown on the aerial photograph (see Figure 3), the project segment of U.S. 101 is located in an area that is predominantly agricultural. Extensive farmland is present along both sides of U.S. 101, with most of the farmland cultivated for cherries and row/vegetable crops. Areas adjacent to U.S. 101 that are not farmland are identified as having vegetation that is suited for the grazing of livestock (California Department of Conservation, 2007).

As shown on Figure 7, much of the farmland in the project vicinity has been designated by the State of California as either Prime Farmland or Farmland of Statewide Importance on the *Santa Clara County Important Farmland 2006* and *San Benito County Important Farmland 2006* maps.¹⁸ Table 8 provides

¹⁸**Prime Farmland** is defined as having “the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields.” **Farmland of Statewide Importance** is defined as “similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture.” Source:

a summary of existing acreage in Santa Clara and San Benito Counties that is designated as important farmland.

TABLE 8		
IMPORTANT FARMLANDS IN SANTA CLARA AND SAN BENITO COUNTIES IN 2006		
	Santa Clara County	San Benito County
Prime Farmland	20,766 acres	30,432 acres
Farmland of Statewide Importance	4,460 acres	9,106 acres
Unique Farmland	2,452 acres	2,580 acres
Farmland of Local Importance	6,113 acres	26,482 acres
Total	33,791 acres	68,600 acres
Source: 2004-2006 Land Use Conversion Tables, California Department of Conservation, Division of Land Resource Protection, 2007.		

Within the Santa Clara County segment of the project, all of the grazing lands and the vast majority of the agricultural lands on the west side of U.S. 101 are under Williamson Act contracts. On the east side of U.S. 101, it is estimated that approximately 50% of the lands within a 0.25-mile radius of the project are under Williamson Act contracts. Many parcels are also within an area designated as the Santa Clara County Agricultural Preserve. Within the San Benito County segment of the project, only the lands east of the Betabel Road/Y Road interchange are under Williamson Act contracts.

2.3.3 Environmental Consequences of the Build Alternative

Table 9 quantifies the acreage of farmland that would be impacted by the proposed project, all of which will be within Santa Clara County. Under Design Option A (i.e., relocate the U.S. 101/SR 25 interchange to the north of the existing interchange), the project will directly impact approximately 157 acres of farmland. Under Design Option B (i.e., reconstruct the U.S. 101/SR 25 interchange at its existing location), the project will directly impact approximately 122 acres of farmland.

The acreage of land under Williamson Act contracts that would be converted to highway use by the proposed project is shown in Table 10. The acreage to be converted under Design Options A and B is approximately 105 and 78 acres, respectively. Note that several of the parcels listed in Table 10 are used

TABLE 9				
AGRICULTURAL ACREAGE TO BE ACQUIRED BY THE PROJECT				
Assessor's Parcel Number	Parcel Size (Acres)	Dept. Of Conservation Farmland Designation	Design Option A	Design Option B
808-22-001	8.5	Prime	0.1	0.1
808-22-002	3.6	Prime	0.1	0.1
808-22-007	23.9	Prime	1.8	1.8
808-22-009	41.6	Prime	0.8	0.8
808-23-001	9.7	Prime	0.4	0.4
808-23-002	17.2	Prime	2.2	2.2
808-23-003	24.8	Prime	2.6	2.4
808-23-004	46.1	Prime	4.1	2.8
808-23-005	49.2	Prime	7.9	3.4
808-23-006	0.5	Prime	0.4	0.1
808-24-001	17.9	Prime	0.4	0.4
810-34-005	60.7	Prime	40.2	9.9
810-35-004	29.5	Prime	8.1	8.1
810-35-008	41.3	Prime	7.9	16.4
841-14-027	26.2	Prime	0.2	0.2
841-31-019	20.9	Prime	1.1	1.1
841-32-001	37.0	Unique	0.1	0.1
841-32-004	19.4	Prime	0.1	0.0
841-32-005	19.1	Prime	0.3	0.0
841-32-015	46.1	Prime	2.8	1.8
841-32-008	9.8	Prime	2.0	0.5
841-32-009	11.8	Prime	4.6	1.0
841-32-011	28.9	Prime	28.9	28.9
841-32-013	19.0	Prime	19.0	19.0
841-33-008	59.8	Prime	3.5	3.2

TABLE 9 [continued]				
Assessor's Parcel Number	Parcel Size (Acres)	Dept. Of Conservation Farmland Designation	Design Option A	Design Option B
841-35-002	25.8	Prime	0.3	0.3
841-35-003	175.4	Prime	2.4	2.3
841-35-004	123.9	Prime	3.5	3.5
841-34-002	264.7	Prime	5.5	5.5
841-36-016	231.5	Prime	0.1	0.1
841-36-019	32.6	Prime	5.4	5.4
Total:			156.8	121.8

TABLE 10					
WILLIAMSON ACT ACREAGE TO BE ACQUIRED BY THE PROJECT					
				Acreeage to be Acquired	
Assessor's Parcel Number	Property Address	Parcel Size (Acres)	Dept. Of Conservation Farmland Designation	Design Option A	Design Option B
808-23-003	4965 Monterey Rd.	24.8	Prime	2.6	2.4
808-23-004	4395 Monterey Rd.	46.1	Prime	4.1	2.8
808-23-005	55 Castro Valley Rd.	49.2	Prime	7.9	3.4
808-24-001	410 Mesa Rd.	17.9	Prime	0.4	0.4
810-34-005	n/a	60.7	Prime	40.2	9.9
810-34-007	Santa Teresa Blvd.	77.9	Grazing	2.2	2.2
810-35-008	4355 Monterey Rd.	41.3	Prime	7.9	16.4
810-35-007	3201 Monterey Rd.	1,186.6	Grazing	13.1	14.2
810-38-002	Monterey Rd.	17.3	Grazing	10.0	10.0
810-38-017	2775 Monterey Rd.	325.1	Grazing	1.1	1.1
841-32-004	4680 Monterey Rd.	19.4	Prime	0.1	0.0
841-32-005	4590 Monterey Rd.	19.1	Prime	0.3	0.0

TABLE 10 [continued]

				Acreage to be Acquired	
Assessor's Parcel Number	Property Address	Parcel Size (Acres)	Dept. Of Conservation Farmland Designation	Design Option A	Design Option B
841-33-008	415 Bloomfield Ave.	59.8	Prime	3.5	3.2
841-35-002	200 Bloomfield Ave.	25.8	Prime	0.3	0.3
841-35-003	Bloomfield Ave.	175.4	Prime	2.4	2.3
841-35-004	n/a	123.9	Prime	3.5	3.5
841-36-016	n/a	231.5	Prime	0.1	0.1
841-36-019	n/a	32.6	Prime	5.4	5.4
Total:				105.1	77.6

Data source for parcels that are under Williamson Act contracts is the Office of the Santa Clara County Assessor.

APNs 841-36-016 and 841-36-019 are part of the 282-acre Wang Farm Agricultural Conservation Easement that is held by the Silicon Valley Land Conservancy. Funding for this easement included both federal and state grant sources. Any changes or impacts would require approval from the California Department of Conservation and the U.S. Department of Agriculture.

for grazing, as opposed to farmlands. It is also important to note that acquiring a portion of a parcel that is under a Williamson Act contract does not typically nullify the contract on the portion not being acquired. According to California Government Code § 51295, when a project would condemn or acquire only a portion of a parcel of land subject to a Williamson Act contract, the contract is deemed null and void only as to that portion of the contracted farmland taken. The remaining land continues to be subject to the contract unless it is adversely affected by the condemnation. In such cases, the contract for the remaining portion may be canceled.

In order to determine the significance of the project's impacts on farmlands, a LESA report was prepared. The LESA model was developed by the California Department of Conservation to provide CEQA Lead Agencies with an optional methodology to ensure that significant effects of agricultural land conversions are quantitatively and consistently considered in the environmental review process. The model takes a variety of factors into account including the capability of the land itself, project size, availability of water, the agricultural land rating of surrounding properties, and the degree to which surrounding areas are protected from development.

The 1997 instruction manual for the LESA model, which is published by the Department of Conservation's Office of Land Conservation; provides a step-by-step process to be followed for the LESA. In this process, each of the above factors is assigned a score. Each factor's score is multiplied by its respective factor weight. The weighted factor scores are summed, yielding a Total LESA Score (100 points maximum). For the purpose of determining the significance of a project's conversion of agricultural lands, the LESA instruction manual correlates that determination with the Total LESA Score and the subscores, as shown in Table 11.

TABLE 11	
LESA MODEL SIGNIFICANCE CRITERIA	
Total LESA Score	Significance Determination
0 to 39 points	Not Significant
40 to 59 points	Significant <u>only</u> if Land Evaluation <u>and</u> Site Assessment subscores are each greater than or equal to 20 points
60 to 79 points	Significant <u>unless</u> either Land Evaluation <u>or</u> Site Assessment subscore is less than 20 points
80 to 100 points	Significant
<p>Source: Instruction Manual for California Land Evaluation and Site Assessment (LESA) Model, California Department of Conservation, Office of Land Conservation, 1997.</p>	

The determination of significance is based upon both the total score and the component LESA subscores. In this manner the determination is not the result of heavily skewed subscores (i.e., a site with a very high Land Evaluation score, but a very low Site Assessment score, or vice versa). As shown in Table 12, the Total LESA Scores for this project under Design Option A and Design Option B are 92.5 and 92.1, respectively. Therefore, using the LESA criteria shown in Table 11, the conversion of farmland by the project under either of the two design options is considered a significant impact under CEQA.

For those parcels under Williamson Act contracts and/or located within the Santa Clara County Agricultural Preserve, acquisition of right-of-way by the project will necessitate compliance with specific noticing and procedural requirements established by the California Department of Conservation.

Impact FARM-1: The proposed project will convert prime farmland to transportation uses. Included in this conversion are farmlands that are under Williamson Act contracts. **[Significant Impact]**

TABLE 12					
FINAL LESA SCORESHEET					
Factor Name	Factor Rating (0-100 points)	X	Factor Weighting (Total=1.00)	=	Weighted Factor Rating
DESIGN OPTION A					
<u>Land Evaluation</u>					
1. Land Capability Classification	98.05	X	0.25	=	24.51
2. Storie Index Rating	91.96	X	0.25	=	22.99
Land Evaluation Subtotal:					47.5
<u>Site Assessment</u>					
1. Project Size	100	X	0.15	=	15.0
2. Water Resource Availability	100	X	0.15	=	15.0
3. Surrounding Agricultural Lands	80	X	0.15	=	12.0
4. Protected Resource Lands	60	X	0.05	=	3.0
Site Assessment Subtotal:					45.0
Total LESA Score for Design Option A:					92.5
DESIGN OPTION B					
<u>Land Evaluation</u>					
1. Land Capability Classification	97.93	X	0.25	=	24.48
2. Storie Index Rating	90.48	X	0.25	=	22.62
Land Evaluation Subtotal:					47.10
<u>Site Assessment</u>					
1. Project Size	100	X	0.15	=	15.0
2. Water Resource Availability	100	X	0.15	=	15.0
3. Surrounding Agricultural Lands	80	X	0.15	=	12.0
4. Protected Resource Lands	60	X	0.05	=	3.0
Site Assessment Subtotal:					45.0
Total LESA Score for Design Option B:					92.10
Source: LESA Report for the U.S. 101 Improvement Project: Monterey Street to SR 129, 2011.					

2.3.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. Therefore, no impacts to farmland will occur and parcels that are under Williamson Act contracts will not be affected.

2.3.5 Avoidance, Minimization, and/or Mitigation Measures

Avoidance Measures

As described above, farmland is present along both sides of U.S. 101 within the project limits. Therefore, any increase in the footprint of the highway for the purpose of adding lanes and reconstructing the U.S. 101/SR 25 interchange, as well as the construction of frontage roads, will impact farmland to some degree.

The above paragraph notwithstanding, there are differences between the two design options under consideration as to the degree to which farmland will be impacted. When compared to Design Option A, Design Option B would avoid impacts to 35 acres of farmland (see Table 9).

Minimization Measures

The proposed project has been designed to minimize impacts to farmland by utilizing designs that require the smallest possible footprint. For example, south of the U.S. 101/SR 25 interchange, a reduced median width of 46 feet, instead of the 62 feet standard width, is proposed. Similarly, fill slopes of 2:1 are proposed, instead of the standard 4:1 slopes, which reduces the footprint.

Mitigation Measures

The discussion of mitigation for the above-described conversion of farmland to highway uses is guided by the following:

- CEQA defines “mitigation” to include: “a) avoiding the impact altogether by not taking a certain action or parts of an action, b) minimizing impacts by limiting the degree or magnitude of the action and its implementation, c) rectifying the impact by repairing, rehabilitating, or restoring the impacted environment, d) reducing or eliminating the impact over time by preservation and maintenance activities during the life of the action, and e) compensating for the impact by replacing or providing substitute resources or environments.” (Guidelines Section 15370)

- CEQA states that an EIR must include a discussion of feasible mitigation measures that could lessen an impact, even if the measures would not reduce the impact to a less-than-significant level. (Public Resources Code Section 21002)

For the reasons described above, it is not feasible to improve U.S. 101 without impacting farmland and, therefore, avoidance of this impact is not possible except by selecting the No Project Alternative. Similarly, as discussed above, the project has been designed to minimize the footprint of the improvements, thereby minimizing the impact to farmland, as compared to a footprint using standard design features.

The purchase of conservation easements is a form of mitigation used by various agencies for projects that impact farmland because the easements are a form of preservation. Easements can be particularly effective when used in conjunction with a project that will facilitate future growth. In *South County Citizens for Responsible Growth v. the City of Elk Grove*, the California Court of Appeals stated:

Under CEQA, mitigation is not limited to measures that would entirely avoid the environmental impacts of a project; rather, mitigation includes measures that would substantially lessen the significant environmental effects of the project (§ 21002). Obviously, when farmland is converted to urban use, a requirement that conservation easements be obtained on other land will not replace the converted land. However, conservation easements can diminish the development pressures created by the conversion of farmland and can provide important assistance to the public and private sectors in preserving other farmland against the danger of the domino effect created by the project. In this respect, conservation easements fall well within the concept of mitigation under CEQA.

The use of conservation easements for impacts to farmland is a mitigation option included in Caltrans' Environmental Handbook. The California Department of Conservation recommends that agencies consider the use of farmland conservation easements at a 1:1 ratio.

There are a number of agencies and programs that strive to preserve farmland, including:

- The Santa Clara County Open Space Authority (OSA) is a public agency that is charged with the preservation of undeveloped land in Santa Clara County, including the preservation of agricultural lands. A specific goal of the OSA is acquiring farmland conservation easements in southern Santa Clara County to help preserve the area's remaining prime farmland.
- The Silicon Valley Land Conservancy (formerly the Land Trust for Santa Clara County) is a private non-profit agency whose goal is the preservation of open space and agricultural land in Santa Clara County.
- The California Farmland Conservancy Program, which is administered by the California Department of Conservation, encourages the long-term, private stewardship of agricultural lands through the use of agricultural conservation easements.

MM-FARM-1.1: Farmland conservation easements will be acquired at a 1:1 mitigation-to-impact ratio. As shown in Table 9, the acreage of farmland directly impacted by the project will be 157 acres under Design Option A or 122 acres under Design Option B.

The purchase of the farmland conservation easements (or similar instruments) will be undertaken by the OSA, with the costs of the easements to be borne by the U.S. 101 Improvement Project. The acquisition area for the conservation easements will be within Santa Clara County.

The conservation easements will comply with the following:

- a) Properties on which the conservation easement are obtained will be those designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.
- b) All owners of the agricultural mitigation land will execute the document encumbering the land.
- c) The document will be recordable and contain an accurate legal description of the agricultural mitigation land.
- d) The document will prohibit any activity which substantially impairs or diminishes the agricultural productivity of the land.
- e) The document will protect any existing water rights necessary to maintain agricultural uses on the land covered by the document, and retain such water rights for ongoing use on the agricultural mitigation land.
- f) The easement will be held by the OSA or by an entity acceptable to the OSA in perpetuity. The entity will not sell, lease, or convey any interest in agricultural mitigation land which it will acquire without the prior written approval of the OSA.
- g) If the OSA or other qualifying entity owning an interest in agricultural mitigation land ceases to exist, the duty to hold, administer, monitor and enforce the interest will be transferred to another entity acceptable to the OSA.

Implementation of the above-listed measure will partially mitigate for the impact of the project to farmland. However, because the project would still result in a net loss of prime farmland, the impact would not be reduced to a less-than-significant level.

Conclusion: The project will directly result in the conversion of prime farmland and lands under Williamson Act contracts to non-agricultural uses. Mitigation is included in the project, which will partially reduce this impact, but not to a less-than-significant level. [Significant Unavoidable Impact]

2.4 RELOCATIONS AND REAL PROPERTY ACQUISITION

2.4.1 Regulatory Setting

Caltrans' Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix C for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S.C. 2000d, et seq.). Please see Appendix B for a copy of Caltrans' Title VI Policy Statement.

2.4.2 Affected Environment

The project is located in a rural/agricultural area of southern Santa Clara County/northern San Benito County. Land uses along the project segment of U.S. 101 are predominantly associated with agriculture and grazing. Other land uses include low-density residential and commercial.

2.4.3 Environmental Consequences of the Build Alternative

Under both design options, the project will require the acquisition and relocation of four residences and three businesses (Rapazzini Winery, the Garlic Shoppe and a cherry stand). The affected residences and businesses are scattered along both sides of the U.S. 101 corridor and are not part of any defined residential neighborhoods or business districts.

The descriptions and locations of the four residences and three businesses to be acquired by the project are found in Table 13. These properties will be purchased at fair market value. Residents will receive relocation assistance in accordance with the provision of Caltrans' RAP. The type of relocation assistance provided will vary on a case-by-case basis, depending on such factors as whether the occupant is an owner or renter, how long the occupant has lived in the home, cost differential between existing and replacement housing, etc. Businesses will also receive relocation assistance in accordance with Caltrans' RAP. Business displacees will receive information on comparable properties for lease or purchase. For a summary of the RAP, please see Appendix C of this document.

The displacement of these residences and businesses is a substantial economic and social effect of the project. Under CEQA it is not, however, an environmental impact. Nonetheless, this information is presented in this document in accordance with § 15131 of the CEQA Guidelines.

2.4.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. No temporary and/or permanent removal of buildings in the project area would occur. Therefore, there would be no relocations of any residences or businesses.

T A B L E 13			
RELOCATIONS RESULTING FROM THE PROJECT			
Assessor's Parcel Number	Property Address	Existing Land Use	Relocations
808-23-003	4965 Monterey Rd., Gilroy	agricultural w/ residence	Residence and associated structures to be acquired; agriculture use to remain.
808-23-004	4395 Monterey Rd., Gilroy	agricultural w/ residence	Residence and associated structures to be acquired; agriculture use to remain.
808-23-005	55 Castro Valley Rd., Gilroy	agricultural w/ residence and farmworker cottages	Residence and associated structures and farmworker cottages to be acquired; agriculture use to remain.
810-35-007	3201 Monterey Rd., Gilroy	agricultural w/residence and barn	Barn will be acquired; residence will not be impacted; agriculture use to remain.
841-32-015	4420 Monterey Rd., Gilroy	agricultural w/ residence	Residence and cherry stand to be acquired; agriculture use to remain.
841-32-009	4360 Monterey Rd., Gilroy	agricultural and commercial	Buildings (Rapazzini Winery) to be acquired; agriculture use to remain on residual portion of 841-32-009.
841-32-010	4350 Monterey Rd., Gilroy	commercial	
841-32-013	n/a	agricultural and commercial	Buildings (Garlic Shoppe) to be acquired.
841-32-014	4310 Monterey Hwy., Gilroy	commercial	

Note: Information in this table is preliminary and is subject to minor revision during final design.

2.5 UTILITIES/EMERGENCY SERVICES

2.5.1 Affected Environment

Various utility lines (e.g., gas, electric, water, communications, sanitary sewer, stormwater, etc.) cross U.S. 101 and SR 25 and are located along/within the local streets that cross or parallel these highways. The existing utilities include a fiber optic line owned by Charter Communications and a gas line owned by Pacific Gas & Electric Company (PG&E), which are located within Caltrans' right-of-way on the east side of U.S. 101. There is also an existing 115-kilovolt PG&E high voltage electric line that runs parallel to the UPRR tracks and crosses SR 25 adjacent to the at-grade crossing of the tracks.

Emergency services at the northerly end of the project alignment are provided by the City of Gilroy's Fire and Police Departments. The Gilroy Fire Department operates three fire stations, the closest to the project located at 7070 Chestnut Street, which is approximately one mile north of the U.S. 101/Monterey Street interchange. The Gilroy Police Department is located on Hanna Street near Downtown Gilroy.

The California Department of Forestry and Fire Protection (Cal Fire) provides fire protection services in the project area in the unincorporated portions of Santa Clara and San Benito Counties. The closest Cal Fire stations are located in Morgan Hill and Hollister.

Police services in the project area in the unincorporated portions of Santa Clara and San Benito Counties are provided by the Santa Clara County Sheriff's Department and the San Benito County Sheriff's Department, respectively. The South County Substation of the Santa Clara County Sheriff's Department is located in San Martin, about ten miles from the north end of the project area. The San Benito County Sheriff's Department is located in Hollister.

Police services on U.S. 101 and SR 25 are primarily provided by the California Highway Patrol (CHP).

Ambulance and medical transport services in the project area are provided by American Medical Response. The closest hospital is St. Louise Regional Hospital in Gilroy.

2.5.2 Environmental Consequences of the Build Alternative

A number of the existing utility lines are located in areas where they will conflict with the improvements that will be constructed by the project. Therefore, where necessary, some of the existing utility lines will be relocated to avoid such conflicts, as is commonplace for projects of this nature. Such utility work will not result in disruption of utility services in the project area because existing lines will not be disconnected prior to the relocated lines being in place.

The existing fiber optic and gas lines that are located within the Caltrans right-of-way on the east side of U.S. 101 will be relocated to adjacent frontage roads or to within easements on the adjacent private properties.

At the location where the existing 115-kilovolt electric transmission line crosses SR 25, the project will raise the profile of SR 25 in order to create a grade-separation at the UPRR crossing. In order to maintain the required vertical clearance between the elevated roadway and the transmission line, the transmission line will be raised. This will involve replacement of the PG&E towers closest to SR 25 with higher towers in order to achieve this clearance. Up to four towers will be replaced. This modification will not result in the electric lines being moved closer to any residences, schools, or other sensitive areas.

Emergency services would indirectly benefit from the proposed project in that, by reducing peak commute period congestion, emergency vehicle response times will be reduced. The project will not sever or alter any emergency evacuation routes.

Impact UTIL-1: The project will not result in the disruption of utility services. The project will not hinder emergency vehicle response times. The project will not sever or alter any emergency evacuation routes. **[No Impact]**

2.5.3 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. Therefore, there would be no effect on utilities or emergency services in the project area.

2.5.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.6 TRAFFIC AND TRANSPORTATION/ PEDESTRIAN AND BICYCLE FACILITIES

2.6.1 Regulatory Setting

The VTA and Caltrans are committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

2.6.2 Affected Environment

The information in this section is based primarily on a technical Traffic Operations Analysis Report (2013) that was prepared for the project. A copy of this study is available for review at the locations listed inside the front cover of this document.

2.6.2.1 *Existing Roadway Network*

U.S. 101 is a major north-south highway in California, and is a key facility in Santa Clara and San Benito Counties. Within the project limits, U.S. 101 is currently a 4-lane expressway in Santa Clara County and a 4-lane freeway in San Benito County. Existing interchanges on U.S. 101 are located at Monterey Street, SR 25, Betabel Road/Y Road, and SR 129. Within Santa Clara County, there is also access between U.S. 101 and a number of local roadways and driveways.

SR 25 is a conventional 2-lane highway that is 75 miles in length. It extends southeasterly from U.S. 101 to the City of Hollister and terminates at the junction of SR 198 in Monterey County. Caltrans is currently studying the upgrade/widening of SR 25 to a 4-lane expressway between the UPRR crossing (just west of Bloomfield Avenue) and San Felipe Road in Hollister.

SR 129 is a 2- to 4-lane highway that extends in an east-west direction. Its westerly terminus is at SR 1 in Watsonville and its easterly terminus is at U.S. 101 in San Benito County.

Santa Teresa Boulevard is a north-south arterial street that extends from Watsonville Road in Morgan Hill on the north to Castro Valley Road in Gilroy on the south.

Monterey Street (also known as Monterey Highway and Monterey Road) is a main north-south street in Gilroy. In the northerly portion of the project area, it provides access to properties located along both sides of U.S. 101.

Other local roadways in the project area include Betabel Road, Y Road, Castro Valley Road, Mesa Road, Bolsa Road, and Bloomfield Avenue.

2.6.2.2 *Existing Public Transit*

Public transit bus service in the project area is provided by several agencies:

- VTA operates bus routes throughout Santa Clara County, including the City of Gilroy. The closest bus line to the project is Route 18, which runs between the downtown Gilroy Transit Center and Gavilan College.

- San Benito County Express operates bus service between Hollister and Gavilan College in Gilroy, as well as between Hollister and the Gilroy Transit Center.
- Monterey-Salinas Transit operates one bus route through the project area. Route 55 operates on U.S. 101 between Monterey and San Jose, with a stop at the Gilroy Transit Center.

The closest rail service is Caltrain, which operates between Gilroy and San Francisco. All of the above bus routes connect with Caltrain at the Gilroy Transit Center.

Amtrak's *Coast Starlight* passenger trains traverse the project area on the UPRR tracks that generally parallel U.S. 101. These trains provide daily service between Los Angeles and Seattle. The closest stops to the project area are located in Salinas and San Jose.

2.6.2.3 *Existing Bicycle and Pedestrian Facilities*

Within the project limits, bicycle travel occurs in both the north-south and east-west directions. Because U.S. 101 is designated as an expressway between Monterey Street and the southern limits of Santa Clara County, and since there is no existing alternative bike route between SR 25 and SR 129, the north-south bicycle traffic is allowed to ride on the outside shoulders of U.S. 101 between Monterey Road and SR 129. The west-to-east bicycle traffic uses Mesa Road, the southbound U.S. 101 shoulder, the U.S. 101 to SR 25 off-ramp and then along the shoulder of SR 25. East-to-west bicycle traffic travels along the SR 25 shoulder, the SR 25 to U.S. 101 on-ramp, the northbound U.S. 101 shoulder, and exits at the Monterey Street interchange.

2.6.2.4 *Existing Traffic Conditions*

Existing AM and PM peak-hour traffic volumes on roadways located in the project area are shown in Table 14. Existing peak-hour conditions on the project segment of U.S. 101 are generally uncongested as the existing volumes are well within the capacity of the highway.

Intersection Levels of Service

Local street performance is measured using the "level of service" (LOS) concept, whereby traffic demand is evaluated in the context of capacity. Since intersections are a key factor in determining the capacity of local streets, traffic impact analyses focus on peak-hour operations at intersections. The impact methodology computes a level of service taking into account factors such as the demand for each traffic movement (i.e., left turns, straight, right turns), the number of lanes, and (where applicable) signal timing. Based on these factors, the methodology computes the average delay per vehicle at the intersection using software known as Synchro, to which a corresponding level of service is assigned.

TABLE 14

EXISTING PEAK-HOUR TRAFFIC DEMAND VOLUMES

Segment	Direction	AM	PM
U.S. 101: North of Monterey Street	Northbound	3,300	2,700
	Southbound	1,750	3,250
U.S. 101: South of Monterey Street	Northbound	2,950	2,550
	Southbound	1,850	3,400
U.S. 101: South of SR 25	Northbound	1,700	2,100
	Southbound	1,350	2,250
U.S. 101: South of SR 129	Northbound	1,550	1,950
	Southbound	1,250	2,250
SR 25: West of Bloomfield Avenue	Eastbound	450	1,400
	Westbound	1,300	550
SR 129: West of U.S. 101	Eastbound	350	450
	Westbound	250	400
Santa Teresa Boulevard: North of Castro Valley Road	Northbound	50	50
	Southbound	150	150
Santa Teresa Boulevard: North of Mesa Road	Northbound	50	100
	Southbound	250	150
Santa Teresa Boulevard: North of Thomas Road	Northbound	350	200
	Southbound	500	250
Thomas Road: North of Santa Teresa Boulevard	Northbound	400	200
	Southbound	350	200
Luchessa Boulevard: West of Thomas Road	Eastbound	300	100
	Westbound	300	100
Monterey Street: South of Luchessa Boulevard	Northbound	700	550
	Southbound	600	650
Monterey Road: South of Travel Park Circle	Northbound	200	200
	Southbound	150	200

All volumes are rounded to the nearest 50.

Source: Traffic Operations Analysis Report for the U.S. 101 Improvement Project (Monterey Street to SR 129), 2013.

As summarized in Tables 15 and 16, level of service can range from "LOS A", representing free-flow conditions, to "LOS F", representing jammed/over-saturated conditions.

Santa Clara County's minimum acceptable LOS for peak-hour operations at local intersections is LOS D. The City of Gilroy's standard is LOS C, except in designated commercial and industrial areas where LOS D is acceptable. San Benito County's standard is LOS C.

The traffic analysis prepared for this project evaluated the peak-hour operations at 15 intersections in the project area. The study intersections, which are listed in Table 17, were chosen based on their proximity to the proposed improvements. Five of the study intersections are signalized and the rest are controlled by stop signs on one or more approaches.

Table 17 shows the existing peak-hour levels of service at each of the study intersections. The levels of service were calculated using the above-described methodology. As shown in Table 17, four of the study intersections are operating below acceptable levels of service under existing conditions:

- SR 25/U.S. 101 Southbound Ramps (AM and PM peak-hours)
- SR 25/U.S. 101 Northbound Ramps (PM peak-hour)
- SR 25/Bloomfield Avenue (AM and PM peak-hours)
- Luchessa Boulevard/Thomas Road (AM peak-hour)

2.6.2.5 Future "No Build Alternative" Traffic Conditions

VTA's Countywide travel demand model was used to forecast future traffic volumes in the project area. Consistent with standard practice, the year 2035 was chosen for the long-term horizon year as it is 20 years beyond the estimated 2015 project completion date. [Note: The 2015 completion date is subject to the availability of funding.]

The benefit of the travel demand model is that it provides projections of future traffic volumes, taking into account traffic from future development planned for in the approved general plans of the cities in Santa Clara County. The model also accounts for planned growth in the region, including the Monterey Bay Area, as well as planned improvements to the transportation network. The projected year 2035 volumes are shown in Table 18.

When compared to existing conditions, key findings as to future (2035) travel demand in the project area are as follows:

- As indicated by comparing the "existing" volumes (Table 14) to the "2035 no project" volumes (Table 18), increases in traffic will be substantial as a result of planned growth.

TABLE 15		
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS		
Level of Service	Description of Operations	Average Control Delay ^a (seconds/vehicle)
A	Insignificant Delays: No approach phase is fully utilized and no vehicle waits longer than one red indication.	≤ 10
B	Minimal Delays: An occasional approach phase is fully utilized. Drivers begin to feel restricted.	> 10 to 20
C	Acceptable Delays: Major approach phase may become fully utilized. Most drivers feel somewhat restricted.	> 20 to 35
D	Tolerable Delays: Drivers may wait through no more than one red light. Queues may develop but dissipate rapidly, without excessive delays.	> 35 to 55
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues from upstream.	> 55 to 80
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80

^a Average Control Delay includes the time for initial deceleration delay, queue move-up time, stopped delay, and final acceleration. It is measured for the whole intersection.
Source: Transportation Research Board, 2000 Highway Capacity Manual.

TABLE 16		
LEVEL OF SERVICE DEFINITIONS FOR UNSIGNALIZED INTERSECTIONS		
Level of Service	Description of Operations	Control Delay ^a (seconds/vehicle)
A	Little or no delay for controlled movements.	≤ 10
B	Some delay for controlled movements.	> 10 to 15
C	Moderate delay for controlled movements.	> 15 to 25
D	Significant delay for controlled movements.	> 25 to 35
E	Severe delay and congestion.	> 35 to 50
F	Total breakdown with extreme delays.	> 50

^a Control Delay includes the time for initial deceleration delay, queue move-up time, stopped delay, and final acceleration. It is measured for the worst turning movement.
Source: Transportation Research Board, 2000 Highway Capacity Manual.

TABLE 17

EXISTING PEAK-HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Type	AM Peak		PM Peak	
		Delay (sec.)	LOS	Delay (sec.)	LOS
Monterey Street/SB 101 Ramps	Signalized	9	A	11	B
Monterey Street/NB 101 Ramps	Signalized	27	C	32	C
SR 25/SB 101 Ramps	Unsignalized	40	E	>50	F
SR 25/NB 101 Ramps	Unsignalized	13	B	>50	F
SR 129/SB 101 Ramps	Unsignalized	9	A	12	B
SR 129/NB 101 Ramps	Unsignalized	10	B	11	B
SR 156/NB 101 Ramp	Unsignalized	1	A	0	A
SR 25/Bloomfield Avenue	Unsignalized	37	E	40	E
Santa Teresa Boulevard/Thomas Road	Signalized	26	C	24	C
Santa Teresa Boulevard/Mesa Road	Signalized	12	B	12	B
Santa Teresa Boulevard/Gavilan Driveway	Unsignalized	9	A	10	A
Santa Teresa Boulevard/Castro Valley Road	Unsignalized	11	B	13	B
Luchessa Boulevard/Thomas Road	Unsignalized	40	E	10	A
Luchessa Boulevard/Monterey Street	Signalized	38	D	35	C
Searle Road/SR 129	Unsignalized	11	B	18	C

Source: Traffic Operations Report for the U.S. 101 Improvement Project (Monterey Street to SR 129), 2013.

TABLE 18

YEAR 2035 PEAK-HOUR TRAFFIC DEMAND VOLUMES

Segment	Direction	No Project		With Project	
		AM	PM	AM	PM
U.S. 101: North of Monterey Street	Northbound	4,350	4,650	4,650	5,050
	Southbound	4,300	5,400	4,650	6,750
U.S. 101: South of Monterey Street	Northbound	4,300	4,950	4,750	5,300
	Southbound	4,150	4,950	4,850	6,550
U.S. 101: South of SR 25	Northbound	2,900	3,750	3,950	4,700
	Southbound	3,750	4,000	4,700	5,300
U.S. 101: South of SR 129	Northbound	3,150	3,200	3,550	3,700
	Southbound	2,700	3,600	3,050	4,400
SR 25: West of Bloomfield	Eastbound	1,450	1,950	1,550	1,950
	Westbound	1,850	1,450	1,850	1,750
SR 129: West of U.S. 101	Eastbound	850	2,100	1,050	2,200
	Westbound	2,350	1,650	2,500	1,900
Santa Teresa Bl: N of Castro Valley Rd	Northbound	150	150	400	950
	Southbound	650	550	650	500
Santa Teresa Bl: N of Mesa Road	Northbound	200	450	350	1,050
	Southbound	1,000	650	1,050	500
Santa Teresa Bl: N of Thomas Road	Northbound	700	500	700	800
	Southbound	1,350	900	1,350	700
Thomas Road: N of Santa Teresa Bl.	Northbound	700	450	650	700
	Southbound	650	450	550	350
Luchessa Bl: W of Thomas Road	Eastbound	700	250	600	250
	Westbound	550	550	450	600
Monterey St: S of Luchessa Bl.	Northbound	1,300	1,350	1,050	1,050
	Southbound	950	1,250	900	1,300
Monterey Rd: S of Travel Park Circle	Northbound	450	700	600	650
	Southbound	300	600	200	500

All volumes are rounded to the nearest 50.

Source: Traffic Operations Report for the U.S. 101 Improvement Project (Monterey St. to SR 129), 2013.

- By 2035, peak-hour travel demand will exceed capacity at various locations along the project segment of U.S. 101. The resulting congestion will substantially increase travel times. As shown in Table 19, the time it takes to drive the 9.4 miles between SR 156 and Monterey Street will increase by up to approximately six minutes during the AM peak-hour and up to approximately three and one-half minutes during the PM peak-hour.

T A B L E 19						
COMPARISON OF YEAR 2035 TRAVEL TIME ESTIMATES ON U.S. 101 BETWEEN MONTEREY STREET AND SR 156						
[Expressed in Minutes:Seconds]						
	AM Peak Hour			PM Peak Hour		
	No Project	With Project		No Project	With Project	
		Design Option A	Design Option B		Design Option A	Design Option B
Northbound	11:48	9:24	10:00	11:30	9:24	9:24
Southbound	14:24	8:06	12:24	11:54	11:06	11:54
Distance between Monterey Street and SR 156 is approximately 9.4 miles. For reference, driving this distance at 65 mph would take approximately 8 minutes and 20 seconds (8:20).						
Source: Traffic Operations Analysis Report for the U.S. 101 Improvement Project (Monterey Street to SR 129), 2013.						

- By 2035, as shown in Table 20, nine of the study intersections will be operating under congested conditions (i.e., LOS E or F) during the AM and/or PM peak-hours.

2.6.3 Environmental Consequences of the Build Alternative

This section describes the effects of the project on traffic, transit, and pedestrian/bicycles facilities.

2.6.3.1 *Impacts to U.S. 101*

Key findings with regard to the effect of the project on U.S. 101 are as follows:

- The improvements to U.S. 101 that are proposed by the project will increase the capacity of the highway within the project limits. This increased capacity will allow U.S. 101 to accommodate more of the projected traffic demand, as indicated by the data in Table 18.

TABLE 20
YEAR 2035 PEAK-HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Type		2035 - No Project		2035 - With Project	
			Delay	LOS	Delay	LOS
Monterey Street/ SB 101 Ramps	Signalized	AM	14	B	17	B
		PM	28	C	19	B
Monterey Street/ NB 101 Ramps	Signalized	AM	26	C	37	D
		PM	47	D	39	D
SR 25/ SB 101 Ramps	Unsignalized; project to add signal	AM	>50	F	Option A - 15	Option A - B
		PM	>50	F	Option B - 54 Option A - 15 Option B - 34	Option B - D Option A - B Option B - C
SR 25/ NB 101 Ramps	Unsignalized; project to add signal	AM	39	E	Option A - 11	Option A - B
		PM	>50	F	Option B - 13 Option A - 10 Option B - 15	Option B - B Option A - B Option B - B
SR 129/ SB 101 Ramps	Unsignalized; project to add signal	AM	>50	F	>80	F
		PM	>50	F	>80	F
SR 129/ NB 101 Ramps	Unsignalized	AM	>50	F	44	E
		PM	46	E	>50	F
SR 156/ NB 101 Ramp	Unsignalized	AM	1	A	1	A
		PM	0	A	0	A
SR 25/ Bloomfield Ave.	Unsignalized; no left turns under project	AM	>50	F	>50	F
		PM	>50	F	47	E
Santa Teresa Blvd/ Thomas Road	Signalized	AM	45	D	46	D
		PM	30	C	34	C
Santa Teresa Blvd/ Mesa Road	Signalized	AM	42	D	45	D
		PM	22	C	26	C
Santa Teresa Blvd/ Gavilan Driveway	Unsignalized; project to add signal	AM	15	B	7	A
		PM	31	D	11	B
Santa Teresa Blvd/ Castro Valley Rd	Unsignalized	AM	>50	F	23	C
		PM	47	E	>50	F
Luchessa Blvd/ Thomas Road	Unsignalized	AM	>50	F	>50	F
		PM	>50	F	>50	F
Luchessa Blvd/ Monterey Street	Signalized	AM	>80	F	76	E
		PM	80	E	71	E
Searle Road/ SR 129	Unsignalized	AM	>50	F	>50	F
		PM	>50	F	>50	F

Source: Traffic Operations Report for the U.S. 101 Improvement Project (Monterey St. to SR 129), 2013.

- As shown in Table 19, when compared to “no project” conditions, the project will reduce peak-period travel times along the project segment of U.S. 101. This savings in travel times is a direct result of the reduction in congestion due the increased capacity that will be provided by the proposed improvements.

Impact TRAN-1: The project will improve peak-period traffic operations along the project segment of U.S. 101. **[Beneficial Impact]**

2.6.3.2 *Impact on Operations at Intersections*

Table 20 shows future levels of service/delay at the study intersections with the project in place and compares those results to “no project” conditions. The data in Table 20 show that the project will reduce delays at some of the study intersections, but increase delays at other intersections. This variation is due to several factors including 1) improvements in freeway operations that allow more vehicles to reach an intersection, 2) changes in circulation due to the extension of Santa Teresa Boulevard to the U.S. 101/SR 25 interchange, and 3) project-related changes to an intersection such as the addition of a traffic signal.

When compared to “no project” conditions, the project will improve the peak-hour level of service at the following intersections:

- Monterey Street/U.S. 101 Southbound Ramps: LOS will improve from “C” to “B” during the PM peak-hour.
- SR 25/U.S. 101 Southbound Ramps: LOS will improve from “F” to “B” (Design Option A) or “D” (Design Option B) during the AM peak-hour. LOS will improve from “F” to “B” (Design Option A) or “C” (Design Option B) during the PM peak-hour.
- SR 25/U.S. 101 Northbound Ramps: LOS will improve from “E” to “B” during the AM peak-hour (both design options). LOS will improve from “F” to “B” during the PM peak-hour (both design options).
- Santa Teresa Boulevard/Gavilan College Driveway: LOS will improve from “B” to “A” during the AM peak-hour and will improve from “D” to “B” during the PM peak-hour. This improvement will be due to the fact that the project will install a traffic signal at this intersection.
- Santa Teresa Boulevard/Castro Valley Road: LOS will improve from “F” to “C” during the AM peak-hour.
- Monterey Street/Luchessa Boulevard: LOS will improve from “F” to “E” during the AM peak-hour.

At the Santa Teresa Boulevard/Castro Valley Road intersection, the project will cause the LOS to drop from “E” to “F” during the PM peak-hour. This is not a significant impact because the corresponding

increase in delay would be minimal. [Note: Increases of less than 13 seconds are under the threshold of significance used for this assessment.]

At the SR 129/U.S. 101 Southbound Ramps intersection, the data in Table 20 appear to indicate that, when compared to “no project” conditions, the project will increase delay from >50 seconds to >80 seconds. This apparent increase is misleading because the methodology, as well as the LOS E/F threshold, used for an unsignalized intersection for the “no project” scenario is different than the methodology and threshold used for a signalized intersection for the “with project” scenario. Although this appears at face value as a substantial adverse impact, in reality the delay at this intersection will be less with the project constructed because it will install a traffic signal and it will construct a second right-turn lane on the off-ramp, both of which will increase capacity. The precise delays are not reported in the table because calculations in both methodologies can lead to unreasonable delay values when demand is greater than capacity.

Impact TRAN-2: The project will not result in a significant impact at any of the study intersections. [**Less-than-Significant Impact**]

2.6.3.3 *Impact on Pedestrian and Bicycle Facilities*

As described in Section 2.6.2.3, within the project limits, bicyclists are allowed to ride on the shoulder of U.S. 101 and SR 25. The project will eliminate bicycle access on both U.S. 101 and SR 25 within the project limits.

The project will, however, replace this access with new north-south and east-west bicycle and pedestrian facilities in the project area. The new facilities will consist of a combination of Class 1 bike paths and Class 2 bike lanes, as described in Section 1.3.1.8. See also the discussion in Section 2.1.2.2, which describes these new facilities in the context of existing plans and policies that pertain to bicycles and trails. These new facilities will provide safe and direct bicycle and pedestrian access in the project area, which would represent an improvement over existing conditions.

Impact TRAN-3: Although the project will eliminate bicycle access along the shoulder of U.S. 101 and SR 25 within the project limits, this access will be replaced with a system of new north-south and east-west bike lanes and bike paths, providing a safe and direct means for both bicycle and pedestrian travel in this area. [**Beneficial Impact**]

2.6.4 Environmental Consequences of the No Build Alternative

Please see Section 2.6.2.5, *Future "No Build Alternative" Traffic Conditions*.

2.6.5 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.7 VISUAL/AESTHETICS

2.7.1 Regulatory Setting

CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state "with...enjoyment of aesthetic, natural, scenic and historic environmental qualities." (CA Public Resources Code Section 21001[b])

Various state, regional, and local agencies have regulations and policies that are designed to protect scenic resources. Caltrans, for example, administers the California Scenic Highway Program and also designates certain highways as Landscaped Freeways, which sets limits on locations of large advertising signs next to the highway. In addition, both Santa Clara and San Benito Counties, as well as the City of Gilroy, have designations for scenic corridors and ordinances that govern tree removal and replacement. Although Caltrans is not subject to local regulations, projects are designed to avoid or minimize visual impacts, including tree removal, to the greatest extent practicable. In addition, it is Caltrans' policy to replace highway plantings that are removed by a project with new planting, which is consistent with the intent and objectives of the local regulations and policies.

2.7.2 Affected Environment

The information in this section is based primarily on a technical Visual Impact Assessment (January 2011) that was prepared for the project. A copy of this study is available for review at the locations listed inside the front cover of this document.

2.7.2.1 *Methodology*

The viewshed for the project was determined by a visual inspection of the proposed features. The existing U.S. 101 highway, U.S. 101/SR 25 interchange, U.S. 101/SR 129 interchange, SR 25, and Santa Teresa Boulevard with vehicles, signs, lights, utility poles, bridges and roadway pavement were used to calibrate the distances from which the proposed project could be seen from a half mile radius. The visual environment was assessed from public road vantage points, some adjacent to sensitive receptors and some within the U.S. 101, SR 25 and SR 129 rights-of-way that would be representative of the range of views of the proposed improvements.

Characteristics were grouped into two categories: urban structures and natural features. Urban structures tend to be relatively uniform in character compared with natural features that tend to be random and diverse. The presence, combination and massing of these features in the views were analyzed. Characteristics were described in terms of line, form, color and texture.

The quality of the existing visual environment was determined using a combination of three criteria:

- **Vividness:** "...the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns..."
- **Intactness:** "...the visual integrity of the natural and man-built landscape and its freedom from encroaching elements..."
- **Unity:** "...the visual coherence and compositional harmony of the landscape concerned as a whole..."

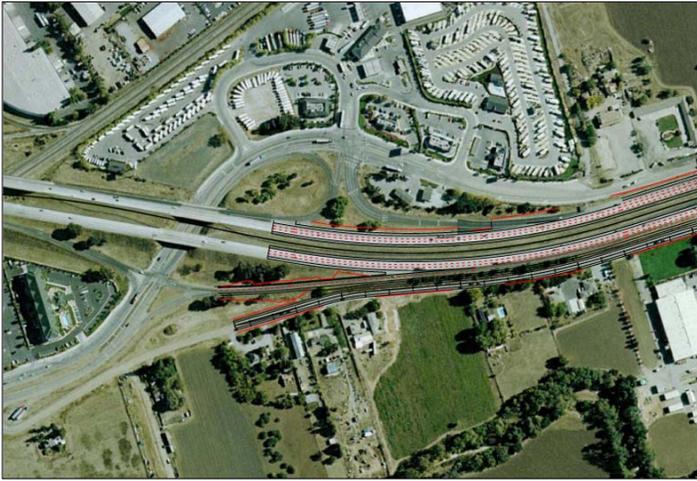
Viewer sensitivity or response was estimated based on their "use" of the viewshed. Sensitive receptors in the vicinity of the project include single-family residents, and users of Gavilan College and the Gavilan Golf Course. Somewhat sensitive viewers are visitors to the area and staying at the recreational vehicle parks located to the north and south central areas of the project. Residents are particularly sensitive because of their relatively prolonged exposure to visible features in their environment, and the extent to which those features are familiar and define the character of their neighborhoods. Recreation users are also sensitive receptors because of their prolonged use of the site while recreating, and the degree to which the site has been chosen as a destination for various reasons which may include enjoyment derived from the setting while recreating.

Viewers considered to be not as sensitive are within commercial and industrial sites where their primary visual focus is on job-related tasks. Motorists within transportation rights-of-way in general have a time-limited exposure to visual features and are considered not as sensitive as residential or recreation site viewers who have prolonged views of the environment. Motorists within scenic corridors would be considered sensitive receptors since scenic resources may contribute to the pleasure of the driving experience. Within the project limits, motorists are considered somewhat sensitive. Bicyclists are also considered somewhat sensitive viewers as they bicycle for recreation and to enjoy the scenic vistas of the valley and mountains.

2.7.2.2 *Existing Visual Environment*

The project segment of U.S. 101 is located in valley and foothill terrain in southern Santa Clara/northern San Benito Counties. The Santa Cruz Mountains are located to the south and southwest, while the Diablo Range is located to the east. The predominant character of the area is rural agriculture with urban features concentrated at the northerly end of the project in the City of Gilroy. The photos shown on Figure 8 are representative of the project's visual setting.

The urbanized features at the northerly end of the project consist of commercial, industrial, and residential buildings along U.S. 101 in the City of Gilroy. As one travels south from Gilroy along U.S.



Aerial photograph at north end of project showing urbanized uses adjacent to US 101



US 101, looking south from Sargent overcrossing



US 101, looking south, in vicinity of Castro Valley Road



US 101, looking south at Pajaro River bridge



US 101, looking south toward the SR 25 overcrossing



US 101, looking south, with SR 129 overcrossing visible in distance

101, the urbanized environment gives way to rural agricultural and open space features. The visual environment includes large expanses of cultivated fields, as well as views of both nearby hills and more distant mountains. The environment includes residences, barns, and other buildings that are typically associated with rural agricultural settings. Overhead utility lines are visible from many locations, as is the UPRR line that generally parallels U.S. 101.

Other notable man-made structures are the bridges that convey U.S. 101 over various creeks and rivers, retaining walls, and a number of overpass structures. The latter includes overpasses at SR 25, Betabel Road/Y Road, and SR 129.

A RV park (Betabel RV Park) is located along the west side of U.S. 101 adjacent to the Betabel Road/Y Road interchange. Several commercial uses, as well as a number of single-family residences, are located at the southerly end of the project in the area adjacent to the U.S. 101/SR 129 interchange.

The project segments of U.S. 101, SR 25, and SR 129 are not designated as State Scenic Highways. In addition, none of these roadway segments are classified as Landscaped Freeways, a designation that sets limits on the locations of large advertising signs next to the highway in order to preserve the visual quality of the highway from the perspective of motorists.

2.7.3 Environmental Consequences of the Build Alternative

2.7.3.1 *Overview*

Implementation of the roadway improvements that comprise the proposed project will result in a variety of changes to the existing visual environment. The changes will include the removal of four residences and two businesses that are located along U.S. 101 in the vicinity of the U.S. 101/SR 25 interchange, the construction of new frontage roads, the extension of Santa Teresa Boulevard, the construction of a new U.S. 101/SR 25 interchange, the construction of new and widened bridges, and a wider roadway on U.S. 101 to accommodate the new lanes of traffic. Other changes will result from the removal of vegetation and the construction of retaining walls. The following text describes the visual impacts of the project from several perspectives:

- The visual effects of new retaining walls,
- The net visual effects of the project from four key vantage points in the area, and
- The visual effect due to the removal of vegetation

2.7.3.2 *Visual Effects of Retaining Walls*

Based on the preliminary project design, the project will include nine retaining walls, the locations, heights, and lengths of which are shown in Table 21. Motorists are accustomed to seeing these

structures as they are common along many highways. For this project, the new walls will be visible from a number of vantage points, including U.S. 101, other roadways, and at nearby land uses.

TABLE 21

LIST OF PROPOSED RETAINING WALLS

Wall #	Wall Length (feet)	Wall Height (feet)	Design Option	Location	Significant Visual Impact?
1	390	4-10	A & B	Southbound U.S. 101 off-ramp to SR 129	No
2	600	4-17	A & B	South approach to San Benito River bike bridge	No
3	550	4-17	A & B	North approach to San Benito River bike bridge	No
4	1,130	4-11	A & B	Between 101 & frontage road, north of Pajaro River	No
5	900	4-9	A & B	Northbound U.S. 101, north of Tar Creek	No
6	1,645	6-12	A & B	Southbound U.S. 101 on-ramp from Monterey St.	No
7	121	3	B	Southbound U.S. 101 at SR 25	No
8	510	8-35	B	Eastbound Santa Teresa Blvd, just west of U.S. 101	No
9	257	5-23	B	Southbound U.S. 101 on-ramp from SR 25	No

Note: All proposed wall dimensions and locations are approximations based on preliminary engineering and are subject to refinement during final design.

Of the nine new retaining walls, wall #8 would be most visible as it will be constructed along the hillside to the west of the existing U.S. 101/SR 25 interchange. This wall, which would only be built if Design Option B is chosen, will be noticeable from vantage points along U.S. 101, Santa Teresa Boulevard, and Castro Valley Road. By its nature, the wall structure will contrast with the existing grassy slopes and oak trees. Despite this contrast, the overall impact to the visual environment will not be significant.

Based on the assessment of each retaining wall by the landscape architect who prepared the project's Visual Impact Assessment, the character and quality of the visual environment will not be enhanced or degraded to a substantial degree from the perspective of the viewers of the walls.

Although the visual impact of the retaining walls will not be significant, the impact could be further reduced by adding brown color to the concrete. A formliner/texture could also be used. Landscaping could also be added to soften the appearance of the structures. Landscaping should be consistent with

the character of the rural environment and in accordance with Caltrans standards for replacement planting and plant materials and installation guidelines. If implemented, these measures would reduce the contrast between the walls and the surrounding natural environment, thereby diminishing their visibility from the surrounding areas.

Impact VISUAL-1: The proposed retaining walls will not result in a substantial change to the existing visual and aesthetic environment along the project segment of U.S. 101. **[Less-than-Significant Impact]**

2.7.3.3 *Visual Effects from Key Vantage Points along U.S. 101*

Four key vantage points were selected to assess the visual effect of the project from locations adjacent to the highway. These locations, which are shown on Figure 9, represent those areas where the project will have its greatest visual impact due to new/wider roads, new structures, vegetation removal, or a combination thereof.

Key View #1

Figure 10 depicts the existing and future “with project” views from Key View #1, a vantage point along northbound U.S. 101, approximately 0.6 miles north of the existing U.S. 101/SR 25 interchange. This vantage point is adjacent to an existing single-family residence and a retail business (Garlic World). The existing hills are visible in the forefront, the Diablo Range is visible in the distance, and the existing SR 25 overcrossing is barely visible. This view would be seen by persons at the adjacent residence and business as well as by motorists on southbound U, S. 101.

Under Design Option A, a high level of adverse change will occur as views of the Diablo Range will be intruded upon by the new SR 25 overcrossing structure. This change will be permanent and cannot be mitigated to a less-than-significant level through architectural and/or landscape design solutions.

Under Design Option B, a low level of adverse visual change will occur as only the lower portion of the views of the Diablo Range will be intruded upon by the new SR 25 overcrossing structure.

Impact VISUAL-2: Under Design Option A, the visual impact of the project from a vantage point along U.S. 101, 0.6 miles north of the U.S. 101/SR 25 interchange, will be substantial. **[Significant Impact]**

Impact VISUAL-3: Under Design Option B, the visual impact of the project from a vantage point along U.S. 101, 0.6 miles north of the U.S. 101/SR 25 interchange, will not be substantial. **[Less-than-Significant Impact]**



LOCATIONS OF KEY VIEWPOINTS

FIGURE 9



Existing



Proposed - Design Option A



Proposed - Design Option B

KEY VIEW #1 - VIEW LOOKING SOUTH ALONG U.S. 101 FROM A POINT JUST NORTH OF CASTRO VALLEY ROAD (VICINITY OF GARLIC WORLD) FIGURE 10

Key View #2

Figure 11 depicts the existing and future “with project” views from Key View #2, a vantage point along Santa Teresa Boulevard near Gavilan College. The view looks to the southeast towards U.S. 101 at the location where the U.S. 101/SR 25 interchange would be located under Design Option A. The buildings visible in the background are commercial structures associated with the Rapazzini Winery. This view would be seen by motorists on southbound Santa Teresa Boulevard.

Under Design Option A, minor changes to the existing visual environment will occur. Santa Teresa Boulevard will be shifted to the east in the foreground and the new U.S. 101/SR 25 interchange will be visible in the background. The overall view will remain similar to the existing view.

Under Design Option B, minor changes to the existing visual environment will occur. In the foreground, Santa Teresa Boulevard will be improved in the same general alignment as the existing road. In the distance, Santa Teresa Boulevard will be extended, with a retaining wall visible in the lower portion of the hillside. At night, lights from vehicles driving along the extended Santa Teresa Boulevard will also be visible. The overall view will remain similar to the existing view.

Impact VISUAL-4: Under Design Option A, the visual impact of the project from a vantage point along Santa Teresa Boulevard near Gavilan College will not be substantial.
[Less-than-Significant Impact]

Impact VISUAL-5: Under Design Option B, the visual impact of the project from a vantage point along Santa Teresa Boulevard near Gavilan College will not be substantial.
[Less-than-Significant Impact]

Key View #3

Figure 12 depicts the existing and future “with project” views from Key View #3, a vantage point at the intersection of SR 25 and Bloomfield Avenue. The view looks to the west towards U.S. 101. A row of eucalyptus trees and cultivated crops are visible in the foreground and the Santa Cruz Mountains are visible in the distance. This view would be seen by motorists on westbound SR 25..

Under Design Option A, minor changes to the existing visual environment will occur. The removal of a number of eucalyptus trees will open up the view of the Santa Cruz Mountains, resulting in a positive visual impact.

Under Design Option B, minor changes to the existing visual environment will occur. The removal of a number of eucalyptus trees will open up the view of the Santa Cruz Mountains, resulting in a positive visual impact. The reconstructed U.S. 101/SR 25 interchange will be visible in the distance, as will a retaining wall adjacent to the interchange.



Existing



Proposed - Design Option A



Proposed - Design Option B



Existing



Proposed - Design Option A



Proposed - Design Option B

Impact VISUAL-6: Under Design Option A, the visual impact of the project from a vantage point at the intersection of SR 25 and Bloomfield Avenue will not be substantial.
[Less-than-Significant Impact]

Impact VISUAL-7: Under Design Option B, the visual impact of the project from a vantage point at the intersection of SR 25 and Bloomfield Avenue will not be substantial.
[Less-than-Significant Impact]

Key View #4

Figures 13 and 14 depict the existing and future “with project” views from Key View #4, a vantage point along a road that serves properties located on the west side of the existing U.S. 101/SR 25 interchange. Views 4a and 4b are taken from the same location, the difference between the two is that View 4b is shifted slightly to the right (i.e., south) of View 4a to show the full effect of the project under Design Option B. The buildings in the foreground are part of a private event center (Adagio Event Center). U.S. 101 is visible through the trees. The red-painted buildings in View 4b are a retail business (Garlic Shoppe). The Diablo Range is clearly visible in the background. This view would be seen by users of the existing road that serves properties located on the west side of the existing U.S. 101/SR 25 interchange.

Under Design Option A, minor changes to the existing visual environment will occur. Views of cultivated fields to the east will be partially replaced with contrasting embankment slopes within the U.S. 101/SR 25 interchange. Additional pavement associated with the widening of U.S. 101 will also be visible.

Under Design Option B, the change in the visual environment will be substantial. With the project, moderate changes will be made to the existing visual resources resulting in a high viewer response from the perspective of vantage points to the north and east of the project. High viewer response impacts will occur from vantage points to the north and east with views of vehicles and lights on SR 25 within the slopes of the Carlyle Hills. High viewer response changes will also occur with a southbound off-ramp shifting approximately 278 feet to the west of the existing off-ramp in the view assessed. A retaining wall will be visible on the uphill side of the west extension of SR 25, which will result in moderate viewer response impacts. In addition to high and moderate viewer response changes, minor visual impacts will occur as views of cultivated fields to the east are replaced with views of contrasting bare earth embankment slopes within the interchange.

Impact VISUAL-8: Under Design Option A, the visual impact of the project from a vantage point to the west of the existing U.S. 101/SR 25 interchange will not be substantial.
[Less-than-Significant Impact]



Existing



Proposed - Design Option A

KEY VIEW #4A - VIEW LOOKING EAST FROM A ROAD THAT SERVES PROPERTIES
LOCATED ON THE WEST SIDE OF EXISTING U.S. 101 / S.R. 25 INTERCHANGE
(PHOTO TAKEN FROM SAME LOCATION AS KEY VIEW #4B)



Existing



Proposed - Design Option B

KEY VIEW #4B - VIEW LOOKING SOUTHEAST FROM A ROAD THAT SERVES PROPERTIES LOCATED ON THE WEST SIDE OF EXISTING U.S. 101 / S.R. 25 INTERCHANGE (PHOTO TAKEN FROM SAME LOCATION AS KEY VIEW #4A)

Impact VISUAL-9: Under Design Option B, the visual impact of the project from a vantage point to the west of the existing U.S. 101/SR 25 interchange will be substantial. [**Less-than-Significant with Mitigation Listed in Section 2.7.5**]

2.7.3.4 *Visual Effects from Removal of Vegetation*

Construction of the project will require the removal of existing vegetation at various locations along the 7.6-mile project segment of U.S. 101. Based on preliminary design, it is estimated that the footprint of the project will affect approximately 432 acres of unpaved earth area, of which roughly 326 acres would be in Santa Clara County and roughly 106 acres would be in San Benito County. The majority of this acreage is covered with grasses. A small percentage includes trees and shrubs. Areas cultivated with crops are also part of the acreage to be impacted. Trees to be removed are part of a larger grove or hedgerow and the trees that would remain will continue to provide a visual amenity.

As discussed subsequently in Section 2.17, *Natural Communities*, the project will remove a total of approximately 15 acres of native riparian vegetation at the many creeks and rivers that are crossed by U.S. 101 within the 7.6-mile project limits. While the biological impact of the removal of this vegetation will be significant, and mitigation is being provided, the visual impact from this loss of vegetation will not be significant as the impacts are limited at each waterway crossing. With the project in place, the riparian vegetation of each creek/river corridor will remain visible to motorists traveling on U.S. 101.

The loss of vegetation due to the project will not result in a significant visual impact. Nonetheless, it is Caltrans' policy to replace highway plantings that are removed by a project with new planting. Replacement planting will be provided where warranted under separate contract and will include 3-years of plant establishment.

Impact-VISUAL-10: The removal of vegetation by the project will not result in a significant visual impact. [**Less-than-Significant Impact**]

2.7.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. Existing landscaping and vegetation would not be removed and no construction would occur. Therefore, there would be no change to the visual/aesthetic environment in the project area.

2.7.5 Avoidance, Minimization, and/or Mitigation Measures

The following measures will be implemented as mitigation for the identified significant visual impacts (i.e., Visual Impacts #2 and #9):

MM-VISUAL-2.1: The visual effect of the new SR 25 overcrossing will be lessened through the incorporation of architectural design features (i.e., use of colors and textures that reduce visual impacts) into the structure. Highway planting will also be added to the interchange to lessen this impact (Design Option A only). Planting and three years of plant establishment will be implemented under separate contract within two years following completion of roadwork.

This mitigation will somewhat lessen the visual impact of the project at this location, but there is no feasible mitigation that can reduce the blocking of the scenic vista by the overcrossing to a less-than-significant level.

MM-VISUAL-9.1: Small trees will be planted along the north side of Santa Teresa Boulevard in order to screen views of this roadway from the adjacent event center. The trees will function as large screening shrubs. Species that grow into tall trees will not be planted as they would block views of the Diablo Range in the distance (Design Option B only). Planting and three years of plant establishment will be implemented under separate contract within two years following completion of roadwork.

This mitigation will reduce the visual impact at this location to a less-than-significant level.

Conclusion: The project will result in a significant adverse change to the visual environment at one location each under Design Options A and B. For Design Option A, mitigation MM-VISUAL-2.1 will partially reduce this impact, but not to a less-than-significant level. For Design Option B, mitigation MM-VISUAL-9.1 will reduce this impact to a less-than-significant level. [Significant Unavoidable Impact under Design Option A Only]

2.8 CULTURAL RESOURCES

2.8.1 Regulatory Setting

“Cultural resources” as used in this document refers to all historical and archaeological resources, regardless of significance.

Historical resources are considered under CEQA, as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024

requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory, evaluate for significance, and assess effects on state-owned structures in its rights-of-way early in the planning process, including providing an opportunity for comment to the SHPO.

CEQA Guidelines Section 15064.5 states that a “historical resource” shall not only include resources listed on, or eligible for, the California Register of Historic Resources, but also those listed on a local register of historic resources. This Guidelines section also notes that a resource may be deemed historic by a Lead Agency even if it is not listed on a local register of historic resources, provided that such determination is supported by substantial evidence in light of the whole record.

2.8.2 Affected Environment

The information in this section is based primarily on a technical Archaeological Survey Report (September 2010) and Historical Resources Evaluation Report (March 2010) that were prepared for the project. With the exception of the Archaeological Survey Report, these studies are available for review at the locations listed inside the front cover of this document. The Archaeological Survey Report contains information regarding the locations of archaeological resources, which by law is confidential and not available to the public.

2.8.2.1 *Methodology*

The project area limits (PAL) were studied to determine whether cultural resources are present and, if so, to assess the impacts of the project on those resources. The PAL consists of the area within the footprint of the project, as well as those areas directly adjacent to the project where indirect impacts to historic resources could occur. Several methodologies were employed for the purpose of determining the presence of cultural resources:

- Existing databases, records, and historic resources inventories were consulted. This included a prehistoric and historic site record and literature search at the California Historical Resources Information System, Northwest Information Center at Sonoma State University.
- Consultation with the Native American Heritage Commission and local Native American communities and individuals was undertaken.
- For archaeological resources, areas that had not been recently studied were surveyed in the field by archaeologists. In combination with areas that had been previously studied, this survey resulted in all but approximately 3% (32 acres) of the PAL being examined.

- Geoarchaeological backhoe trenching was undertaken at eight locations at which previous studies had indicated there was a high potential for buried archaeological resources. At these locations, 71 individual trenches were excavated.
- All structures within the PAL that were constructed prior to 1964 (i.e., those 45 years of age or older) were evaluated to determine their eligibility as a historic resource.

2.8.2.2 *Archaeological Resources*

There are 12 locations within the PAL where archaeological resources have been found. Most of these resources include both prehistoric and historic-era components. The most important resources have prehistoric components with human remains, features, and/or intact midden deposits, and historic-era components dating to the Mission or Rancho periods. These 12 resources are summarized in Table 22.

Of the resources listed in Table 22, three have been determined eligible (with SHPO concurrence on January 28, 1994) for the *National Register of Historic Places (NRHP)* and the *California Register of Historic Resources (CRHR)* and, therefore are historic resources for purposes of CEQA. These three eligible resources are SCL-308/H, SCL-577/H, and SCL-698.

Of the resources listed in Table 22, the following three have been determined ineligible (with SHPO concurrence on January 28, 1994) for the NRHP and CRHR: SCL-92/H, SCL-578/H, and SCL-699/H. Access to the properties where SCL-92H and SCL-578H are located was not permitted during the preparation of this EIR. At such time as access is permitted, the reevaluation of the historic components of these sites, which were previously determined as ineligible, may be required.

2.8.2.3 *Historical Resources*

There are three historical resources located within the PAL: the Bloomfield Ranch, San Felipe Church, and the Mayock Residence. These resources are described below. All other structures (including bridges) and buildings within the PAL have been determined to not be historical resources.

Bloomfield Ranch

The main portion of the Bloomfield Ranch is located on a large parcel of land (APN 841-34-002) bounded by U.S. 101 on the west, SR 25 on the north, the UPRR tracks on the east, and the grant line boundary between the Las Animas and Juristac ranchos to the south. The ranch was determined to be eligible for the NRHP and CRHR as a historic district, with SHPO concurrence in March 2007. Additionally, the Miller Reservoir, located on the west side of U.S. 101 (on APN 810-35-008) on a hill that overlooks the Bloomfield Ranch, and a 30-foot-wide area surrounding the reservoir, complete the boundary of this discontinuous historic district.

TABLE 22			
ARCHAEOLOGICAL SITES WITHIN THE PROJECT AREA LIMITS			
Resource Identifier	Feature Type	Study Findings	California/National Register Eligibility
SCL-92/H Prehistoric	Sparse scatter of flaked & ground stone	--	Ineligible; SHPO concurrence
Historic	Sargent Station	Buried trash feature found in trenching 2-3 feet below surface; 1920s-1940	
SCL-308/H Prehistoric	Occupation debris with housefloor feature	As described	Eligible; SHPO concurrence
Historic	Rancho period residence/Miller Cemetery	Artifacts from 1993 testing indicate a domestic residence ca. 1810-1830	
SCL-577/H Prehistoric	Intact occupation area with burials	As described	Eligible; SHPO concurrence
Historic	Vicinity of 1803 Mission Ranch (La Brea); later 1832 rancho adobe; Carlisle House 1850s	Artifacts from 1993 testing indicate a domestic residence ca. 1810-1900	
SCL-578/H Prehistoric	Highly disturbed midden	As described	Ineligible; SHPO concurrence
Historic	Vicinity of F. German rancho (1835)	Documentary research conducted; access denied	
SCL-698	Multi-component midden site with burials	As described	Eligible; SHPO concurrence
SCL-699/H Prehistoric	Very sparse lithic scatter	--	Ineligible; SHPO concurrence
Historic	Trash dump	Modern rubbish	Ineligible; SHPO concurrence

TABLE 22 [continued]

Resource Identifier	Feature Type	Study Findings	California/National Register Eligibility
SBN-149/H	Sanchez Adobe	Rancho Period refuse deposit identified in 1985	
P-43-002462	Carnadero School	Location in study area	
P-43-002463	Buried fire-cracked rock	Exposed in backhoe trench 1-3 ft below surface; identified as background scatter	
Historic	Ranch trash deposit	Exposed in backhoe trench 1-3 ft below surface	
P-35-000528	Buried deposit consisting of flakes, bone, shell and a mortar	Found during backhoe trenching 10-12.5 ft below surface	
P-35-000535	Buried deposit consisting of fire-affected rock, charcoal, and burned soil	Found during backhoe trenching 10.5-11.8 ft below surface	
P-43-002464	Buried deposit consisting of fire-affected rock and bone	Found during backhoe trenching 1-5 ft below surface	
SHPO = State Historic Preservation Officer			
Source: Archaeological Survey Report for the U.S. 101 Improvement Project, 2010.			

As the headquarters of the Miller & Lux Company cattle ranching empire, which extended over several western states, the Bloomfield Ranch is eligible for the NRHP under Criterion A at the state level of significance.¹⁹ It is also eligible for the NRHP under Criterion B at the state level of significance for its association with Henry Miller. Furthermore, the contributing buildings and structures at the Bloomfield Ranch are eligible for the NRHP under Criterion C at the local level of significance because they embody distinctive characteristics of their type. Contributing features include Miller's Original Office, Miller Station, Miller's Second Office, the Stone Masonry Culvert, and Miller Reservoir. Its period of significance is between 1859 and 1916.

¹⁹Criteria have been established to determine eligibility for the NRHP. Criterion A is for resources that are associated with events that have made significant contribution to the broad patterns of our history. Criterion B is for resources that are associated with the lives of persons significant in our past. Criterion C is for resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. Criterion D is for resources that have yielded, or may be likely to yield, information important in prehistory or history.

Mayock House

The Mayock House is located on the Gavilan College campus approximately 1,000 feet west of Santa Teresa Boulevard. The house appears to be eligible for listing in the CRHR at the local level of significance under Criterion 2, for its association with the Mayocks, an early and prominent Gilroy family, and Criterion 3, as a distinctive example of nineteenth century Folk Victorian residential architecture. Its period of significance spans 48 years, from 1886, when it was constructed, to 1934, when the Mayock family sold the property.

San Felipe Church

San Felipe Church is located on the Gavilan College campus approximately 1,300 feet west of Santa Teresa Boulevard. San Felipe Church appears to be eligible for listing in the CRHR at the local level of significance under Criterion 3 as an example of Queen Anne architecture with Gothic Revival details.

2.8.3 Environmental Consequences of the Build Alternative

2.8.3.1 *Impacts to Archaeological Resources*

As described in Section 2.8.2, there are 12 known archaeological sites within the project's PAL. Three of these sites have been determined to be eligible for the NRHP and CRHR and, therefore, are resources for purposes of CEQA. Three of the sites have been determined to be ineligible for the NRHP and CRHR.

The extent of impacts on these archaeological resources has not yet been fully determined. Project refinement during the subsequent design phase may minimize the extent of construction related activities, but it is reasonable to conclude that some of these archaeological resources will be subject to impacts that constitute substantial adverse change given their location in the PAL and the nature of the proposed improvements. These construction related impacts will probably derive from (but are not limited to) subsurface excavation such as utility work, foundation/ bridge pier trenches and drilling or surface related construction activities, such as staging to adversely impact buried archaeological resources and those exposed at ground surface.

Impact CUL-1: Construction-related activities will adversely impact one or more of the archaeological resources in the PAL. [**Less-than-Significant with Mitigation Listed in Section 2.8.5**]

2.8.3.2 *Impacts to Historical Resources*

Impacts to the Bloomfield Ranch

For the following reasons, the project will not result in a substantial effect on the historic significance or historic integrity of the Bloomfield Ranch:

- Under both design options, implementation of the proposed project will require construction of a new driveway or access road for the Bloomfield Ranch property. This construction activity will replace a short segment of an existing dirt farm access road with a paved road that will serve as primary access to the property. The driveway will extend approximately 600 feet in length beginning near the property's northeast corner, which will require grading of land immediately adjacent to SR 25. The location of this frontage road is more than one-quarter mile from both the main complex and Miller's Station. The buffer zone at this location extends approximately 25 feet from the proposed driveway. This impact will not demolish, damage, relocate or alter any of the buildings and structures that contribute to the property's significance, nor will it materially impact the existing setting of the ranch.
- Under both design options, the proposed project will require construction of a frontage road from Castro Valley Road to Old Monterey Road. Under neither option would the frontage road be located within the boundaries of the Bloomfield Ranch historic district. No visual impacts to the historic district will result from this frontage road.
- No work will occur within the boundaries of the Miller Reservoir, including the 30-foot buffer area that surrounds the reservoir. There will also be no visual impacts to this resource.
- Under Design Option B, the U.S. 101/SR 25 interchange would be reconstructed at its existing location, which is adjacent to the Bloomfield Ranch. This reconstruction will somewhat alter the visual environment, but the change will not be substantial since it will not affect the physical characteristics that convey historical significance of the Bloomfield Ranch and that justify its eligibility for listing in the NRHP and CRHR.

Impact CUL-2: The project will not have a substantial effect on the Bloomfield Ranch. [**Less-than-Significant Impact**]

Impacts to San Felipe Church

This resource is located on the Gavilan College campus, approximately 1,300 feet west of Santa Teresa Boulevard. Project-related improvements to Santa Teresa Boulevard will not directly or indirectly affect the San Felipe Church. Santa Teresa Boulevard is not visible from the church.

Impact CUL-3: The project will have no adverse effect on the San Felipe Church. [**No Impact**]

Impacts to the Mayock House

This resource is located on the Gavilan College campus, approximately 1,000 feet west of Santa Teresa Boulevard. Project-related improvements to Santa Teresa Boulevard will not directly or indirectly affect the Mayock House. Santa Teresa Boulevard is not visible from this building.

Impact CUL-4: The project will have no adverse effect on the Mayock House. **[No Impact]**

2.8.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. Therefore, there would be no effect on cultural resources in the project area.

2.8.5 Avoidance, Minimization, and/or Mitigation Measures

The following measures are included as part of the project as mitigation for the identified significant impacts to archaeological resources:

MM-CUL-1.1: To resolve construction-related activities that will adversely impact one or more of the historical resources in the PAL, an Archaeological Treatment Plan (ATP) will be developed that details procedures and mechanisms that will be followed by Caltrans and VTA to ensure both agencies satisfy their regulatory requirements under CEQA. The ATP will outline the process for completing the identification and evaluation phase of the regulatory process on parcels not yet acquired by the project where access was denied. When data recovery through excavation is the only feasible mitigation, provisions in the ATP for adequate recovery of scientifically consequential information from and about the historical resource, shall be implemented prior to any project-related construction or other activities being undertaken.

MM-CUL-1.2: If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

PHYSICAL ENVIRONMENT

2.9 HYDROLOGY AND FLOODPLAIN

The information in this section is based primarily on a technical Location Hydraulic Study (September 2010) that was prepared for the project. A copy of this study is available for review at the locations listed inside the front cover of this document.

2.9.1 Affected Environment

The project alignment is located within the Pajaro River watershed²⁰ and is surrounded by open space, ranchland, agricultural uses, commercial uses, and native and non-native vegetation. Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), most of the project segment of U.S. 101 is within or adjacent to 100-year floodplains.²¹ Flooding in the area occurs in the vicinity of creeks and rivers.

The project segment of U.S. 101 crosses the following waterways (from north to south): Carnadero Creek, Gavilan Creek, Tick Creek, Tar Creek, Pajaro River, San Benito River, and San Juan Creek.

Most of the project segment of U.S. 101 lies within or adjacent to floodplains. The floodplains exist due to inadequate capacity within a number of the surrounding waterways, which results in floodwaters overtopping banks/levees, and the flooding of surrounding areas. Historical flooding has occurred in the project area in 1938, 1955, 1958, 1962, 1982, 1983, 1986, and 1997. Damage to buildings and agricultural fields has occurred, as well as temporary road closures including U.S. 101.

From north to south, the project is in the existing 100-year floodplains both west and east of U.S. 101 in the vicinity of the Carnadero Creek and Gavilan Creek crossings. In the vicinity of the Tick Creek and Tar Creek crossings, the existing 100-year floodplain is only on the east side of U.S. 101. The project is in the existing 100-year floodplain (both west and east of U.S. 101) for the Pajaro River, San Benito River, and San Juan Creek.

Floodplain maps of the project area in Santa Clara County and San Benito County are shown in Figures 15 and 16, respectively. The flooding at each waterway crossed by U.S. 101 within the project limits is described in more detail below.

²⁰ The Pajaro River watershed includes watershed areas of all the rivers/creeks that are crossed by the project segment of U.S. 101, as well as the watershed area downstream of the project location.

²¹ The **100-Year Floodplain** is the area subject to flooding by the 100-year flood or the area subject to inundation by the 1% annual chance flood. The 100-year flood is the flood having a 1% chance of being equaled or exceeded in any given year..

Carnadero Creek and Gavilan Creek: Carnadero Creek at and upstream of the U.S. 101 crossing is undersized. During a 100-year flood event, floodwaters overtop the highway. Most of the floodwaters from Carnadero Creek travel south in the vicinity of U.S. 101 on both the east and west sides of the freeway and enters the Gavilan Creek watershed. The remaining Carnadero Creek floodwaters travel northeast of the creek and overtop U.S. 101, north of the Carnadero Creek bridge. Gavilan Creek crosses under U.S. 101 through an existing 8-foot x 6-foot reinforced concrete box (RCB) culvert. This culvert has insufficient capacity to convey water from its watershed as well as the flood flows from Carnadero Creek. As a result, the flow overtops U.S. 101 north of the Gavilan Creek crossing. Downstream of the U.S. 101 overflow, the flood flow also overtops SR 25 at its low point.

Tick Creek: The existing double 8-foot x 4-foot reinforced concrete box (RCB) culvert for Tick Creek under U.S. 101 has insufficient capacity to discharge flows during the 100-year flood, causing a shallow spill flow over U.S. 101. West of the frontage road, Tick Creek has insufficient capacity to convey the 100-year flood event; therefore, floodwaters overtop the frontage road at its low point.

Tar Creek: The U.S. 101 bridge over Tar Creek is approximately 30 feet above the creek flowline elevation; therefore, highway overtopping at this location is unlikely to occur.

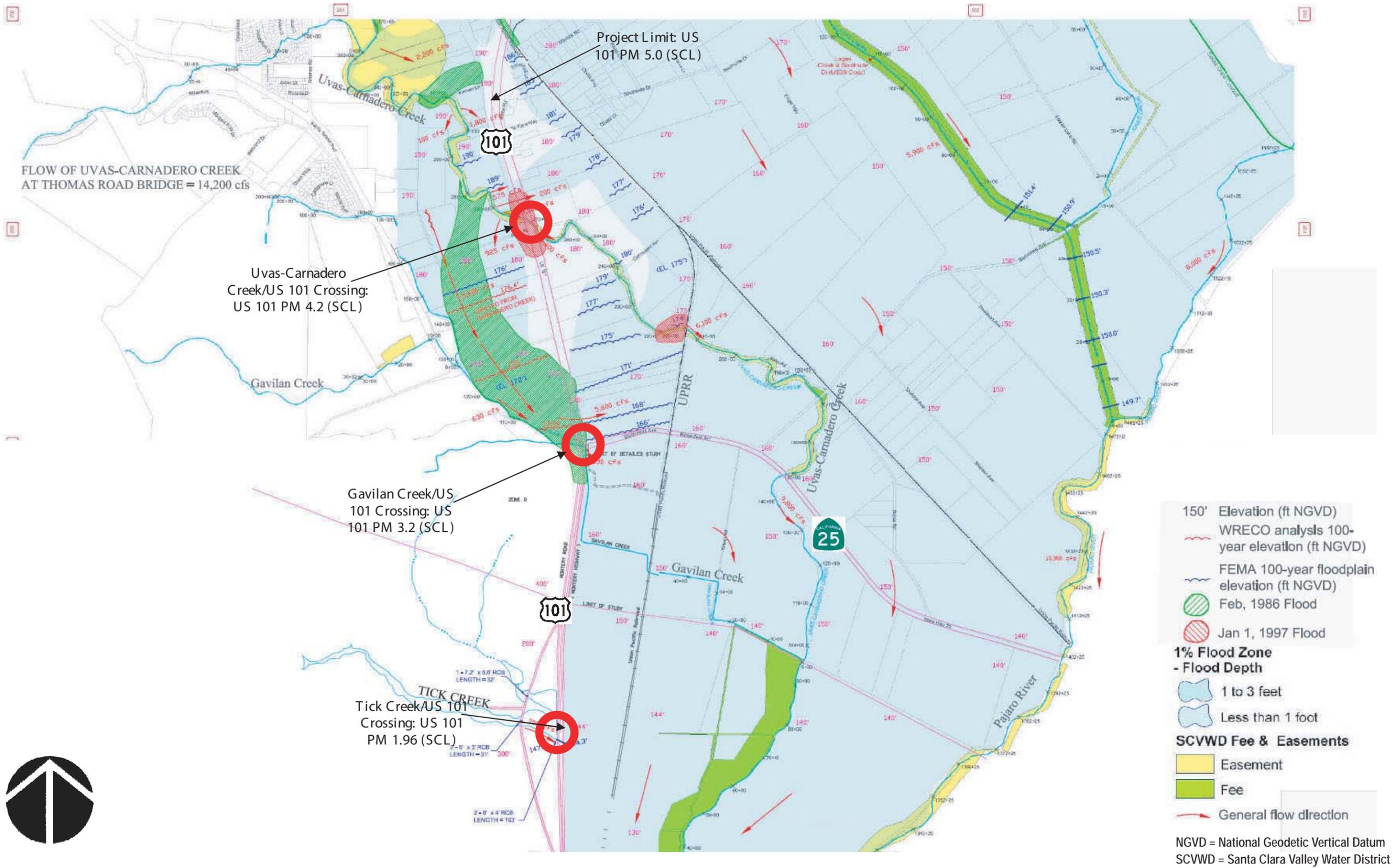
Pajaro River and San Benito River: The U.S. 101 bridges over Pajaro River and San Benito River would not be overtopped during the 100-year flood event by floodwaters, but the bridge would be under pressure from flood flows.

San Juan Creek: The U.S. 101 bridge over San Juan Creek would not be overtopped by floodwaters during the 100-year flood event. However, the existing triple 10-foot x 7-foot RCB culvert under the U.S. 101 northbound on-ramp and upstream of the U.S. 101 bridge cannot pass the 100-year peak flow. The water that does not pass through this triple RCB culvert flows to the San Benito River to the north.

The double 10-foot x 8-foot RCB culvert under SR 129, immediately downstream of the triple RCB culvert is also undersized. As a result, U.S. 101 overtops with approximately 0.6 feet of water during a 100-year flood event. This excess water flows northwest through the SR 129 bridge opening towards U.S. 101, overtops U.S. 101, and then rejoins San Juan Creek main channel, just east of U.S. 101.

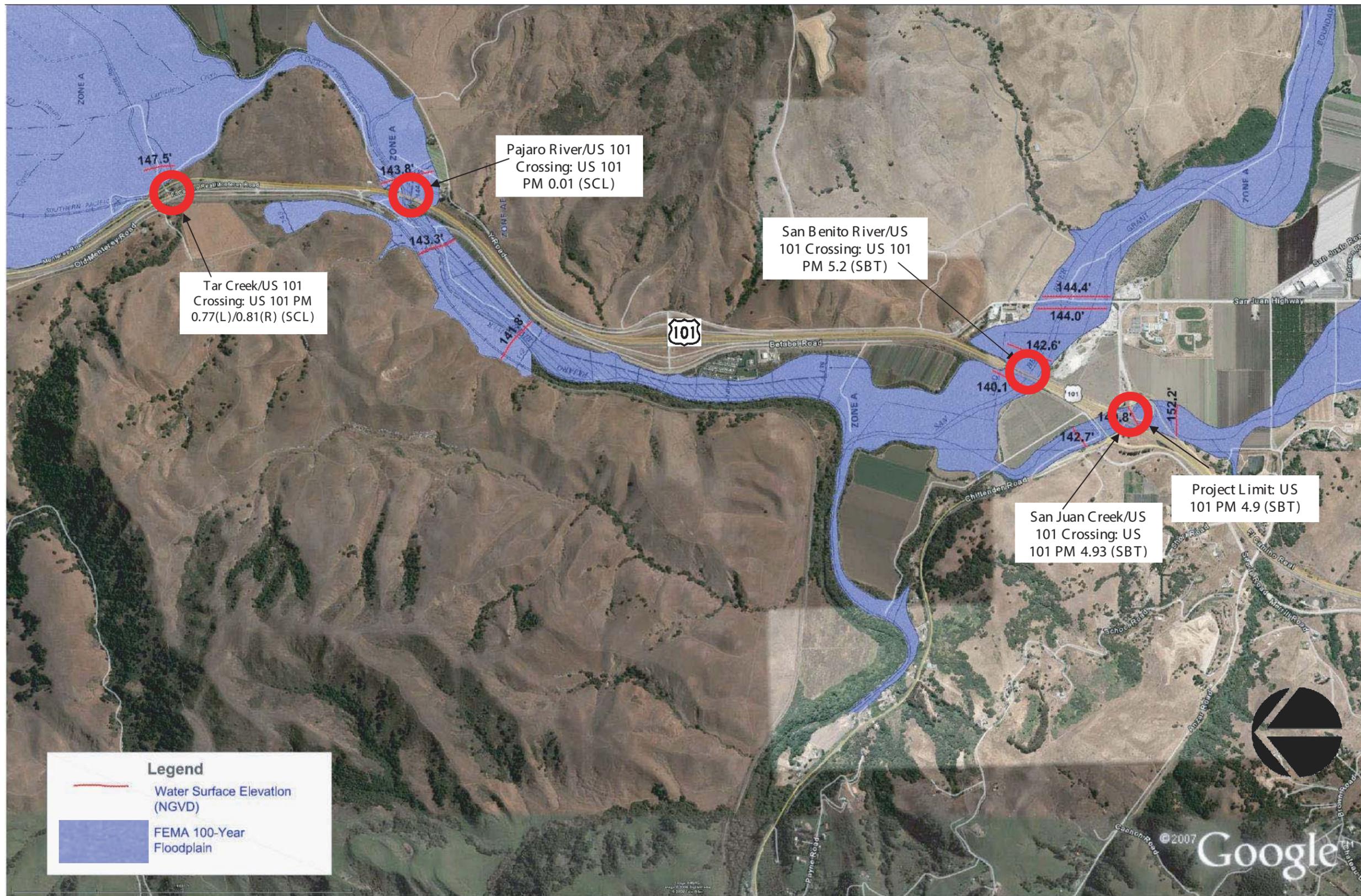
2.9.2 Environmental Consequences of the Build Alternative

The following text describes the impacts of the proposed project within each of the floodplains crossed by the project segment of U.S. 101. These impacts include 1) the placement of fill in floodplains that reduces floodplain storage capacity, 2) the blockage of floodwaters due to the construction of embankments and/or structures, and 3) increases in the peak flow rate due to an increase in impervious surfaces. Impacts were quantified using the hydraulic modeling methodologies that are described in the Location Hydraulic Study.



EXISTING FLOODPLAIN MAP OF PROJECT VICINITY IN SANTA CLARA COUNTY

FIGURE 15



EXISTING FLOODPLAIN MAP OF PROJECT VICINITY IN SAN BENITO COUNTY

FIGURE 16

2.9.2.1 *Impacts to the Carnadero Creek Floodplain*

Under Design Option A, the proposed Santa Teresa Boulevard extension will be elevated on a new embankment. This embankment will create a loss of floodplain storage capacity west of U.S. 101 as floodwaters from Carnadero Creek flowing south will no longer be able to pass through to the Gavilan Creek watershed.

As occurs under existing conditions, approximately 200 cubic-feet-per-second of floodwaters will overtop U.S. 101 at a location roughly 600 feet north of the Carnadero Creek bridge.

The increase in impervious surfaces due to the proposed highway improvements (e.g., ramps, frontage roads, additional lanes, etc.) will reduce the floodplain storage capacity. This could lead to additional flooding in the project area and/or increased depth of flooding.

Under both design options, the proposed SR 25 alignment will be elevated on an embankment to pass over the UPRR tracks and continue to the U.S. 101/SR 25 interchange. This embankment would obstruct the flood flows from Carnadero Creek and reduce the floodplain storage capacity east of U.S. 101 and disrupt the flood flow pattern.

Impact HYDRO-1: Under both Design Option A and Design Option B, the project will result in substantial flooding impacts within the 100-year floodplain of Carnadero Creek. **[Less-than-Significant with Mitigation Listed in Section 2.9.4]**

2.9.2.2 *Impacts to the Gavilan Creek Floodplain*

Under Design Option A, the increase in impervious surfaces due to new ramps, frontage roads, and additional freeway lanes in the Carnadero Creek watershed will reduce the floodplain storage capacity and disrupt the flood flow pattern in the vicinity of Gavilan Creek and U.S. 101. This impact will not occur under Design Option B.

Impact HYDRO-2: Under Design Option A, the project will result in substantial flooding impacts within the 100-year floodplain of Gavilan Creek. **[Less-than-Significant with Mitigation Listed in Section 2.9.4]**

Impact HYDRO-3: Under Design Option B, the project will not result in substantial flooding impacts within the 100-year floodplain of Gavilan Creek. **[Less-than-Significant Impact]**

2.9.2.3 *Impacts to the Tick Creek Floodplain*

The project will widen the U.S. 101 and adjacent west side frontage road crossings of Tick Creek. This widening will require extensions of the existing culverts. The project will also construct a joint access

driveway adjacent to the east side of U.S. 101, which will include a crossing of Tick Creek on double 8-foot x 4-foot RCB culverts. Although the project will slightly raise the elevation of the pavement on U.S. 101, the project will not cause the base floodplain elevation to increase.

Because the existing culverts are undersized, floodwaters from Tick Creek would continue to overtop U.S. 101 during a 100-year flood with the project in place, as they do under existing conditions. To prevent the freeway from flooding in the future, the project includes the installation of two reinforced concrete pipes (RCPs), each 3 feet in diameter, under U.S. 101. The RCPs will be placed adjacent to the existing double 8-foot x 4-foot RCB culvert.

Impact HYDRO-4: The project will not raise the water surface elevation of the Tick Creek floodplain during a 100-year flood. **[No Impact]**

2.9.2.4 *Impacts to the Tar Creek Floodplain*

The project will construct a new access road that will cross Tar Creek on a single-span bridge. The bridge will be above the elevation of the 100-year flood flow. Hydraulic analysis determined that the effect of the bridge would be a rise in the elevation of the base floodplain by less than 0.1 feet for a distance of approximately 200 feet upstream of the bridge, which would be insignificant.

Impact HYDRO-5: The project will not result in substantial flooding impacts within the 100-year floodplain of Tar Creek. **[Less-than-Significant Impact]**

2.9.2.5 *Impacts to the Pajaro River Floodplain*

The project will replace the existing U.S. 101 bridge over the Pajaro River. Betabel Road will also be extended and will include a new 3-span bridge over the Pajaro River. The new bridges will fill approximately 20.5 acre-feet of the floodplain of the river.²² For the Pajaro River, the proposed condition will raise the floodplain by 0.1 feet between the Betabel Road bridge and the U.S. 101 bridge. The water surface elevation increase upstream of the U.S. 101 bridge will be less than 0.1 feet. The proposed bridge construction above Pajaro River will have an insignificant impact to the base flood elevation.

Impact HYDRO-6: The project will not result in substantial flooding impacts within the 100-year floodplain of the Pajaro River. **[Less-than-Significant Impact]**

²² One acre-foot is defined as the quantity of water that would cover one acre to a depth of one foot. One acre-foot of water equals approximately 325,851 gallons.

2.9.2.6 *Impacts to the San Benito River Floodplain*

The project will widen the existing U.S. 101 bridges over the San Benito River. It will also construct a new 3-span bicycle bridge over the San Benito River upstream of U.S. 101. The bicycle bridge will obstruct the 100-year flow within the floodplain, resulting in an increase the base flood elevation by 0.8 feet, which in turn will cause a negligible widening of the floodplain upstream of the bridge. Fill for the embankment for the bicycle bridge will decrease the water storage capacity of the floodplain by approximately 5.6 acre-feet, which would represent an inconsequential loss in the overall capacity of the floodplain.

The bicycle bridge will include ten 12-foot x 6-foot RCB culverts at its northerly abutment to provide additional discharge capacity for flood flows. These culverts will concentrate flood flows and, therefore, such flows will be dissipated by a basin and conveyed back to the San Benito River. The basin will be constructed along the north side of the river between the bicycle bridge and U.S. 101, on a portion of a parcel that is currently bare ground. The location of the basin is depicted on Figure 3.

Impact HYDRO-7: The project will not result in substantial flooding impacts within the 100-year floodplain of the San Benito River. [**Less-than-Significant Impact**]

2.9.2.7 *Impacts to the San Juan Creek Floodplain*

The project will widen the existing U.S. 101 bridge over San Juan Creek in order to accommodate the additional lanes of traffic. Based on the hydraulic analysis, the widened bridge's effect on the water surface elevation of the floodplain will be minimal (i.e., no more than 0.1 feet).

Impact HYDRO-8: The project will not result in substantial flooding impacts within the 100-year floodplain of San Juan Creek. [**Less-than-Significant Impact**]

2.9.3 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. The existing hydrologic and flooding conditions would remain unchanged. Portions of U.S. 101 within the project limits would remain subject to flooding, as described under "Affected Environment" in Section 2.9.1.

2.9.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures are included in the project. Implementation of these measures will reduce floodplain-related impacts to a less-than-significant level.

2.9.4.1 Mitigation Measures for Impacts to Carnadero Creek Floodplain

- MM-HYDRO-1.1:** The project will construct a 100-foot wide trapezoidal flood control channel along the north side of the proposed Santa Teresa Boulevard extension. It will also install three new double 14-foot x 8-foot RCB culverts under U.S. 101. The flood control channel will divert water on the west side of U.S. 101 to the three double RCB culverts. (Design Option A only)
- MM-HYDRO-1.2:** The project will install nine new 12-foot x 6-foot RCB culverts under U.S. 101 to divert flows from Gavilan Creek to the east side of U.S. 101. (Design Option B only)
- MM-HYDRO-1.3:** The project will construct a detention basin adjacent to the reconstructed U.S. 101/SR 25 interchange, on the east side of U.S. 101 (see Figures 3 and 4). The detention basin will have a storage capacity of 120 acre-feet and a footprint of roughly 40 acres, assuming an average depth of three feet. The basin will mitigate for the loss of floodplain storage that will occur with construction of the project. The basin will be designed to drain completely following high-runoff events, without depressional areas within its bed that could result in long-term ponding that would serve as an attractant to special-status reptiles and amphibians. (Both design options)
- MM-HYDRO-1.4:** The project will install three double 14-foot x 8-foot RCB culverts under the southbound U.S. 101 off-ramp to SR 25 to convey flood flows under the ramp. (Design Option A only)
- MM-HYDRO-1.5:** The project will construct a bridge (approximately 39-feet x 176-feet) on the southbound U.S. 101 off-ramp to SR 25 to convey flood flows under the ramp. (Design Option B only)
- MM-HYDRO-1.6:** The project will construct a bridge on SR 25 just east of U.S. 101 to convey flood flows under SR 25. (Both design options)
- MM-HYDRO-1.7:** The project will install five RCPs, each with a diameter of 30 inches, under the freeway to convey floodwaters downstream to mitigate the overtopping of U.S. 101 north of the Carnadero Creek crossing. (Both design options)

Hydraulic modeling with the above-described measures in place determined that these measures will reduce the impacts of the project on the Carnadero Creek floodplain to a less-than-significant level. Specific findings are as follows:

- The 100-year flood flow will not overtop U.S. 101.

- The increase in the water surface level of the 100-year flood on the west side of U.S. 101 will be less than 0.8 feet under Design Option A.
- There will be no increase in the water surface level of the 100-year flood on the west side of U.S. 101 under Design Option B.

2.9.4.2 *Mitigation Measures for Impacts to Gavilan Creek Floodplain*

MM-HYDRO-2.1: The project will install a 6-foot x 4-foot RCB culvert and three RCPs (each with a 4-foot diameter) under the west side frontage road. (Design Option A only)

These culverts will allow floodwaters to pass under the frontage road, thereby maintaining the existing flood flow pattern.

2.10 **WATER QUALITY AND STORMWATER RUNOFF**

2.10.1 **Regulatory Setting**

2.10.1.1 *Federal Requirements: Clean Water Act*

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S. to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below.)
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.”

USACE issues two types of 404 permits: Standard and General permits. There are two types of General permits, Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in Section 2.18, *Wetlands and Other Waters*.

2.10.1.2 State Requirements: Porter-Cologne Water Quality Control Act (California Water Code)

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a “Report of Waste Discharge” for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just Waters of the U.S., like groundwater and surface waters not considered Waters of the U.S. Additionally, it prohibits discharges of “waste” as defined and this definition is broader than the CWA definition of “pollutant”. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a

project area are contained in the applicable RWQCB Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

2.10.1.3 State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

2.10.1.4 NPDES Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of stormwater dischargers, including Municipal Separate Storm Sewer Systems (MS4s). The U.S. EPA defines an MS4 as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over stormwater, that are designed or used for collecting or conveying storm water. The SWRCB has identified Caltrans as an owner/operator of an MS4 by the SWRCB. This permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit, under revision at the time of this update, contains three basic requirements:

- Caltrans must comply with the requirements of the Construction General Permit (see below);
- Caltrans must implement a year-round program in all parts of the State to effectively control stormwater and non-stormwater discharges; and
- Caltrans' stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs) and other measures.

To comply with the permit, Caltrans developed the Statewide Stormwater Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing stormwater management procedures and practices as well as training, public education

and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed Project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address stormwater runoff.

Part of and appended to the SWMP is the Stormwater Data Report (SWDR) and its associated checklists. The SWDR documents the relevant stormwater design decisions made regarding project compliance with the MS4 NPDES permit. The preliminary information in the SWDR prepared during the Project Initiation Document (PID) phase will be reviewed, updated, confirmed, and if required, revised in the SWDR prepared for the later phases of the project. The information contained in the SWDR may be used to make more informed decisions regarding the selection of BMPs and/or recommended avoidance, minimization, or mitigation measures to address water quality impacts.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates stormwater discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop stormwater pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Stormwater Pollution Prevention Plan (SWPPP). In accordance with Caltrans' Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with a DSA less than one acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act (CWA), any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 Certification, which certifies that the project

will be in compliance with State water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the U.S. Army Corps of Engineers (USACE). The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board (RWQCB), dependent on the project location, and are required before USACE issues a 404 permit.

In some cases the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefitting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

2.10.2 Affected Environment

The information in this section is based primarily on a technical Stormwater Data Report (August 2010) that was prepared for the project. This study is available for review at the locations listed inside the front cover of this document.

Some of the stormwater runoff from the project area percolates into the ground, but much of it flows into local waterways. As noted previously, the project segment of U.S. 101 crosses Carnadero Creek, Gavilan Creek, Tick Creek, Tar Creek, Pajaro River, San Benito River, and San Juan Creek. All of these streams eventually flow into the Pajaro River, which in turn flows into Monterey Bay. The water quality in the creeks depends upon the volume of water at a given time of the year. Water quality is also dependent upon the concentration of contaminants, which flow into the creeks (either overland or through storm drains) as a component of agricultural or urban runoff. These contaminants include such items as oil and grease, fuel residues, tire particles, agricultural byproducts (fertilizers, herbicides, and pesticides), plant and animal debris (e.g., leaves, dust, animal feces, etc.) litter, and heavy metals. In sufficient concentrations, these pollutants have been found to adversely affect the aquatic habitat of these streams and Monterey Bay, into which the streams flow.

Section 303(d) of the Clean Water Act requires that states develop a list of water bodies that do not meet water quality standards. According to the latest list developed by the Central Coast RWQCB in 2006, the Pajaro River is listed as an impaired water body for boron, fecal coliform, nitrate, nutrients and sedimentation/siltration. The San Benito River is also listed as an impaired water body for fecal coliform and sedimentation/siltration.

2.10.3 Environmental Consequences of the Build Alternative

The proposed project may affect water quality during the short-term (i.e., construction phase) and during the long-term (i.e., operational phase). The short-term effects are described in Section 2.22.6. The long-term effects are described below.

The proposed project will result in an increase in impervious surfaces in the project area.²³ The additional impervious areas that will result from the project will increase the volume and velocity of the stormwater discharge. The increase in post-project stormwater discharges will, in turn, have the potential to increase erosion and cause other adverse effects in local waterways. The additional impervious area that will result from the project is shown in Table 23.

T A B L E 23			
ADDITIONAL IMPERVIOUS SURFACE CREATED BY THE PROJECT			
	Santa Clara County	San Benito County	Total
Design Option A	62.5 acres	13.0 acres	75.5 acres
Design Option B	60.6 acres	13.0 acres	73.6 acres

Source: Stormwater Data Report for U.S. 101 Improvement Project, 2010.

The additional stormwater runoff resulting from the project will contain the same pollutants as the existing stormwater runoff. As noted above, these pollutants adversely affect the water quality of the streams into which the stormwater is discharged.

Impact WQ-1: Construction of the project will increase impervious surfaces, which will increase stormwater runoff. This could lead to the degradation of water quality in nearby creeks and rivers. **[Less-than-Significant with Mitigation Listed in Section 2.10.5]**

2.10.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. There would be no increase in impervious surfaces and no changes to the existing drainage system along U.S. 101. The stormwater treatment areas that would be constructed as part of the Build Alternative would not be constructed.

²³*Impervious* surfaces are those that seal the ground surface and prevent water from infiltrating into the ground. Such surfaces include asphalt, concrete, brick, stone, rooftops. When compared to total surface area, the percentage of impervious surfaces in urbanized areas is significantly high than in rural areas.

2.10.5 Avoidance, Minimization, and/or Mitigation Measures

To minimize post-construction water quality effects, post-construction best management practices (BMPs) have been considered for incorporation into the project. Those considered include infiltration devices, biofiltration strips and swales, wet basins, media filters, detention devices, and multichamber treatment devices (often referred to as "treatment trains"). Biofiltration strips or swales have been identified as the most feasible BMPs for this project.²⁴ Therefore, the following measures are included in the project. Implementation of these measures will reduce water quality impacts due to the project to a less-than-significant level.

MM-WQ-1.1: The project will create approximately 32.4 acres of biofiltration strips and swales along U.S. 101 within the project limits. The strips/swales will be located along the edges of the roadways and interchange ramps. Consistent with the requirements of Caltrans' NPDES permit, this acreage represents the maximum practicable extent of treatment for this project within the constraints of the site. This acreage is based upon preliminary design and will be updated during final design. (Both Design Options)

2.11 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

2.11.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under CEQA.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Caltrans' Office of Earthquake Engineering is responsible for assessing the seismic hazard for its projects. The current policy is to use the anticipated Maximum Credible Earthquake (MCE), from young faults in and near California. The MCE is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

²⁴ *Biofiltration strips and swales* are vegetated surfaces that remove pollutants by filtration through grass, sedimentation, adsorption to soil or grass and infiltration through the soil. Strips and swales are mainly effective at removing debris and solid particles, although some constituents are removed by adsorption into the soil.

2.11.2 Affected Environment

The information in this section is based primarily on a Geotechnical Assessment Report (December 2009) that was prepared for the project. A copy of this report is available for review at the locations listed inside the front cover of this document.

The project segment of U.S. 101 is relatively flat (with elevations gradually climbing in certain areas) and bound by moderately steep to steep slopes and agricultural fields. Existing slope failures have been mapped and observed on the cut and natural slopes that are present along the project alignment. The ground surface elevation in the project area ranges from approximately 140 to 190 feet above mean sea level (msl).

The project alignment is generally underlain by alluvial soils associated with southern Santa Clara Valley, the Pajaro River and San Benito River floodplains, and fill soils associated with roadway and bridge construction. On-site soils have a high expansion potential. Expansive soil can be detrimental to slope stability, pavements, retaining structures, and other improvements. The on-site soils also have potential to corrode or weaken concrete structures and uncoated steel.

The project alignment is located within the seismically active San Francisco Bay Area. A complex zone of interconnecting, northwest-trending faults, known as the Sargent fault zone, crosses through the central portion of the project alignment. The Sargent Fault (Northwestern section) is considered an active fault and crosses beneath the U.S. 101/Sargent bridges. The Sargent Fault (Southeastern section), which crosses beneath the Pajaro River, is not considered "active" at this time; however, it is possible that it will be zoned as such in the future. Other nearby active faults include the San Andreas Fault located approximately 0.5 miles southwest of the project alignment, the Zayante-Vergeles Fault located approximately 4.8 miles south of the project alignment, and the Calaveras Fault zone (Southern Calaveras section) located approximately 4.5 miles east of the project alignment.

The Sargent, San Andreas, Zayante-Vergeles, and Calaveras Faults have Maximum Credible Earthquake (MCE) magnitudes of 6.75, 7.9, 7.0, and 7.4, respectively. Significant seismic events with respect to existing and/or proposed structures would be associated with the Sargent (MCE = 6.75) or San Andreas (MCE = 8.0) fault zones due, in part, to their proximity to the project alignment. Generally, hazards associated with seismic activity include ground surface rupture, strong ground motion, liquefaction, seismically-induced settlement, and seismically-included slope instability. The project area is subject to all of these hazards.

2.11.3 Environmental Consequences of the Build Alternative

The proposed project will involve typical highway excavation and grading practices necessary to widen the highway (which requires the widening or replacement of bridges and culverts within the project limits), reconstruction of the U.S. 101/SR 25 interchange, extension of Santa Teresa Boulevard, and

construction of auxiliary lanes, bicycle facilities, ramp improvements, and a grade-separated railroad crossing. There are no geologic features within the project alignment that would pose special or unique hazards to users of the proposed improvements. The project will implement standard engineering practices to ensure that geotechnical and soil hazards do not result from its construction or operation and comply with Caltrans' Standard Specifications.

The site is within the seismically active San Francisco Bay Area and severe ground shaking is probable during the anticipated life of the project. Users of the highway, interchanges, roadways, bridges, and bicycle facilities would be exposed to hazards associated with severe ground shaking during a major earthquake on one of the region's active faults. This hazard is not unique to the project because it applies to all locations throughout the greater Bay Area. The proposed project will not increase the existing exposure to hazards associated with earthquakes; the hazards in the area will be the same with or without the project.

The project will be designed and constructed in accordance with Caltrans' Seismic Design Criteria to avoid or minimize potential damage from seismic shaking on the site. The structures and roadways will be built to withstand a peak bedrock acceleration of 0.5g. Potential seismic effects will be minimized by the use of standard engineering techniques mandated by the California Building Code and Caltrans' Design Standards.

Impact GEO-1: Construction of the project will not expose people to significant geologic hazards or risks. **[Less-than-Significant Impact]**

2.11.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. The existing environment would remain unchanged.

2.11.5 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.12 PALEONTOLOGY

2.12.1 Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. Under California law, paleontological resources are protected under CEQA.

2.12.2 Affected Environment

The information in this section is based primarily on a technical Paleontological Evaluation Report (November 2008, with May 2011 Addendum). A copy of this report is available for review at the locations listed inside the front cover of this document.

Locations were identified within the project limits where there is a high potential for construction activities to impact paleontological resources. The following locations include rock types which, based on previous studies, contain or are likely to contain significant animal and/or plant fossils.

- Miocene-Pliocene sedimentary rocks
- Plio-Pleistocene continental deposits
- Quaternary alluvium that includes Pleistocene older alluvium and Holocene alluvium²⁵

Miocene-Pliocene sedimentary rocks contain fossils of mammals, fish, sharks and birds, and are highly sensitive.

Plio-Pleistocene continental deposits contain fossils of bison, camels, horses and mammoths. Mammoth fossils have been recovered from these continental deposits near the project area at two locations just north and south of Hollister. These fossils are also highly sensitive.

The Pleistocene older alluvium contains fossils of bison, peccaries (similar to a large pig) and mammoths. Although the uppermost few feet of Holocene alluvium are not very sensitive, deeper excavation may encounter scientifically important fossils. These fossils are considered highly sensitive.

Miocene-Pliocene mammal, fish, shark, and bird fossils, the upper Pliocene to lower Pleistocene camel and horse fossils, and the Pleistocene mammoth and peccary fossils are scientifically important for several reasons. Fossils found here could provide important data for the interpretation of the relationship between species and their evolution. Fossils have also been very important in establishing the ages of, and relationships between, sedimentary rock units in central California, and thus have played an important role in deciphering the history of faulting in this region.

2.12.3 Environmental Consequences of the Build Alternative

As described in the previous section, there are locations within the project limits that are likely to contain significant paleontological resources. Under both design options, construction of the project will

²⁵These terms represent geologic time spans. **Miocene** is the period from 23 million to 5 million years ago. **Pliocene** is the period from 5 million to 2.5 million years ago. **Pleistocene** is the period from 2.5 million to 10 thousand years ago. **Holocene** is the period from 10 thousand years ago to the present.

involve excavation in these sensitive locations. If paleontological resources are present, the construction activities would impact those resources and could destroy scientifically important fossils.

Impact PALEO-1: Construction of the proposed project could impact paleontological resources and could destroy scientifically important fossils. **[Less-than-Significant with Mitigation Listed in Section 2.12.5]**

2.12.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed and no ground-disturbing activities would occur. Therefore, there would be no impact on paleontological resources that might be present in the project area.

2.12.5 Avoidance, Minimization, and/or Mitigation Measures

The following measures are included in the project. Implementation of these measures will reduce impacts to paleontological resources to a less-than-significant level.

MM-PALEO-1.1: A nonstandard special provision for paleontology mitigation will be included in the construction contract special provisions section to advise the construction contractor of the requirement to cooperate with the paleontological salvage.

MM-PALEO-1.2: A qualified principal paleontologist (M.S. or PhD in paleontology or geology familiar with paleontological procedures and techniques) will be retained to prepare a detailed Paleontological Mitigation Plan (PMP) prior to the start of construction. The PMP will include the following elements and stipulations:

- Areas where preconstruction survey and salvage are needed will be identified. This will apply to any areas where paleontologically sensitive strata are exposed at the surface and will be disturbed by project construction.
- A monitoring plan that will identify all areas where excavation will disturb in situ surface exposures of strata assigned to geologic units identified as highly sensitive for paleontological resources. Monitoring will be required for all disturbance of highly sensitive units. Monitoring will not be needed for shallow (less than about three feet deep) disturbance in areas mapped as underlain by units of low paleontological sensitivity, or where disturbance would be entirely confined (in three dimensions) within existing artificial fill. However, monitoring will be required where disturbance more than three feet deep, including drilling

for cast-in-place foundation piers or pilings, will be required in areas where highly sensitive strata are present in the subsurface beneath a veneer of low-sensitivity material.

- All geologic work will be performed under the supervision of a California Professional Geologist.
- The qualified principal paleontologist will be present at pre-grading meetings to consult with grading and excavation contractors.
- Before excavation begins, a training session in employee environmental awareness and fossil identification will be conducted by the principal paleontologist for all personnel involved in earthmoving for the project.
- A paleontological monitor, approved by the qualified principal paleontologist, will be on-site to inspect cuts for fossils at all times during original grading involving sensitive geologic formations.
- When fossils are discovered, the paleontologist (or paleontological monitor) will be called to recover them. Construction work in these areas will be halted or diverted to allow recovery of fossil remains in a timely manner.
- Bulk sediment samples will be recovered from fossiliferous horizons and processed for microvertebrate remains as determined necessary by the principal paleontologist.
- Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, repaired, sorted, and cataloged.
- Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will then be deposited in a scientific institution with paleontological collections. The repository institution should be identified in advance of construction (typically as part of PMP development), and the PMP should include info on the repository agreement.
- A final report will be completed that outlines the results of the mitigation program and will be signed by the Principal Paleontologist and Professional Geologist. Copies of the final report will be sent appropriate institutions so that the documentation will be available to the scientific community going forward.

2.13 HAZARDOUS WASTE/MATERIALS

2.13.1 Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for "cradle to grave" regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

2.13.2 Affected Environment

The information in this section is based primarily on a technical Initial Site Assessment (December 2009) that was prepared for the project. A copy of this study is available for review at the locations listed inside the front cover of this document.

Historically, the project area has been developed with a highway (i.e., U.S. 101), local roadways, a railroad, bridges, agriculture including agricultural buildings and orchards, a sand quarry, and businesses including a Chevron Service Station, a concrete product manufacturing facility, a school, and a RV park. The land uses today are much the same with the addition of commercial and residential developments.

Sites with Known Contamination

There are several sites within a 0.25-mile radius of the project alignment where some type of hazardous materials spill/leakage/contamination has occurred. Based on the status of the sites (e.g., remediation complete/closed case, plume contained on-site) and the direction of groundwater flow at the sites, only one of the identified sites has the potential to adversely affect the project.

The one site is the Chevron Service Station at 5887 Monterey Road in Gilroy, which is adjacent to the northbound U.S. 101 off-ramp to Monterey Street. At that site, a leaking underground storage tank resulted in contaminated soil and groundwater. There are 13 groundwater monitoring wells at the site that monitor the concentrations of various pollutants and the direction of groundwater flow. At present, contamination does not appear to have migrated off-site, but monitoring is continuing.

Sites with Potential Contamination

An abandoned truck scale is located along U.S. 101 at the U.S. 101/Sargent bridges. There is a potential that hydraulic oil was used during the time the scale was in operation. While staining was not observed around the scale, there is a potential for oil to impact unseen areas of adjacent soil in the immediate vicinity of the scale.

Agricultural uses are present, and have historically been present, along much of the project segment of U.S. 101. Soil, surface water, and groundwater in these agricultural areas may be impacted with herbicide and pesticides.

Based on the estimated date of construction (pre-1990) of the Willis Construction Company, a concrete product manufacturing facility situated on the northwest corner of the SR 129/Y Road intersection, there is a potential for asbestos to have been added to concrete products at this facility. Asbestos-containing dust emanating from this facility may have impacted surficial soils near the property.

Railroads use lubricants containing petroleum hydrocarbons for train maintenance and herbicides and pesticides to control weeds and insects along their tracks. Railroad ties are also coated with creosote in many cases. Therefore, the three railroads intersecting the alignment (plus one former railroad) may have used chemicals associated with maintaining the track and train, which may have impacted shallow soils on-site.

During the preparation of the Initial Site Assessment, a debris pile was observed near U.S. 101 Post Mile 1.2 (i.e., between the Tick Creek and Tar Creek crossings), adjacent to and east of where the UPRR crosses an access road. The pile contained concrete, metal, and wood debris, as well as approximately 40 linear feet of 8-inch piping that likely contains asbestos.

Aerially-Deposited Lead

Until recently, lead was commonly added to gasoline.²⁶ As a result, lead was emitted as a component of motor vehicle exhaust. Soil sampling along many roadways has found that concentrations of lead exceed applicable thresholds for classification as a hazardous material. This phenomenon known as

²⁶Lead is a heavy metal that is found in many products. Lead is poisonous to humans. It is especially toxic to the nervous system, although it can adversely affect many systems and organs. In recent years, lead has been removed from certain products such as paint and gasoline in order to reduce the potential for chronic exposure.

"aerially-deposited lead" (ADL) is widespread. Because the project segment of U.S. 101 was built prior to the phaseout of lead as a gasoline additive, elevated concentrations of lead are likely to be present in the soil along the freeway. In fact prior sampling and testing within portions of the project alignment found elevated concentrations of ADL in the soil.

Asbestos-Containing Materials and Lead-Based Paint

Due to the age of the buildings and bridge structures located within the project limits, there is a high potential for the presence of asbestos-containing materials²⁷ and/or lead-based paint. Lead-based paint may also be present in the lane striping and other pavement markings on the highways located within the project limits. Naturally occurring asbestos may also be contained in the aggregate used in bridge construction materials.

2.13.3 Environmental Consequences of the Build Alternative

As discussed above, there is one site (the Chevron Service Station at 5887 Monterey Road) adjacent to U.S. 101 where there is known groundwater contamination. If construction occurs near that site and contaminated groundwater is encountered, construction workers could be exposed.

Based on the ages of the buildings to be demolished by the project, it is likely that asbestos-containing materials and lead-based paints are present. Asbestos-containing materials and lead-based paints are also likely to be present in the existing highway bridges. Demolition and construction activities at these locations could expose construction workers to unsafe levels of these substances.

Aerially-deposited lead is present within the project alignment. Based on testing completed to date, there are a number of locations where the concentrations of lead in the soil are such that the soil meets the definition of a hazardous waste.

Construction activities within or immediately adjacent to the UPRR could expose construction workers to various hazardous substances (e.g., petroleum hydrocarbons, pesticides, herbicides, creosote) that were commonly used by the railroad.

Construction activities within soils that are used, and were historically used, for agricultural purposes could expose construction workers to various hazardous substances (e.g., pesticides and herbicides) that were commonly associated with crop production.

²⁷Asbestos is a mineral that is found in many products because of its resistance to damage from chemicals and heat, as well as its noise absorption properties. However, asbestos is toxic, especially when inhaled. It can cause diseases such as lung cancer, mesothelioma, and asbestosis.

If construction occurs within the site of the former truck scale, and the soil is determined to be contaminated with hydraulic oil, construction workers could be exposed to the hazards associated with that substance.

Impact HAZ-1: Construction of the proposed project could expose construction workers to hazardous substances in concentrations that exceed regulatory thresholds. **[Less-than-Significant with Mitigation Listed in Section 2.13.5]**

2.13.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be built and no construction activities would occur. Therefore, by definition, there would be no potential for encountering hazardous waste or materials that might be present in the project area.

2.13.5 Avoidance, Minimization, and/or Mitigation Measures

The following measures are included in the project. Implementation of these measures will reduce hazardous materials impacts to a less-than-significant level.

MM-HAZ-1.1: If construction activities occur within 50 feet of the Chevron Service Station located at 5887 Monterey Road and groundwater is encountered, the groundwater will be sampled and analyzed for constituents of concern related to the Chevron Service Station contaminants prior to disposal. If groundwater is contaminated, it will be contained and either treated and discharged to the sanitary sewer (if sample analytical results meet local sanitary sewer acceptance criteria) or transported to a licensed groundwater treatment facility.

MM-HAZ-1.2: Prior to project development, a soil investigation will be conducted to determine whether aerially deposited lead (ADL) has affected soils that will be excavated as part of the proposed project. This applies to locations where such testing has not already been completed. The investigation for ADL will be performed in accordance with Caltrans' Lead Testing Guidance Procedure. The analytical results will be compared against applicable hazardous waste criteria. Based on analytical results, the investigation will provide recommendations regarding management and disposal of affected soils in the project area including the reuse potential of ADL-affected soil during project development. The provisions of a variance granted to Caltrans by the California Department of Toxic Substances Control on September 22, 2000 (or any subsequent variance in effect when the project is constructed) regarding aerially-deposited lead will be followed.

- MM-HAZ-1.3:** If contaminated soil is encountered (based on physical observation) during trenching activities along the alignment, the soil will be stockpiled and analyzed for potential contaminants. If the soil can not be reused on-site, the analyses will be sent to a permitted landfill for profiling and waste characterization prior to transport to the landfill. In addition, if contaminated groundwater is encountered during construction, similar steps should be taken to characterize and dispose of the groundwater as was discussed in MM-HAZ-1.2.
- MM-HAZ-1.4:** Herbicides and pesticides will be analyzed in the shallow soil within the project limits in site areas located adjacent to or on agricultural land. Shallow soil samples will be collected and analyzed for metals, total petroleum hydrocarbons, volatile organic compounds, polycyclic aromatic hydrocarbons, herbicides and pesticides from areas adjacent to railroad tracks or within railroad crossings. If soil is impacted with any of the compounds discussed above, it will be stockpiled and sampled for reuse or disposal options.
- MM-HAZ-1.5:** Testing for the presence of lead-based paint will be undertaken on the existing bridge structures, in pavement markings, and within the existing buildings to be demolished. If this substance is found to be present, applicable regulations pertaining to its removal and disposal will be followed.
- MM-HAZ-1.6:** Testing for the presence of asbestos-containing materials on the existing bridge structures, and within the existing buildings to be demolished, will occur. If asbestos is found to be present, applicable regulations pertaining to its removal and disposal will be followed.
- MM-HAZ-1.7:** During construction, soil disturbed in the vicinity of the San Benito River may contain elevated levels of naturally-occurring asbestos (NOA). If elevated levels of NOA are found, then dust suppression measures consistent with the Air Resources Board Air Toxics Control Measure for asbestos will be implemented.

2.14 AIR QUALITY

2.14.1 Regulatory Setting

The Federal Clean Air Act (FCAA) as amended in 1990 is the federal law that governs air quality. The California Clean Air Act of 1988 is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB), set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and State ambient air

quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns. The criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM, broken down for regulatory purposes into particles of 10 micrometers or smaller - PM₁₀ and particles of 2.5 micrometers and smaller - PM_{2.5}), lead (Pb), and sulfur dioxide (SO₂). In addition, State standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H₂S), and vinyl chloride. The NAAQS and State standards are set at a level that protects public health with a margin of safety, and are subject to periodic review and revision. Both State and Federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

Federal and State air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). In addition to this type of environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

FCAA Section 176(c) prohibits the U.S. Department of Transportation and other Federal agencies from funding, authorizing, or approving plans, programs or projects that are not first found to conform to State Implementation Plan (SIP) for achieving the goals of Clean Air Act requirements related to the NAAQS. "Transportation Conformity" takes place on two levels: the regional, or planning and programming, level, and the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 CFR 93 govern the conformity process.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), and in some areas sulfur dioxide (SO₂). California has attainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO₂, and also has a nonattainment area for lead (Pb). However, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all of the transportation projects planned for a region over a period of at least 20 years (for the RTP), and 4 years (for the FTIP). RTP and FTIP conformity is based on use of travel demand and air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), and the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and the FTIP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires "hot spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide (CO) and/or particulate matter (PM₁₀ or PM_{2.5}). A region is "nonattainment" if one or more of the monitoring stations in the region measures violation of the relevant standard, and U.S. EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by U.S. EPA, and are then called "maintenance" areas. "Hot spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a "hot spot" analysis. In general, projects must not cause the "hot spot"-related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

2.14.2 Affected Environment

The information in this section is based primarily on an Air Quality Report (October 2010) and a Mobile Source Air Toxics Emissions Report (October 2010) that were prepared for the project. Copies of these studies are available for review at the locations listed inside the front cover of this document.

San Francisco Bay Air Basin

The Santa Clara County portion of the project is in the San Francisco Bay Area Air Basin²⁸, which has been designated by the U.S. EPA as nonattainment for ground level ozone and PM_{2.5} and as an attainment/maintenance area for CO. The Air Basin does not meet State ozone and PM standards set by the California Air Resources Board (CARB). The Bay Area Air Quality Management District (BAAQMD), along with MTC and the Association of Bay Area Governments, are the agencies responsible for developing plans to attain and maintain ambient air quality standards in the San Francisco Bay Area.

The San Francisco Bay Area is considered to be one of the cleanest metropolitan areas in the country with respect to air quality. BAAQMD monitors air quality conditions at over 30 locations throughout the Bay Area. The monitoring stations closest to the project site are in Gilroy and San Jose. The Gilroy station monitors only ozone.

Ozone is the air pollutant of greatest concern in summer. Prevailing summertime wind conditions tend to cause a build-up of ozone in Santa Clara County. Ozone levels measured in Gilroy exceeded the state 1-hour standard from zero to four times in 2003-2007. Exceedances of the national 8-hour standard occurred two times in 2003. The new state 8-hour standard was exceeded two times in 2006.

²⁸The **San Francisco Bay Area Air Basin** encompasses the following nine counties: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma.

The combination of vehicle exhaust and wood smoke under stagnant air quality conditions leads to a build up of particulates in late fall and winter and, therefore, PM is another pollutant of concern in Santa Clara County.²⁹ The Gilroy station does not measure PM₁₀ or PM_{2.5}, so data from the San Jose station, where PM is measured every sixth day, are reported. Measured exceedances of the state PM₁₀ standard have occurred two to four measurement days in recent years in San Jose, therefore PM₁₀ standards are exceeded about 12 to 24 days per year. Although the PM_{2.5} levels did not exceed standards during this period, the new national 24-hour standard would have been exceeded each year in San Jose.

North Central Coast Air Basin

The San Benito County portion of the project is in the North Central Coast Air Basin³⁰, which has been designated by EPA as attainment/unclassified for ground level ozone and as an attainment/unclassified for CO. The North Central Coast Air Basin does not meet state ozone and PM standards set by CARB. The Monterey Bay Unified Air Pollution Control District (MBUAPCD) and Association of Monterey Bay Area Governments are the agencies responsible for developing plans to attain and maintain ambient air quality standards in the North Central Coast Air Basin.

Similar to the San Francisco Bay Area, the Monterey Bay Area is considered to be one of the cleanest metropolitan areas in the country with respect to air quality. The MBUAPCD monitors air quality conditions at nine locations throughout the North Central Coast Area. The monitoring station closest to the project site is in Hollister.

Ozone is the air pollutant of greatest concern in summer in San Benito County. Ozone levels measured in Hollister exceeded the state 1-hour standard from zero to four times in 2003-2007. Exceedances of the national 8-hour standard occurred once in 2006. The new state 8-hour standard was exceeded five times once in 2006. The current state 8-hour ozone standard was exceeded 77 times between 2003 and 2007 at a monitoring station located in Pinnacles National Park. There have been no PM₁₀ exceedances measured since 2003 at the Hollister station.

²⁹EPA's website (www.epa.gov) defines particulate matter (PM) as a complex mixture of extremely small particles and liquid droplets, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into your lungs, and some may even get into your bloodstream. Exposure to such particles can affect both your lungs and your heart. Small particles of concern include "inhalable coarse particles" (such as those found near roadways and dusty industries), which are larger than 2.5 micrometers and smaller than 10 micrometers in diameter; and "fine particles" (such as those found in smoke and haze), which are 2.5 micrometers in diameter and smaller.

³⁰The **North Central Coast Air Basin** encompasses Monterey, San Benito, and Santa Cruz Counties. The North Central Coast Air Basin is sometimes referred to as the Monterey Bay Air Basin.

Mobile Source Air Toxics

Mobile source air toxics (MSATs) are compounds emitted from highway vehicles and non-road equipment that are known or suspected to cause cancer or other serious health and environmental effects. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as by-products. Metal air toxics result from engine wear or from impurities in oil or gasoline.

The EPA and CARB have identified six priority MSATs. These are 1) benzene, 2) formaldehyde, 3) acetaldehyde, 4) diesel particulate matter/diesel exhaust organic gases, 5) acrolein, and 6) 1,3-butadiene. CARB has found that diesel PM contributes over 70% of the known risk from air toxics and poses the greatest cancer risks among all identified air toxics. Diesel trucks contribute more than half of the total diesel combustion sources. However, the CARB has adopted a Diesel Risk Reduction Plan with control measures that would reduce the overall diesel PM emissions by about 85% from 2000 to 2020.

2.14.3 Environmental Consequences of the Build Alternative

The short-term (i.e., construction phase) air quality effects of the proposed project are described in Section 2.22.4. The project's long-term (i.e., operational phase) effects are described below.

Clean Air Act Conformity

The Santa Clara County portion of the project is located in the San Francisco Bay Area Air Basin, which does not meet federal ambient air quality standards for O₃ and PM_{2.5}. Due to the nonattainment designation for O₃ and PM_{2.5}, and because the project is a regionally significant project, the Santa Clara County portion of the project is subject to federal regional conformity rules.

The San Benito County portion of the project is located in the North Central Coast Air Basin, which is classified by EPA as attainment under the 8-hour NAAQS for ground level ozone. The area is also classified by the EPA as unclassified/attainment under the NAAQS for CO. Therefore, the San Benito County portion of the project is not subject to federal conformity rules.

The northerly portion of the proposed project, including the reconstruction of the U.S. 101/SR 25 interchange, is included in MTC's 2035 RTP as Project Number 21714, which was approved on April 22, 2009. That same portion of the project is also included in the 2009 Transportation Improvement Program (TIP) as Project Number SCL070003. The 2009 TIP was found to conform by FHWA and the Federal Transit Administration (FTA) in November 2008.

The segment of the project between SR 25 and the Santa Clara County/San Benito County line is not currently included in MTC's RTP or TIP. A regional conformity analysis that includes this portion of the project will be undertaken before the project is approved.

According to MTC, the project is not subject to project-level conformity for PM_{2.5} because no federal approvals and/or federal funds are involved.

Traffic-Related Carbon Monoxide (CO) Impacts

Project impacts from local traffic were evaluated by the quantitative method, which is modeling roadside CO concentrations associated with the project and comparing them to federal and state CO Standards. A total of five locations along the U.S. 101 alignment in the project area, where there would be a combination of the 1) highest traffic volumes, 2) greatest project traffic contribution, and 3) highest level of congestion, were modeled. This is because high volume freeways and congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of CO.

Predicted CO concentrations, which include background levels, are shown in Table 24. This assessment was conducted for future No-Build and Build conditions in 2015 and 2035. The results indicate that future CO levels with or without the project would remain well below both federal and state standards.

T A B L E 2 4								
PROJECTED WORST-CASE CARBON MONOXIDE CONCENTRATIONS								
[Expressed in parts-per-million]								
Location along U.S. 101	Year 2015				Year 2035			
	No Build		Build		No Build		Build	
	1-hr.	8-hr.	1-hr.	8-hr.	1-hr.	8-hr.	1-hr.	8-hr.
North of Monterey Street	4.6	3.3	4.6	3.3	4.5	3.2	4.5	3.2
North of SR 25	4.6	3.3	4.7	3.4	4.4	3.1	4.5	3.2
North of San Benito County Line	4.5	3.2	4.6	3.3	4.4	3.1	4.5	3.2
North of Y Road	4.7	3.4	4.8	3.5	4.6	3.3	4.7	3.4
North of SR 129	4.7	3.4	4.7	3.4	4.6	3.3	4.6	3.3

The 1-hour state standard is 20 parts-per-million. The 1-hour federal standard is 35 parts-per-million. Both the state and federal 8-hour standards are 9 parts-per-million

Source: Air Quality Study for the U.S. 101 Improvement Project, 2010.

Comparing the No-Build and Build alternatives at the five modeled locations, CO concentrations would be the same or the difference would be negligible (i.e., one-tenth of one part-per-million).

Impact AQ-1: Implementation of the proposed project would not cause or contribute to violations of CO standards. **[No Impact]**

Mobile Source Air Toxics Impacts

While there are existing uncertainties that do not allow quantitative estimates of health effects from MSAT emissions in the project area, MSAT emissions can be examined in the project area and the relative impacts of these emissions can be estimated under different scenarios. The University of California, Davis, under contract to Caltrans developed a project-level MSAT analysis spreadsheet tool. This tool was developed with cooperation of Caltrans, CARB and FHWA. This analysis predicts emissions of the six priority MSATs using project-specific traffic information and vehicle emissions factors.

Table 25 represents the total MSAT emissions from traffic on the project segment of U.S. 101 under various scenarios, both with and without the project. The data in Table 25 provide information as to 1) how MSAT emissions will decrease between existing conditions and the year 2035, and 2) the effect of the project on MSAT emissions. The data show that, with or without the project, emissions for all six MSATs are projected to decrease considerably over existing conditions as a result more stringent emissions standards mandated by EPA and CARB. Diesel PM is projected to experience a decrease of 82% from 2005 to 2035, while the other MSATs are projected to decrease by between 50% and 83%.

TABLE 25						
COMPARISON OF MOBILE SOURCE AIR TOXICS EMISSIONS						
[Expressed in Pounds per Day]						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
Base Year (2005)	75.3	10.9	2.1	10.5	0.4	23.8
2015 - No Project	40.0 (-47%)	4.9 (-55%)	0.9 (-57%)	4.8 (-54%)	0.2 (-50%)	11.0 (-54%)
2015 - With Project	45.6 (-39%)	5.7 (-48%)	1.1 (-48%)	5.5 (-48%)	0.2 (-50%)	12.5 (-47%)
2035 - No Project	13.7 (-82%)	3.2 (-71%)	0.6 (-69%)	1.8 (-83%)	0.1 (-75%)	4.5 (-81%)
2035 - With Project	13.9 (-82%)	3.5 (-68%)	0.7 (-67%)	2.0 (-81%)	0.2 (-50%)	5.0 (-79%)
Numbers in () represent the percentage change from the 2005 base year.						
Source: U.S. 101 Improvement Project Mobile Source Air Toxics Report, 2010.						

When the “with project” scenario is compared to the “no project” scenario, the data in Table 25 indicate that MSAT emissions would be slightly higher within the project limits if the project is implemented. The reason for this increase is that the increase in capacity provided by the proposed roadway improvements will accommodate more of the traffic demand within the project limits, which correlates to higher emissions. However, the project would not increase regional MSAT emissions because overall traffic demand would not be affected by the project. In other words, the project will accommodate more traffic within the project limits, but overall traffic demand will remain constant.

Impact AQ-2: Implementation of the proposed project would not substantially increase MSAT emissions within the project limits. Regional MSAT emissions would not change due to the project. [**Less-than-Significant Impact**]

2.14.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. As shown in Table 24, future CO levels under the No Build Alternative would remain well below both federal and state standards. With regard to MSAT emissions, the data in Table 25 show that under the No Build Alternative, emissions for all six MSATs are projected to decrease considerably over existing conditions as a result more stringent emissions standards mandated by EPA and CARB. Diesel PM is projected to experience a decrease of 82% from 2005 to 2035, while the other MSATs are projected to decrease by between 50% and 83%.

2.14.5 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.15 CLIMATE CHANGE

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gases (GHGs), particularly those generated from the production and use of fossil fuels.

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change, the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHG related to human activity that include carbon dioxide (CO₂), methane, nitrous oxide,

tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

There are typically two terms used when discussing the impacts of climate change. "Greenhouse Gas (GHG) Mitigation" is a term for reducing GHG emissions in order to reduce or "mitigate" the impacts of climate change. "Adaptation," refers to the effort of planning for and adapting to impacts due to climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).³¹

Transportation sources (passenger cars, light duty trucks, other trucks, buses and motorcycles) in the state of California make up the largest source (second to electricity generation) of greenhouse gas emitting sources. Conversely, the main source of GHG emissions in the United States is electricity generation followed by transportation. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improve system and operation efficiencies, 2) reduce growth of vehicle miles traveled (VMT), 3) transition to lower GHG fuels, and 4) improve vehicle technologies. To be most effective all four should be pursued collectively. The following regulatory setting section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

2.15.1 Regulatory Setting

2.15.1.1 *State*

With the passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level.

Assembly Bill 1493 (AB 1493), Pavley - Vehicular Emissions: Greenhouse Gases (AB 1493), 2002: requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the United States Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. California agencies will be working with Federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger cars model years 2017-2025.

³¹ http://climatechange.transportation.org/ghg_mitigation

Executive Order S-3-05: (signed on June 1, 2005, by Governor Arnold Schwarzenegger) the goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

AB32 (AB 32), the Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that ARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the State's Climate Action Team.

Executive Order S-01-07: Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by 2020.

Senate Bill 97 (Chapter 185, 2007): required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. The Amendments became effective on March 18, 2010.

2.15.1.2 Federal

Although climate change and GHG reduction is a concern at the federal level; currently there are no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and Executive Order 13514- Federal Leadership in Environmental, Energy and Economic Performance.

Executive Order 13514 is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the interagency Climate Change Adaptation Task Force, which is engaged in developing a U.S. strategy for adaptation to climate change.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases - carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) – in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009.³² On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a memorandum on May 21, 2010.³³

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On January 24, 2011, the U.S. EPA along with the U.S. Department of Transportation and the State of California announced a single timeframe for proposing fuel economy and greenhouse gas standards for model years 2017-2025 cars and light-trucks. Proposing the new standards in the same timeframe (September 1, 2011) signals continued collaboration that could lead to an extension of the current National Clean Car Program.

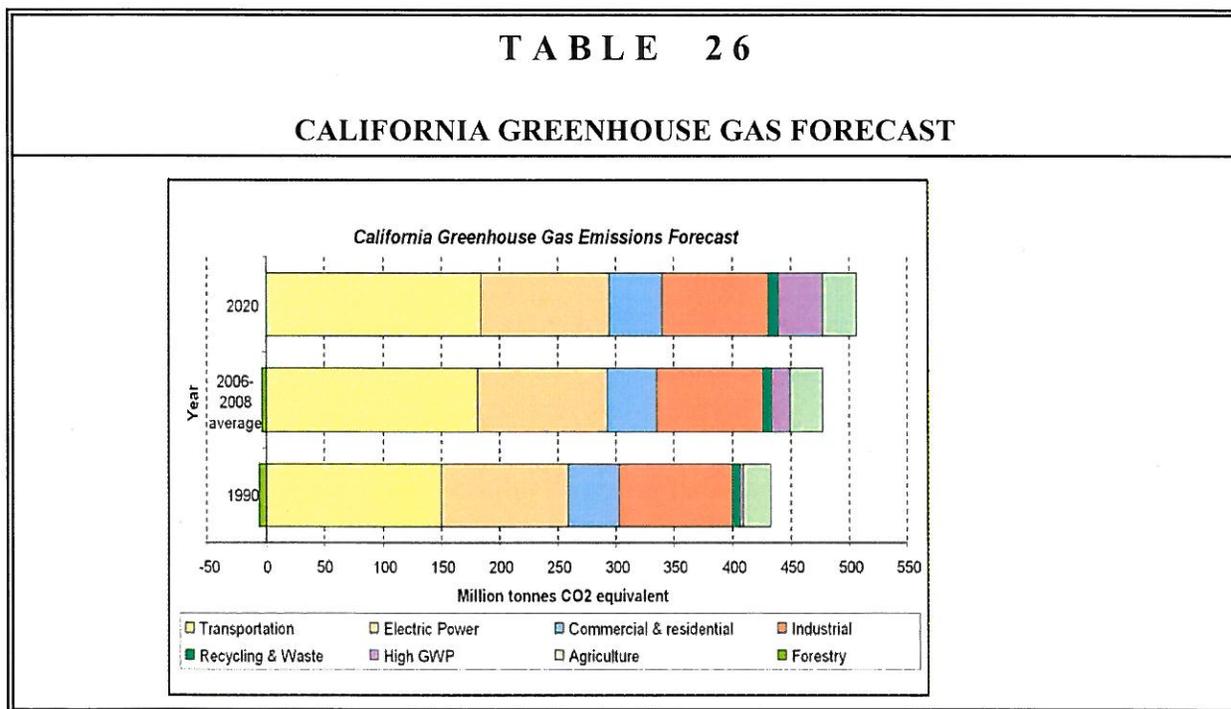
³² <http://www.epa.gov/climatechange/endangerment.html>

³³ <http://epa.gov/otaq/climate/regulations.htm>

2.15.2 **Project Analysis**

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG.³⁴ In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(h)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

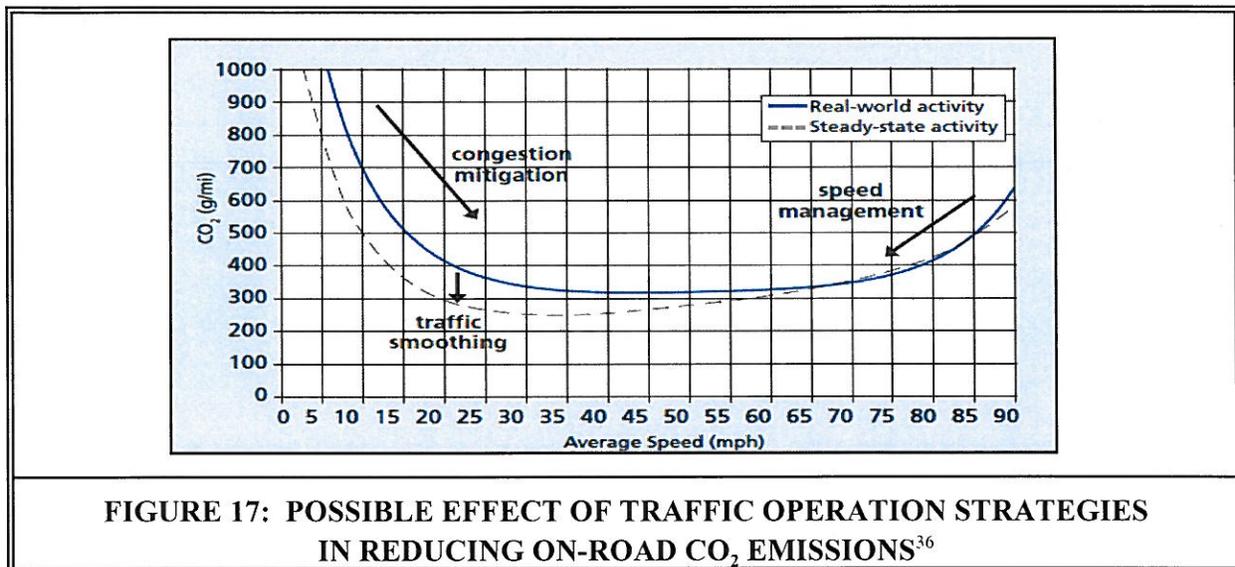
The AB 32 Scoping Plan contains the main strategies California will use to reduce GHG. As part of its supporting documentation for the Draft Scoping Plan, CARB released the GHG inventory for California (Forecast last updated: 28 October 2010). The forecast, which is shown in Table 26, is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.



³⁴This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the SCAQMD (Chapter 6: : The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006 (see Climate Action Program at Caltrans (December 2006)).³⁵

One of the main strategies in Caltrans' Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0-25 miles per hour (see Figure 17). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors GHG emissions, particularly CO₂, may be reduced.



The project alignment between Monterey Street and SR 129 will help relieve congestion in the peak traffic periods. With the construction of the project, vehicle-miles-traveled (VMT) in project area will be higher due to an eight percent increase in average daily traffic volumes. During the peak hours, the speeds in some areas would decrease slightly, 2-3 mph, and in other areas the speeds would increase by as much as 20 to 25 mph to a maximum speed of 70 mph. The speed during the off peak hours would generally remain the same. These changes will have an overall negative effect on the GHG emissions

³⁵Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

³⁶Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010) <<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>>

generated in the project area, as compared with the No-Build scenario. Table 27 shows the GHG, as expressed in tons per day of CO₂.

T A B L E 2 7			
COMPARISON OF CARBON DIOXIDE (CO₂) EMISSIONS			
[Expressed in Tons per Day]			
	Year 2009	Year 2015	Year 2035
Existing	217		
No Build		271	350
Build		315	402

Source: U.S. 101 Improvements Project Air Quality Report, 2010.

The CO₂ emissions numbers shown in Table 27 are only useful for a comparison between alternatives. The numbers are not necessarily an accurate reflection of what the true CO₂ emissions will be because CO₂ emissions are dependent on other factors that are not part of the model such as the fuel mix³⁷, rate of acceleration, and the aerodynamics and efficiency of the vehicles. Further, this project level analysis shows only the CO₂ levels associated with the travel on the project segment of U.S. 101; the traffic data did not include detailed information on alternate routes where the travel may be reduced. The analysis also does not take into account the reductions that would occur with the passage of AB 1493 (approximately 2 percent reduction).

Future no-build scenarios as well as future build scenarios are expected to cause an increase in CO₂ emissions when compared to existing conditions. In the year 2035, when comparing No Build to Build Alternatives, the daily CO₂ emissions are expected to increase by approximately 15%, from 350 tons per day to 402 tons per day (see Table 27).

The purpose of the proposed project is to accommodate future planned growth and to reduce congestion, delay and peak period travel times and is part of a regional plan to reduce congestion and provide improvements to local bike trails to enhance multi-modal travel.

MTC, in the preparation of its regional *Transportation 2035 Plan* for the San Francisco Bay Area EIR, discussed the potential impacts of the overall Plan, which includes the proposed project. According to MTC's EIR, the current daily emission of CO₂ from the existing regional transportation system is close

³⁷EMFAC model emission rates are only for direct engine-out CO₂ emissions, not the full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components.

to 90,000 tons per day. With the enactment of AB 1493 and the buildout of the *Transportation 2035 Plan*, the future CO₂ emissions are expected to drop to 75,600 tons per year. The project-level analysis that yielded the results contained in Table 27, shows only the CO₂ levels associated with travel on U.S. 101; the traffic data did not include detailed information on alternate routes where the travel may be reduced. The analysis also does not take into account the reductions that would occur with the passage of AB 1493 (approximately 2% reduction). With the construction of the proposed project, the total contribution of CO₂ is less than 0.05% of the projected CO₂ emissions in the San Francisco Bay Area in the year 2035.

Limitations and Uncertainties with Modeling

Emissions Factors (EMFAC) Model

Although EMFAC can calculate CO₂ emissions from mobile sources, the model does have limitations when it comes to accurately reflecting CO₂ emissions. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008), studies have revealed that brief but rapid accelerations can contribute significantly to a vehicle's carbon monoxide and hydrocarbon emissions during a typical urban trip. Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idle) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainty in the model's results when compared to the estimated emissions of the various alternatives with baseline in an attempt to determine impacts. Although work by EPA and the CARB is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to conduct this more accurate modeling. In addition, EMFAC does not include speed corrections for most vehicle classes for CO₂; for most vehicle classes emission factors are held constant, which means that EMFAC is not sensitive to the decreased emissions associated with improved traffic flows for most vehicle classes. Therefore, unless a project involves a large number of heavy-duty vehicles, the difference in modeled CO₂ emissions due to speed change will be slight.

CARB is currently not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the CARB has made this decision. Their website only states:

REVISION: Both the EMFAC and OFFROAD Models develop CO₂ and CH₄ [methane] emission estimates; however, they are not currently used as the basis for [CARB's] official [greenhouse gas] inventory which is based on fuel usage information. . . However, ARB is working towards reconciling the emission estimates from the fuel usage approach and the models.

Other Variables

With the current science, project-level analysis of greenhouse gas emissions is limited. Although a greenhouse gas analysis is included for this project, there are numerous key greenhouse gas variables

that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected CO₂ emissions.

First, vehicle fuel economy is increasing. The EPA's annual report, "Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2008 (<http://www.epa.gov/oms/fetrends.htm>)," which provides data on the fuel economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy has improved each year beginning in 2005, and is now the highest since 1993. Most of the increase since 2004 is due to higher fuel economy for light trucks, following a long-term trend of slightly declining overall fuel economy that peaked in 1987. These vehicles also have a slightly lower market share, peaking at 52 percent in 2004 with projections at 48 percent in 2008. Table 28 shows the alternatives for vehicle fuel economy increases studied by the National Highway Traffic Safety Administration in its Final EIS for New Corporate Average Fuel Economy (CAFE) Standards (October 2008).

TABLE 28							
MODEL YEAR 2015 REQUIRED MILES PER GALLON BY ALTERNATIVE							
	No Action	25% Below Optimized	Optimized (Preferred)	25% Above Optimized	50% Above Optimized	Total Costs Equal Total Benefits	Technology Exhaustion
Cars	27.5	33.9	35.7	37.5	39.5	43.3	52.6
Trucks	23.5	27.5	28.6	29.8	30.9	33.1	34.7

Second, near zero carbon vehicles will come into the market during the design life of this project. According to a March 2008 report released by University of California Davis (UC Davis), Institute of Transportation Studies:

"Large advancements have occurred in fuel cell vehicle and hydrogen infrastructure technology over the past 15 years. Fuel cell technology has progressed substantially resulting in power density, efficiency, range, cost, and durability all improving each year. In another sign of progress, automotive developers are now demonstrating over 100 fuel cell vehicles (FCVs) in California - several in the hands of the general public - with configurations designed to be attractive to buyers. Cold-weather operation and vehicle range challenges are close to being solved, although vehicle cost and durability improvements are required before a commercial vehicle can be successful without incentives. The pace of development is on track to approach pre-commercialization within the next decade.

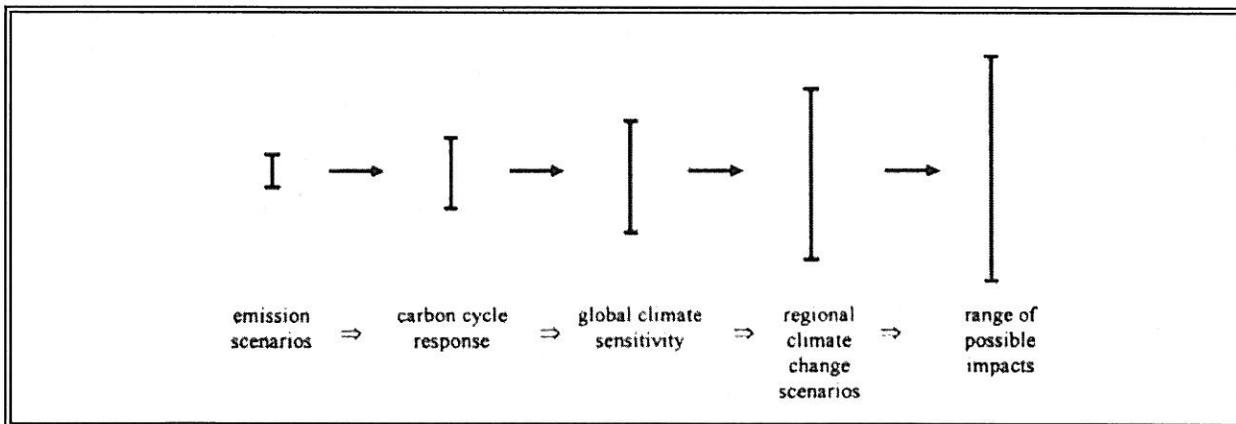
"A number of the U.S. DOE 2010 milestones for FCV development and commercialization are expected to be met by 2010. Accounting for a five to six year production development cycle, the scenarios developed by the U.S. DOE suggest that 10,000s of vehicles per year from 2015 to 2017 would be possible in a federal demonstration program, assuming large cost share grants by the government and industry are available to reduce the cost of production vehicles." ³⁸

Third and as previously stated, California has recently adopted a low-carbon transportation fuel standard. CARB is scheduled to come out with draft regulations for low carbon fuels in late 2008 with implementation of the standard to begin in 2010.

Fourth, driver behavior has been changing as the U.S. economy and oil prices have changed. In its January 2008 report, "Effects of Gasoline Prices on Driving Behavior and Vehicle Market," (<http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf>) the Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists have adjusted to higher gas prices by making fewer trips and driving more slowly; 2) the market share of sports utility vehicles is declining; and 3) the average prices for larger, less-fuel-efficient models have declined over the past five years as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel efficient vehicles.

Limitations and Uncertainties with Impact Assessment

Taken from p. 3-70 of the National Highway Traffic Safety Administration Final EIS for New CAFE Standards (October 2008), the diagram below illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis:



³⁸Cunningham, Joshua, Sig Cronich, Michael A. Nicholas. March 2008. Why Hydrogen and Fuel Cells are Needed to Support California Climate Policy, UC Davis, Institute of Transportation Studies, pp. 9-10.

"Cascade of uncertainties typical in impact assessments showing the "uncertainty explosion" as these ranges are multiplied to encompass a comprehensive range of future consequences, including physical, economic, social, and political impacts and policy responses."

Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in CO₂ emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of CO₂ equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation IPCC scenarios project an increase in global greenhouse gas emissions by 9.7 up to 36.7 billion metric tons CO₂ from 2000 to 2030, which represents an increase of between 25 and 90%.³⁹

The assessment is further complicated by the fact that changes in greenhouse gas emissions can be difficult to attribute to a particular project because the projects often cause shifts in the locale for some type of greenhouse gas emissions, rather than causing "new" greenhouse gas emissions. It is difficult to assess the extent to which any project level increase in CO₂ emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

The complexities and uncertainties associated with project level impact analysis are further borne out in the recently released Final EIS completed by the National Highway Traffic Safety Administration for New CAFE standards (October 2008). As the text quoted below shows, even when dealing with greenhouse gas emission scenarios on a national scale for the entire passenger car and light truck fleet, the numerical differences among alternatives is very small and well within the error sensitivity of the model.

"In analyzing across the CAFE 30 alternatives, the mean change in the global mean surface temperature, as a ratio of the increase in warming between the B1 (low) to A1B (medium) scenarios, ranges from 0.5 percent to 1.1 percent. The resulting change in sea level rise (compared to the No Action Alternative) ranges, across the alternatives, from 0.04 centimeter to 0.07 centimeter. In summary, the impacts of the model year 2011-2015 CAFE alternatives on global mean surface temperature, sea level rise, and precipitation are relatively small in the context of the expected changes associated with

³⁹Intergovernmental Panel on Climate Change (IPCC). February 2007. Climate Change 2007: The Physical Science Basis: Summary for Policy Makers. <http://www.ipcc.ch/SPM2feb07.pdf>.

the emission trajectories. This is due primarily to the global and multi-sectoral nature of the climate problem. Emissions of CO₂, the primary gas driving the climate effects, from the United States automobile and light truck fleet represented about 2.5 percent of total global emissions of all greenhouse gases in the year 2000 (EPA, 2008; CAIT, 2008). While a significant source, this is a still small percentage of global emissions, and the relative contribution of CO₂ emissions from the United States light vehicle fleet is expected to decline in the future, due primarily to rapid growth of emissions from developing economies (which are due in part to growth in global transportation sector emissions)." [NHTSA Draft EIS for New CAFE Standards, June 2008, pp.3-77 to 3-78]

2.15.3 Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

The project includes measures that will reduce GHG emissions during construction, including the following:

- A traffic management plan (TMP) will be prepared and implemented. Among other benefits, the TMP will reduce traffic congestion during construction.
- Unnecessary idling of internal combustion engines will be strictly prohibited.

2.15.4 CEQA Conclusion regarding Climate Change

As discussed above, both the future with project and future no build show increases in CO₂ emissions over the existing levels; the future build CO₂ emissions are higher than the future no build emissions. In addition, as discussed above, there are also limitations with EMFAC and with assessing what a given CO₂ emissions increase means for climate change. Therefore, it is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly

committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

2.15.5 Greenhouse Gas Reduction Strategies

2.15.5.1 *AB 32 Compliance*

Caltrans continues to be actively involved on the Governor's Climate Action Team as CARB works to implement the Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Former Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a \$222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including \$100.7 billion in transportation funding during the next decade. The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain CO₂ reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as depicted in Figure 18, *The Mobility Pyramid*.

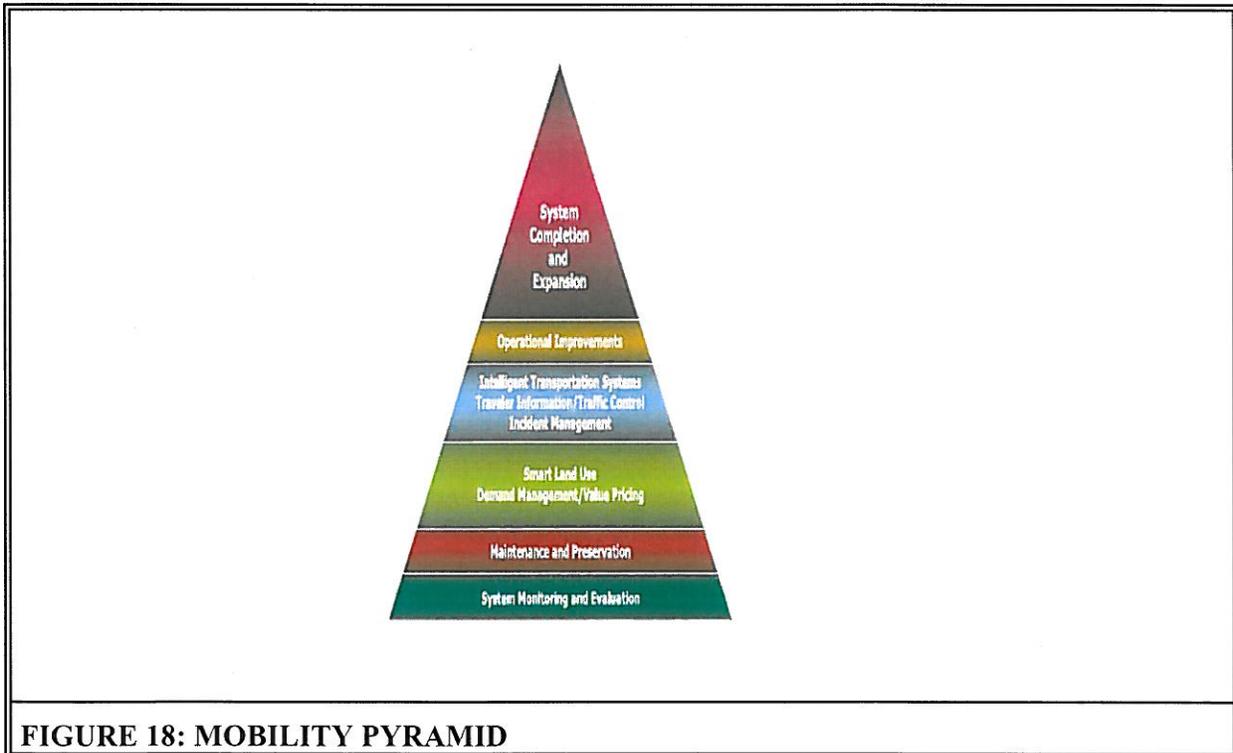


FIGURE 18: MOBILITY PYRAMID

Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by U.S. EPA and ARB. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the UC Davis.

Table 28 summarizes the Caltrans and statewide efforts that Caltrans is implementing in order to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

To the extent that it is applicable or feasible for the project and through coordination with the project development team, the following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

- Caltrans and the California Highway Patrol are working with regional agencies to implement intelligent transportation systems (ITS) to help manage the efficiency of the existing highway system. ITS is commonly referred to as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
- In addition, the VTA provides ridesharing services and park-and-ride facilities to help manage the growth in demand for highway capacity.
- Landscaping reduces surface warming, and through photosynthesis, decreases CO₂. The project proposes planting, as described in Section 2.7, *Visual/Aesthetics*
- The project will incorporate the use of energy efficient lighting, such as LED traffic signals. LED bulbs - or balls, in the stoplight vernacular - cost \$60 to \$70 apiece but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED balls themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the projects CO₂ emissions.

2.15.6 Adaptation Strategies

“Adaptation strategies” refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels,

storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the Federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency report October 14, 2010 outlining recommendations to President Obama for how Federal Agency policies and programs can better prepare the United States to respond to the impacts of climate change. The Progress Report of the Interagency Climate Change Adaptation Task Force recommends that the Federal Government implement actions to expand and strengthen the Nation's capacity to better understand, prepare for, and respond to climate change.

Climate change adaption must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, Governor Schwarzenegger signed Executive Order S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This Executive Order set in motion several agencies and actions to address the concern of sea level rise.

The California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop. The California Climate Adaptation Strategy (Dec 2009)⁴⁰, which summarizes the best known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to Executive Order S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

⁴⁰<http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>

TABLE 29

CLIMATE CHANGE/CO₂ REDUCTION STRATEGIES

Strategy	Program	Partnership		Method/Process	Estimated CO ₂ Savings (Million Metric Tons)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local/Regional Agencies, other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans & Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.07	2.17
Mainstream Energy & GHG into Plans & Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.045 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34

T A B L E 29 [continued]

CLIMATE CHANGE STRATEGIES

Strategy	Program	Partnership		Method/Process	Estimated CO ₂ Savings (Million Metric Tons)	
		Lead	Agency		2010	2020
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5% limestone cement mix	1.2	4.2
				25% fly ash cement mix, >50% fly ash/slag mix	.36	3.6
Goods Movement	Office of Goods Movement	CalEPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total:					2.72	18.18

Resources Agency was also directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010 to advise how California should plan for future sea level rise. The report is to include:

- relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates;
- the range of uncertainty in selected sea level rise projections;
- a synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems;
- A discussion of future research needs regarding sea level rise.

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data

Until the final report from the National Academy of Sciences is released, interim guidance has been released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise.

All projects that have filed a Notice of Preparation, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects as of the date of Executive Order S 13 08

may, but are not required to, consider these planning guidelines. This project is exempt from these planning guidelines because a Notice of Preparation was filed on October 31, 2007, which was prior to the date of Executive Order S-13-08.

Furthermore Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level affecting safety, maintenance and operational improvements of the system and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to Executive Order S-13-08 and is mobilizing to be able to respond to the National Academy of Science report on Sea Level Rise Assessment, which is due to be released in 2012.

2.16 NOISE

2.16.1 Introduction

Noise is measured in "decibels" (dB), which is a numerical expression of sound levels on a logarithmic scale. A noise level that is 10 dB higher than another noise level has ten times as much sound energy and is perceived as being twice as loud. A sound change of less than 3 dB is just barely perceptible, and then only in the absence of other sounds. Intense sounds of 140 dB are so loud that they are painful and can cause damage with only brief exposure. These extremes are not commonplace in our normal working and living environments. An "A-weighted decibel" (dBA) approximates the frequency response of the average young ear when listening to most ordinary everyday sounds. Thus, traffic noise impact analyses commonly use the dBA.

With regard to traffic-generated noise, noise levels rise as vehicle speeds, overall volumes, and truck volumes increase. In general, a doubling of traffic results in a 3 dBA increase in noise at a nearby receptor, assuming a relatively homogeneous traffic composition (i.e., mainly passenger cars). The peak noise hour is typically not the peak commute hour due to lower operating speeds during the latter. The

combination of volumes and speeds that produces the peak noise hour is that which is associated with level of service C/D.

2.16.2 Regulatory Setting

CEQA provides the broad basis for analyzing and abating highway traffic noise effects. The intent of this law is to promote the general welfare and to foster a healthy environment. CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible.

The regulations of the FHWA and Caltrans require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. As shown in Table 30, the NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA).

T A B L E 3 0		
NOISE ABATEMENT CRITERIA OF THE FEDERAL HIGHWAY ADMINISTRATION		
[Expressed in dBA]		
Activity Category	Peak-Hour Leq(h)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Table 31 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

TABLE 31

NOISE LEVELS ASSOCIATED WITH COMMON ACTIVITIES

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

In accordance with Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, August 2006, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC. If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5 dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978, and the cost-per-benefitted-residence.

2.16.3 Affected Environment

The information in this section is based primarily on a technical Noise Report (July 2010) that was prepared for the project. This study is available for review at the locations listed inside the front cover of this document.

The existing noise environment throughout the project corridor varies by location, depending on site characteristics such as proximity to U.S. 101, SR 25, or other local roadways, the relative elevation difference between the highways and receivers, and any intervening topography, structures, or barriers. There is a mix of single-family and multi-family residential, commercial, industrial, and agricultural land-uses throughout the project area.

U.S. 101 is a major source of noise in the project vicinity. Vehicles traveling on U.S. 101 produce Leq(h) noise levels that exceed FHWA's noise abatement criteria at various land uses that are located in proximity to the highway. At the northerly end of the project, vehicles using Monterey Street and other local roadways, as well as the adjacent commercial and residential land uses, contribute to the existing noise environment.

There are no soundwalls along U.S. 101 within the project limits. There are, however, existing noise barriers at the two RV parks located within the project limits. The Garlic Farm RV Park, which is located adjacent to the U.S. 101/Monterey Street interchange in Gilroy, is shielded with a 7-foot berm/wall. The Betabel RV Park, which is located adjacent to the U.S. 101/Betabel Road/Y Road interchange, is shielded from U.S. 101 traffic noise by a 10 to 12-foot earth berm.

Existing peak-hour noise levels were measured and quantified along U.S. 101 within the project limits where there are existing residences, as well as at a motel and the two RV parks. These locations are shown on Figure 19. The existing noise levels range from 57 to 75 dBA Leq(h), as shown in Table 32. The existing noise levels shown in Table 32 take into account the existing noise barriers adjacent to the two RV parks.



NOISE RECEPTOR AND SOUNDWALL EVALUATION LOCATIONS

FIGURE 19A



NOISE RECEPTOR AND POTENTIAL SOUNDWALL LOCATIONS

FIGURE 19B

TABLE 32

COMPARISON OF EXISTING AND FUTURE NOISE LEVELS

[Expressed in Loudest Hour Noise Levels, Leq(h), dBA]

Receptor #	Land Use	Existing Sound-wall in place?	Existing Noise Level	Year 2035			
				No Build Alt. Noise Level	Build Alternative with Design Option A Noise Level (change from Existing/No Build)	Build Alternative with Design Option B Noise Level (change from Existing/No Build)	Noise Level Approach or Exceed NAC?
1	Single-family	No	63	63	67 (+ 4)	67 (+ 4)	Yes
2	Single-family	No	66	66	75 (+ 9)	75 (+ 9)	Yes
3	Single-family	No	67	67	76 (+ 9)	76 (+ 9)	Yes
4	RV Park	Yes	64	64	68 (+ 4)	68 (+ 4)	Yes
5	Motel	No	67	67	71 (+ 4)	71 (+ 4)	No
6	Single-family	No	64	64	68 (+ 4)	68 (+ 4)	Yes
7	Single-family	No	68	68	72 (+ 4)	72 (+ 4)	Yes
8	Single-family	No	67	67	75 (+ 8)	75 (+ 8)	Yes
9	Single-family	No	62	62	68 (+ 6)	68 (+ 6)	Yes
10	Single-family	No	70	70	73 (+ 3)	73 (+ 3)	Yes
11	Single-family	No	74	74	receptor removed by project		
12	Single-family	No	72	72	receptor removed by project		
13	Single-family	No	74	74	receptor removed by project		
14	Single-family	No	71	71	72 (+ 1)	70 (- 1)	Yes
15	Single-family	No	67	67	68 (+ 1)	68 (+ 1)	Yes
16	Multi-family	No	63	63	receptor removed by project		
17	Single-family	No	65	65	66 (+ 1)	67 (+ 2)	Yes
18	Single-family	No	74	74	receptor removed by project		
19	Multi-family	No	75	75	receptor removed by project		
20	Single-family	No	73	73	receptor removed by project		
21	Single-family	No	61	61	66 (+ 5)	62 (+ 1)	Yes*

TABLE 32 [continued]

Receptor #	Land Use	Existing Sound-wall in place?	Existing Noise Level	Year 2035			
				No Build Alt. Noise Level	Build Alternative with Design Option A Noise Level (change from Existing/No Build)	Build Alternative with Design Option B Noise Level (change from Existing/No Build)	Noise Level Approach or Exceed NAC?
22	Single-family	No	70	70	73 (+ 3)	73 (+ 3)	Yes
23	Single-family	No	66	66	67 (+ 1)	67 (+ 1)	Yes
24	Single-family	No	71	71	76 (+ 5)	76 (+ 5)	Yes
25	Multi-family	No	63	63	66 (+ 3)	66 (+ 3)	Yes
26	RV Park	Yes	58	58	61 (+ 3)	61 (+ 3)	No
27	RV Park	Yes	57	57	60 (+ 3)	60 (+ 3)	No
28	RV Park	Yes	60	60	63 (+ 3)	63 (+ 3)	No

*NAC approached under Design Option A only.

NAC = noise abatement criteria of FHWA Receptors are shown on Figure 19.

Source: U.S. 101 Improvements Project Noise Study Report, 2010.

2.16.4 Environmental Consequences of the Build Alternative

The short-term (i.e., construction phase) noise effects of the proposed project are described in Section 2.22.5. The project's long-term (i.e., operational phase) effects are described below.

Future traffic-related noise levels at land uses adjacent to U.S. 101 within the project limits were quantified in accordance with FHWA and Caltrans procedures. Projected noise levels were then compared to FHWA's noise abatement criteria shown in Table 30 to determine whether the consideration of noise abatement measures was warranted. Projected noise levels were also compared with existing noise levels to determine whether the increase (if any) would be substantial.

As shown in Table 32, the effect of the project on noise levels will vary by location. The location that would experience the largest increase in noise is at the residences located along the frontage road on the west side of U.S. 101, just south of the U.S. 101/Monterey Street interchange. At that location (represented by receptors #2, #3, #8, and #9 in Table 32), the noise increase due to the project would be 6 to 9 dBA under either design option. At other locations, the change in noise levels due to the project would range from a decrease of 1 dBA to an increase of 5 dBA.

In all cases, projected increases in noise levels would not be substantial because the increase would be less than the 12-dB increase described above.

Impact NOI-1: Depending on the location, changes in long-term noise levels will range from a decrease of 1 dBA to an increase of 9 dBA, which is less than the 12-dB increase that would be considered substantial. **[Less-than-Significant Impact]**

2.16.5 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. Table 32 quantifies the projected future noise levels under the No Build Alternative. The data show that noise levels under the No Build Alternative from traffic on U.S. 101 would be unchanged from the existing noise levels.

2.16.6 Avoidance, Minimization, and/or Mitigation Measures

Although the project would not result in a substantial increase in traffic-related noise, projected noise levels will, however, exceed FHWA's noise abatement criteria at many locations, as some locations currently do under existing conditions. As a result, the feasibility and reasonableness allowances of noise abatement measures were considered. This process involved an evaluation of the feasibility and reasonableness allowance for constructing a new soundwall at each location where the noise abatement criteria will be approached or exceeded.

The feasibility of soundwalls was determined by the 5-dBA minimum reduction in noise level as well as overall constructability. The reasonableness allowances for the soundwalls were determined using criteria contained in Caltrans' *Traffic Noise Analysis Protocol*.

Based on the studies, Caltrans has determined that the construction of nine new soundwalls, as shown in Table 33 and on Figure 19, would be feasible (i.e., they would meet the minimum 5-dBA noise reduction criterion). However, the cost estimate for each of the nine soundwalls substantially exceeds the calculated reasonableness allowance. These soundwalls are described in the following paragraphs.

Soundwall #1

Soundwall #1 is actually two 16-foot soundwalls, both of which would be needed to achieve a 5-dB reduction in traffic noise at two adjacent single-family residences. As shown on Figure 19, Soundwall #1A would be 800 feet in length and would be constructed along the edge-of-shoulder of southbound U.S. 101. Soundwall #1B would be 600 feet in length and would be constructed along the edge-of-shoulder of the southbound U.S. 101 on-ramp from Monterey Street.

Soundwall Number and Location	Approximate Soundwall Height/Length (feet)	Amount of Reduction in Noise (dBA)	# of Residences Benefitting by ≥ 5 dBA	Reasonable Allowance	Preliminary Cost Estimate
#1: SW quadrant of 101/Monterey St. Interchange	16 / 1,400	5	2	\$90,000	\$1,210,000
#2: Westside of 101, S of Monterey Street	8 / 1,300	5 to 6	3	\$157,000	\$562,000
	10 / 1,300	7 to 8	3	\$159,000	\$702,000
	12 / 1,300	8 to 10	3	\$163,000	\$842,000
	14 / 1,300	9 to 10	3	\$165,000	\$983,000
	16 / 1,300	9 to 11	3	\$165,000	\$1,123,000
#3: Eastside of 101, N of Carnadero Creek	10 / 1,900	5	2	\$94,000	\$1,026,000
	12 / 1,900	6 to 7	4	\$194,000	\$1,231,000
	14 / 1,900	7 to 8	4	\$194,000	\$1,436,000
	16 / 1,900	7 to 8	4	\$194,000	\$1,642,000
#4: Westside of 101, N of Carnadero Creek	8 / 1,400	6	1	\$53,000	\$605,000
	10 / 1,400	7	1	\$53,000	\$756,000
	12 / 1,400	5 to 10	2	\$100,000	\$907,000
	14 / 1,400	5 to 11	2	\$100,000	\$1,058,000
	16 / 1,400	6 to 12	2	\$104,000	\$1,210,000
#5A: Eastside of 101, vicinity of Garlic World	10 / 2,600	5	2	\$88,000	\$1,404,000
	12 / 2,600	5 to 7	3	\$135,000	\$1,685,000
	14 / 2,600	6 to 8	3	\$137,000	\$1,966,000
	16 / 2,600	6 to 8	3	\$137,000	\$2,246,000
#5B: Eastside of 101, vicinity of Garlic World	10 / 2,600	5	2	\$88,000	\$1,404,000
	12 / 2,600	5 to 8	3	\$139,000	\$1,685,000
	14 / 2,600	6 to 9	3	\$143,000	\$1,966,000
	16 / 2,600	6 to 9	3	\$143,000	\$2,246,000
#6: Westside of 101, vicinity of 101/25 interchange	12 / 900	5	1	\$45,000	\$583,000
	14 / 900	5	1	\$45,000	\$680,000
	16 / 900	6	1	\$47,000	\$778,000

TABLE 33 [continued]

Soundwall Number and Location	Approximate Soundwall Height/Length (feet)	Amount of Reduction in Noise (dBA)	# of Residences Benefitting by ≥ 5 dBA	Reasonable Allowance	Preliminary Cost Estimate
#7: Westside of 101, N of driveway to quarry	10 / 1,000	5	2	\$94,000	\$540,000
	12 / 1,000	6	2	\$98,000	\$648,000
	14 / 1,000	9	2	\$102,000	\$756,000
	16 / 1,000	10	2	\$102,000	\$864,000
#8: Westside of 101, at Tar Creek	8 / 800 ft.	7	1	\$51,000	\$346,000
	10 / 800 ft.	8	1	\$51,000	\$432,000
	12 / 800 ft.	8	1	\$51,000	\$518,000
	14 / 800 ft.	9	1	\$53,000	\$605,000
#9: Eastside of 101, S of Pajaro River	16 / 800 ft.	9	1	\$53,000	\$691,000
	12 / 1,200	6	5	\$235,000	\$778,000
	14 / 1,200	6	5	\$235,000	\$907,000
	16 / 1,200	7	5	\$235,000	\$1,037,000
<ul style="list-style-type: none"> • All of the above soundwalls are feasible, meaning they provide a minimum of five decibels of noise reduction at one or more receptors. • Wall 5A is applicable to Design Option A and Wall 5B is applicable to Design Option B. • Wall 6 is applicable to Design Option A only. • \$40 per square foot is the current unit cost being used for conceptual estimates for soundwalls. Cost estimates include 25% contingency + 10% mobilization allowances. • Soundwall locations are shown on Figure 19. 					
Source: U.S. 101 Improvement Project Noise Study Report, 2010.					

Soundwall #2

Soundwall #2 would be constructed along the westside of U.S. 101, south of the 101/Monterey Street interchange. It's length would be approximately 1,300 feet and it would benefit three single-family residences. As shown in Table 33, wall heights ranging from 8 to 16 feet are feasible. A minimum wall height of 12 feet would, however, be required to intercept the line of sight between a truck exhaust stack and a 5-foot high receiver.⁴¹

⁴¹Truck exhaust stacks are a notable source of noise. Therefore, breaking the line of sight between the top of an exhaust stack and an adjacent receptor is typically desired as it serves to reduce this noise source.

Soundwall #3

Soundwall #3 would be constructed along the eastside of U.S. 101, north of Carnadero Creek. It's length would be approximately 1,900 feet and it would benefit up to four single-family residences. As shown in Table 33, soundwall heights ranging from 10 to 16 feet are feasible. A minimum wall height of 12 feet would, however, be required to intercept the line of sight between a truck exhaust stack and a 5-foot high receiver.

Soundwall #4

Soundwall #4 would be constructed along the westside of U.S. 101, north of Carnadero Creek. It's length would be approximately 1,400 feet and it would benefit up to two single-family residences. As shown in Table 33, soundwall heights ranging from 8 to 16 feet are feasible. A minimum wall height of 12 feet would, however, be required to intercept the line of sight between a truck exhaust stack and a 5-foot high receiver.

Soundwall #5

Soundwall #5 would be constructed along the eastside of U.S. 101, north of the U.S. 101/SR 25 interchange. It's length would be approximately 2,600 feet and it would benefit up to three single-family residences. As shown in Table 33, soundwall heights ranging from 10 to 16 feet are feasible. A minimum wall height of 12 feet would, however, be required to intercept the line of sight between a truck exhaust stack and a 5-foot high receiver. [Note: Table 33 shows Soundwalls #5A and #5B. This does not mean that two soundwalls would be built. Rather, Soundwall #5A illustrates the noise reduction that would occur if Design Option A is chosen and Soundwall #5B illustrates the noise reduction that would occur if Design Option B is chosen.]

Soundwall #6

Soundwall #6 would be constructed along the westside of U.S. 101, near the U.S. 101/SR 25 interchange. It's length would be approximately 900 feet and it would benefit one single-family residence. As shown in Table 33, soundwall heights ranging from 12 to 16 feet are feasible. Soundwall #6 would be constructed only if Design Option A is selection; noise levels at this receptor under Design Option B do not warrant consideration of a soundwall.

Soundwall #7

Soundwall #7 would be constructed along the westside of U.S. 101, north of the driveway that leads to the nearby quarry. It's length would be approximately 1,000 feet and it would benefit two single-family residences. As shown in Table 33, soundwall heights ranging from 10 to 16 feet are feasible.

Soundwall #8

Soundwall #8 would be constructed along the westside of U.S. 101 at Tar Creek. It's length would be approximately 800 feet and it would benefit one single-family residence. As shown in Table 33, soundwall heights ranging from 8 to 16 feet are feasible.

Soundwall #9

Soundwall #9 would be constructed along the eastside of U.S. 101, south of the Pajaro River. It's length would be approximately 1,200 feet and it would benefit five multi-family residences. As shown in Table 33, soundwall heights ranging from 12 to 16 feet are feasible.

Final Decision on Soundwalls

As stated above, while all nine soundwalls are feasible (i.e., they would meet the minimum 5-dB noise reduction criterion), the costs of each of the soundwalls substantially exceed the calculated reasonableness allowance. Based on this information, a preliminary decision has been made to not construct any of these soundwalls as a part of the project. A final decision on which, if any, of the nine soundwalls will be constructed will be made upon completion of the public involvement process.

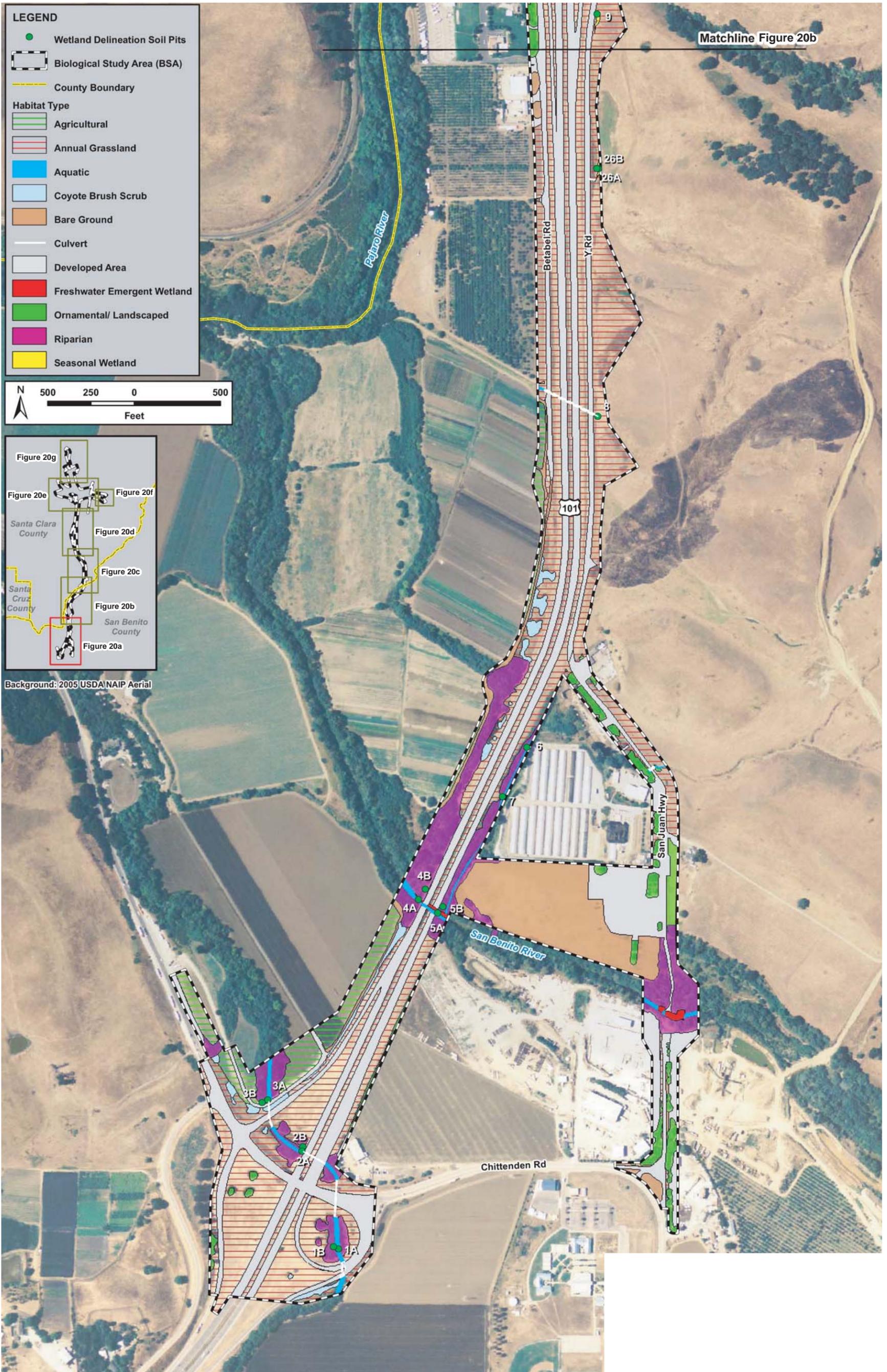
BIOLOGICAL ENVIRONMENT

The information in this section is based primarily on a Natural Environment Study (April 2011) that was prepared for the project. A copy of this study is available for review at the locations listed inside the front cover of this document.

Overall Methodology

In order to identify the biological resources that are discussed in each of the following sections (e.g., natural communities, wetlands, special-status plant and animal species, and threatened and endangered species), a biological study area (BSA) for the proposed project was delineated. The BSA was drawn to include all areas that could be temporarily or permanently impacted by the project. In addition, in order to ensure that all resources were adequately identified, the BSA was conservatively delineated to include an area somewhat larger than that where direct impacts will occur. Therefore, the project's impacts, as quantified in the following sections, are a subset of the acreage of each habitat identified in Table 34 as occurring within the BSA.

Figures 20a through 20g on the following pages depict the BSA and the habitats that occur within it.



BIOLOGICAL STUDY AREA

FIGURE 20a

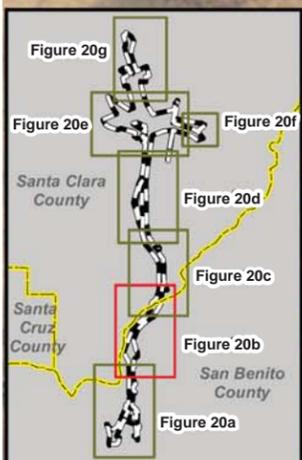
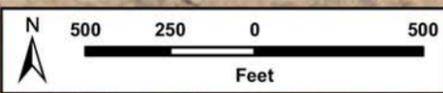
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LEGEND

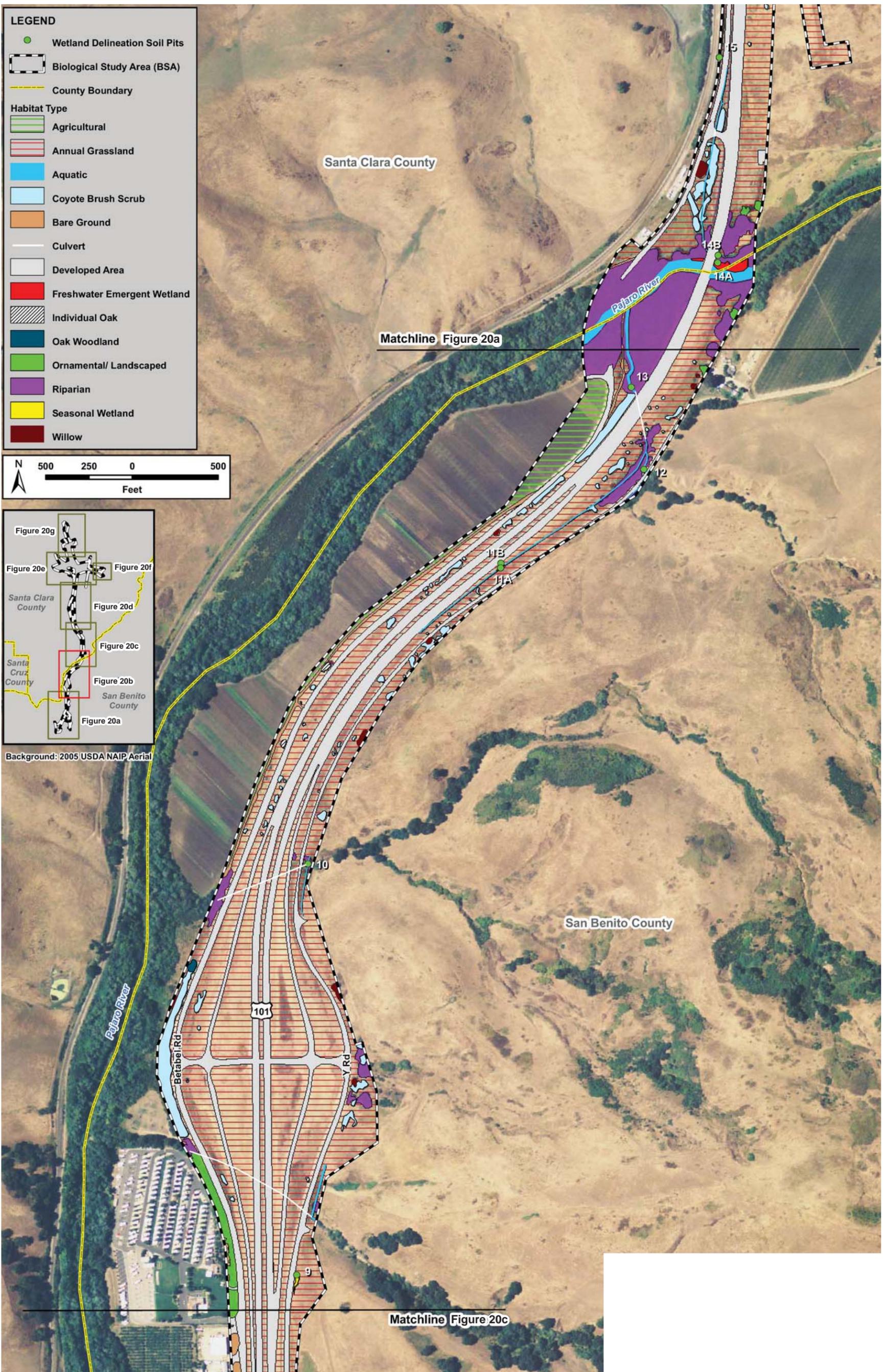
- Wetland Delineation Soil Pits
- ▭ Biological Study Area (BSA)
- County Boundary

Habitat Type

- ▭ Agricultural
- ▭ Annual Grassland
- ▭ Aquatic
- ▭ Coyote Brush Scrub
- ▭ Bare Ground
- ▭ Culvert
- ▭ Developed Area
- ▭ Freshwater Emergent Wetland
- ▭ Individual Oak
- ▭ Oak Woodland
- ▭ Ornamental/ Landscaped
- ▭ Riparian
- ▭ Seasonal Wetland
- ▭ Willow



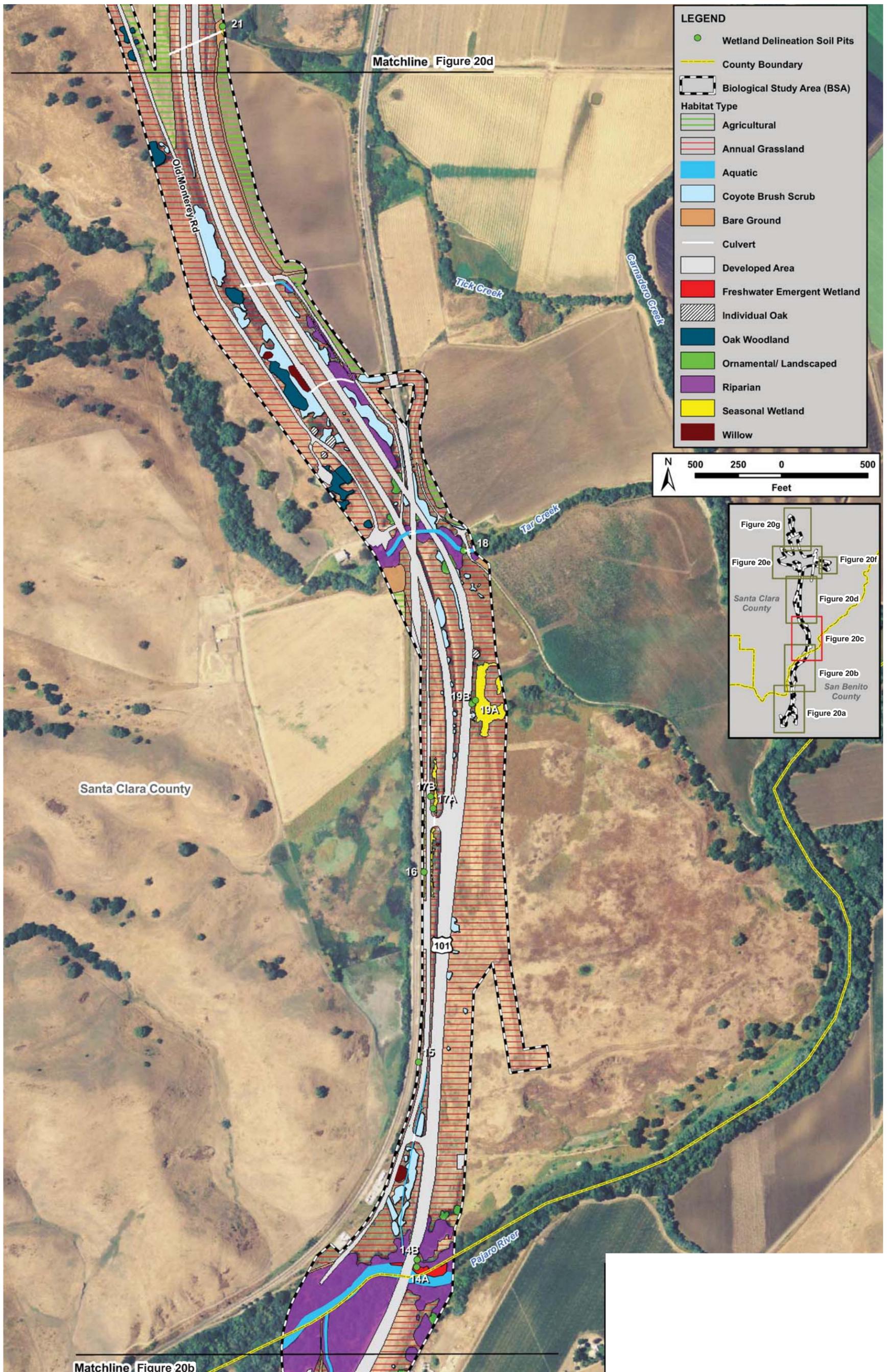
Background: 2005 USDA NAIP Aerial



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BIOLOGICAL STUDY AREA

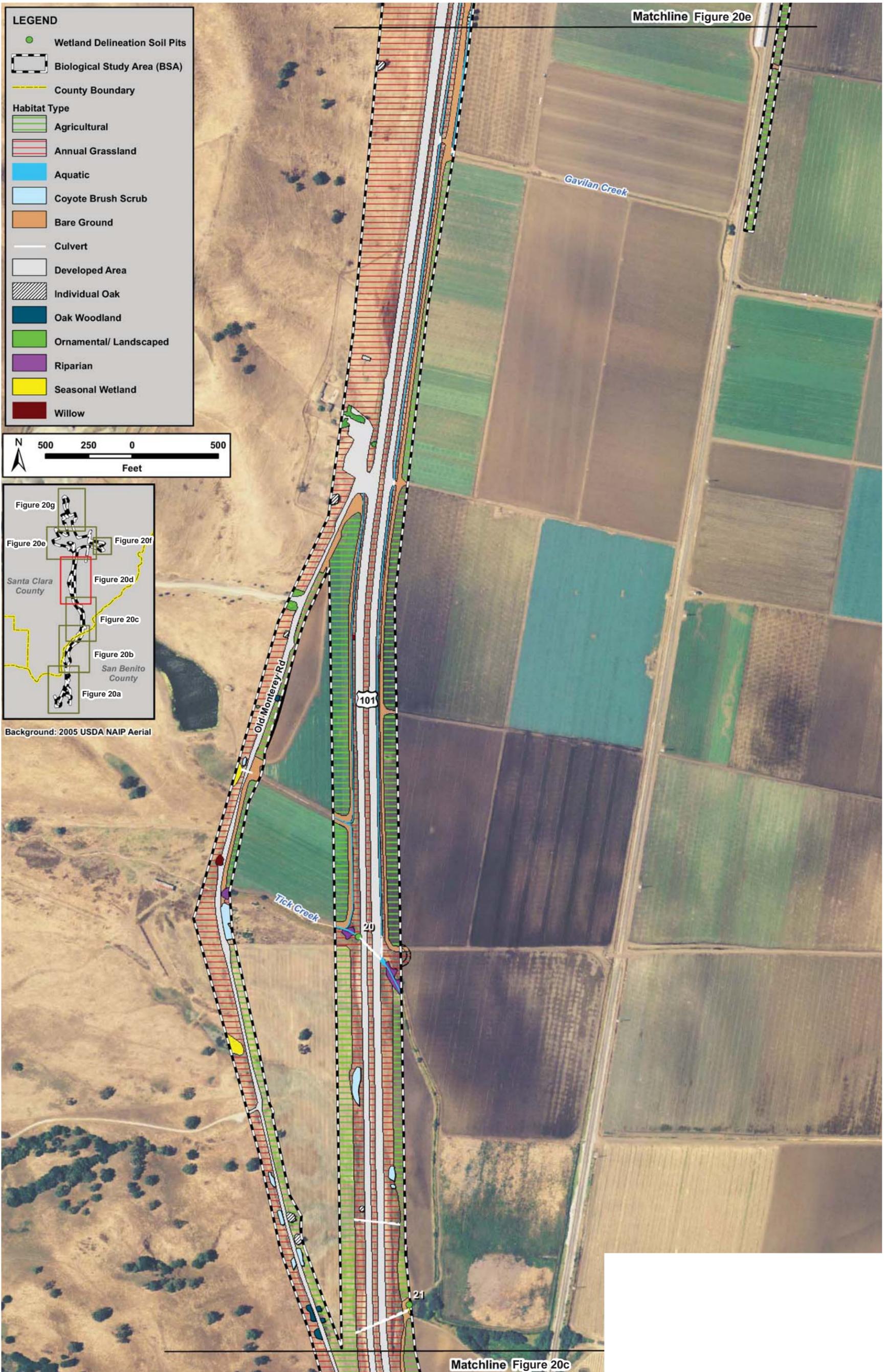
FIGURE 20b



BIOLOGICAL STUDY AREA

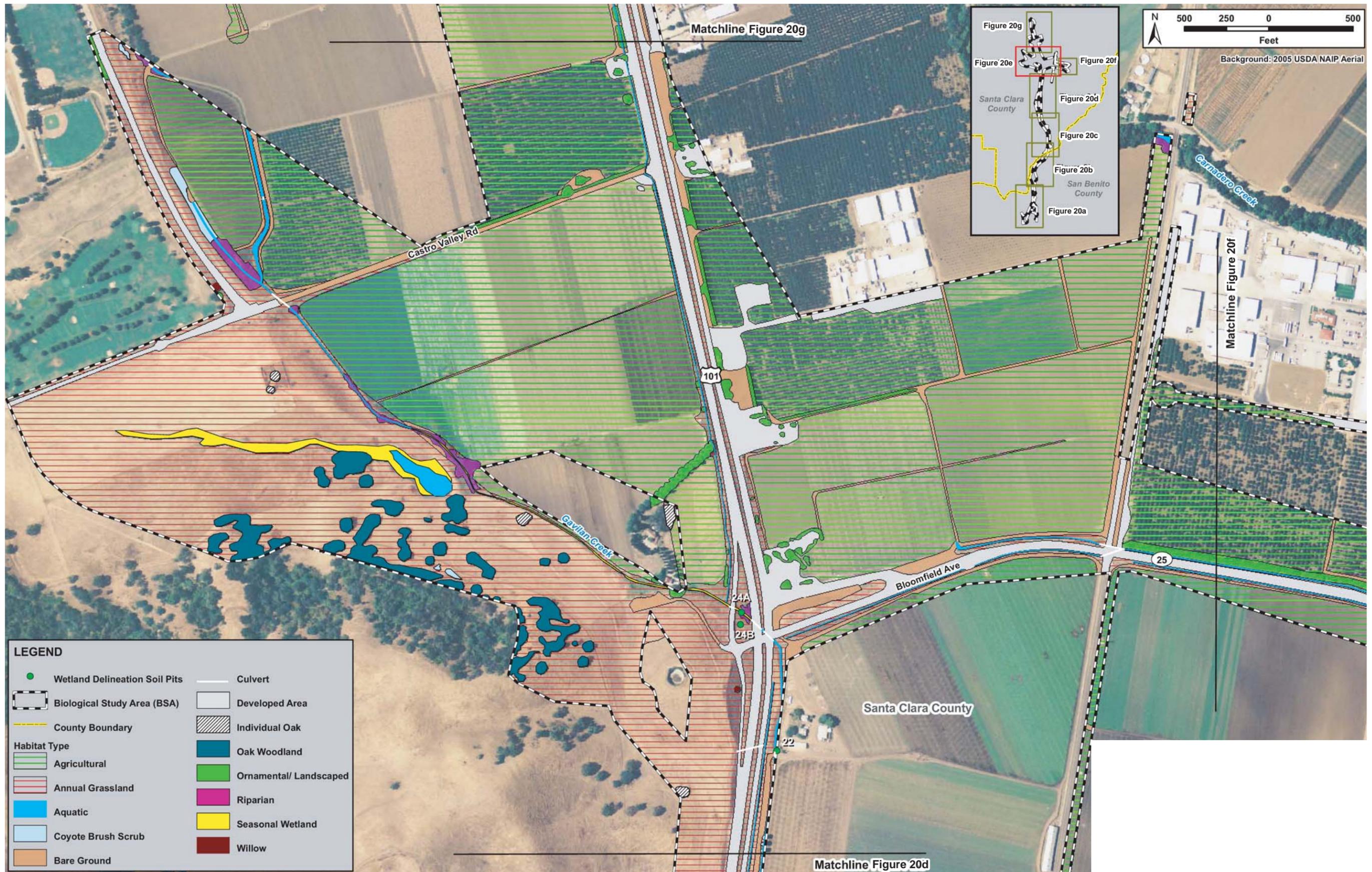
FIGURE 20c

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BIOLOGICAL STUDY AREA

FIGURE 20d



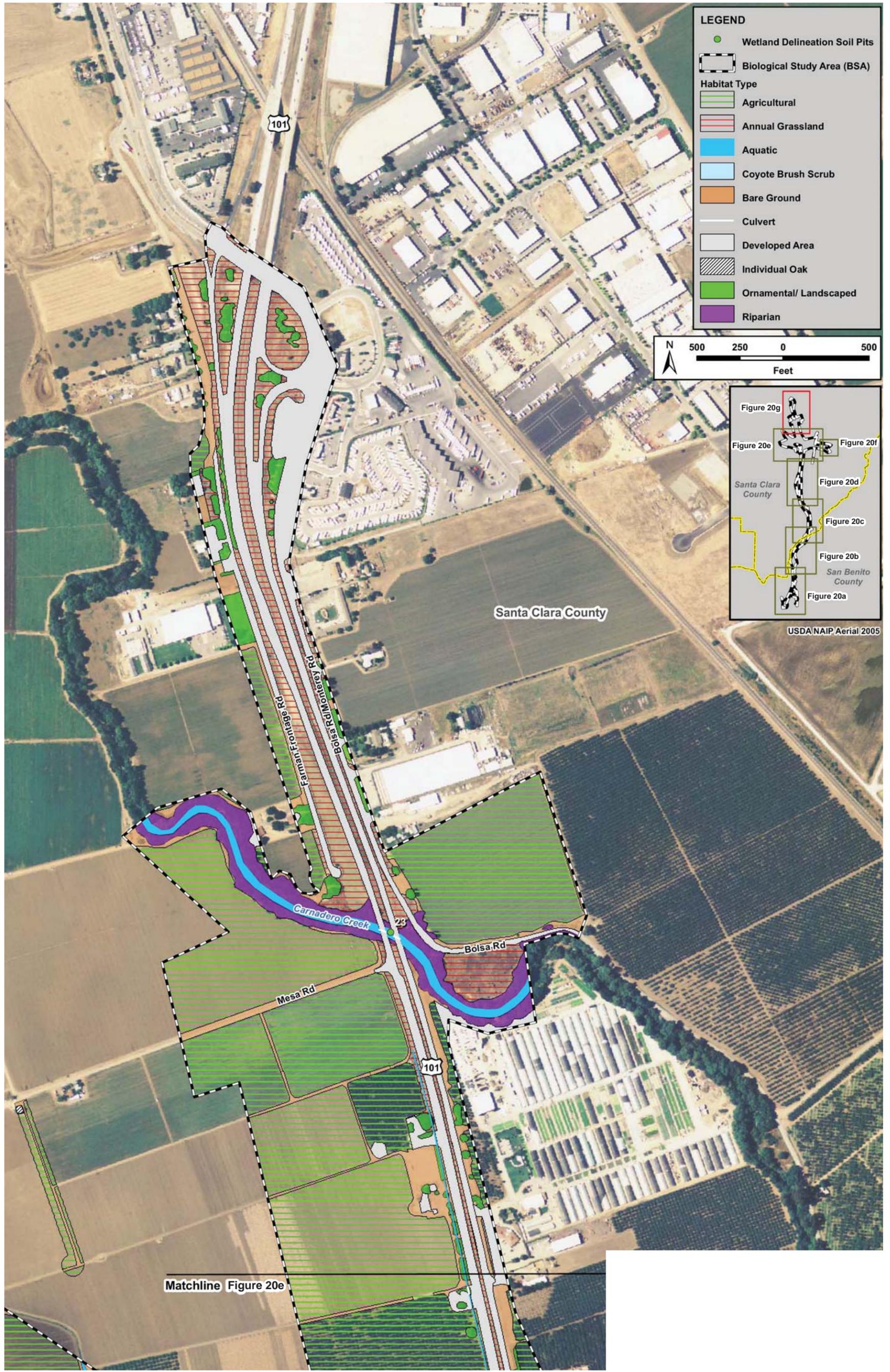
BIOLOGICAL STUDY AREA

FIGURE 20e



BIOLOGICAL STUDY AREA

FIGURE 20f



XXX

BIOLOGICAL STUDY AREA

FIGURE 20g

TABLE 34

IMPACTS TO BIOLOGICAL HABITATS

[Expressed in Acres]

				Impacts of the Build Alternative						
Habitat Type	Existing Within BSA			Design Option	Temporary			Permanent		
	Santa Clara County	San Benito County	Total		Santa Clara County	San Benito County	Total	Santa Clara County	San Benito County	Total
Annual Grassland	218.3	95.9	314.2	A	75.0	59.0	134.0	34.0	11.0	45.0
				B	81.5	59.0	140.5	38.0	11.0	49.0
Riparian	16	19	35	A	2.0	5.0	7.0	3.5	4.5	8.0
				B	2.0	5.0	7.0	3.5	4.5	8.0
Freshwater Emergent Wetlands	.11	.35	.46	A	0.01	0.05	0.06	0.05	0.04	0.09
				B	0.01	0.05	0.06	0.05	0.04	0.09
Seasonal Wetlands	4.25	.07	4.32	A	0.26	0.03	0.29	1.12	0.03	1.15
				B	0.46	0.03	0.49	1.29	0.03	1.32
Aquatic	6.59	1.65	8.24	A	0.74	0.24	0.98	1.49	0.25	1.74
				B	0.74	0.24	0.98	1.56	0.25	1.81
Coyote Brush Scrub	4.8	5.9	10.7	A	5.5	3.0	8.5	1.0	1.0	2.0
				B	5.0	3.0	8.0	1.0	1.0	2.0
Oak Woodland	8.7	.06	8.76	A	0.0	0.0	0.0	2.0	0.0	2.0
				B	0.0	0.0	0.0	1.5	0.0	1.5
Ornamental/Landscaped	12.4	4.7	17.1	A	6.0	3.5	9.5	2.5	0.5	3.0
				B	5.5	3.5	9.0	2.5	0.5	3.0
Agriculture	327.8	9.2	337	A	95.5	4.0	99.5	40.0	0.5	40.5
				B	77.0	4.0	81.0	23.5	0.5	24.0
Developed	105.4	66.6	172	A	--	--	--	--	--	--
				B	--	--	--	--	--	--
Bare Ground	34.2	12.7	46.9	A	13.0	11.5	24.5	6.0	0.5	6.5
				B	14.5	11.5	26.0	6.0	0.5	6.5

BSA = Biological Study Area

Source: Natural Environment Study for the U.S. 101 Improvement Project, April 2011.

2.17 NATURAL COMMUNITIES

2.17.1 Introduction

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Section 2.21, *Threatened and Endangered Species*. Wetlands and other waters are also discussed in Section 2.18, *Wetlands and Other Waters*.

2.17.2 Affected Environment

The following sensitive habitats are listed by the California Natural Diversity Rarefind Database as occurring in the region⁴²: 1) northern maritime chaparral; 2) central maritime chaparral; 3) maritime coast ponderosa pine forest; 4) northern coastal salt marsh; and 5) and coastal brackish marsh. The project site does not present suitable soil substrates or microclimatic regimes for any of these sensitive habitats, and none of these habitats was observed to occur within the BSA.

The BSA does, however, contain other natural communities of special importance, including riparian habitat and oak woodland habitat, both of which are discussed in this section. Wetlands and aquatic habitat, which are also natural communities of special importance, are discussed in Section 2.18, *Wetlands and Other Waters*. Wildlife corridors and fish passage issues are discussed in this section.

2.17.2.1 *Riparian Habitat*

The project segment of U.S. 101 crosses the following waterways (from north to south): Carnadero Creek, Gavilan Creek, Tick Creek, Tar Creek, Pajaro River, San Benito River, and San Juan Creek. Habitat along these waterways, commonly referred to as riparian habitat, comprises approximately 35 acres within the BSA. The majority of riparian habitat within the BSA consists of high-quality riparian forest dominated by willow trees and understory shrubs. The Pajaro River, the San Benito River, and Carnadero Creek support the largest areas of high-quality riparian habitat within the project alignment. Riparian vegetation within these drainages is dominated by a well-developed overstory canopy of red willow trees and occasional coast live oak, valley oak, and sycamore trees. The majority of the rivers, creeks, and drainages on-site also support a lush understory of riparian shrub vegetation including red

⁴²“Region” is the United States Geological Survey quadrangle map where the project is located (i.e., Chittenden Quadrangle) and all of the surrounding quadrangle maps.

willow, yellow willow, and narrow-leaved willow. These shrubs form a rather dense layer of vegetation beneath the overstory tree canopy. Other associate shrubs within the riparian understory include poison oak, blue elderberry, California coffeeberry, California rose, coyote brush, and Himalayan blackberry.

An herbaceous ground layer of annual native and non-native plant species is also present where gaps in the tree canopy permit sunlight to reach the forest floor. Native herbaceous plants include California sagebrush, stinging nettle, fiesta flower, California man-root, willow herbs, virgin's bower, and honeysuckle. The rivers, creeks, and intermittent drainages on-site also support aquatic habitat, freshwater emergent wetlands, and seasonal wetlands that are described in Section 2.18, *Wetlands and Other Waters*.

2.17.2.2 Oak Woodland Habitat

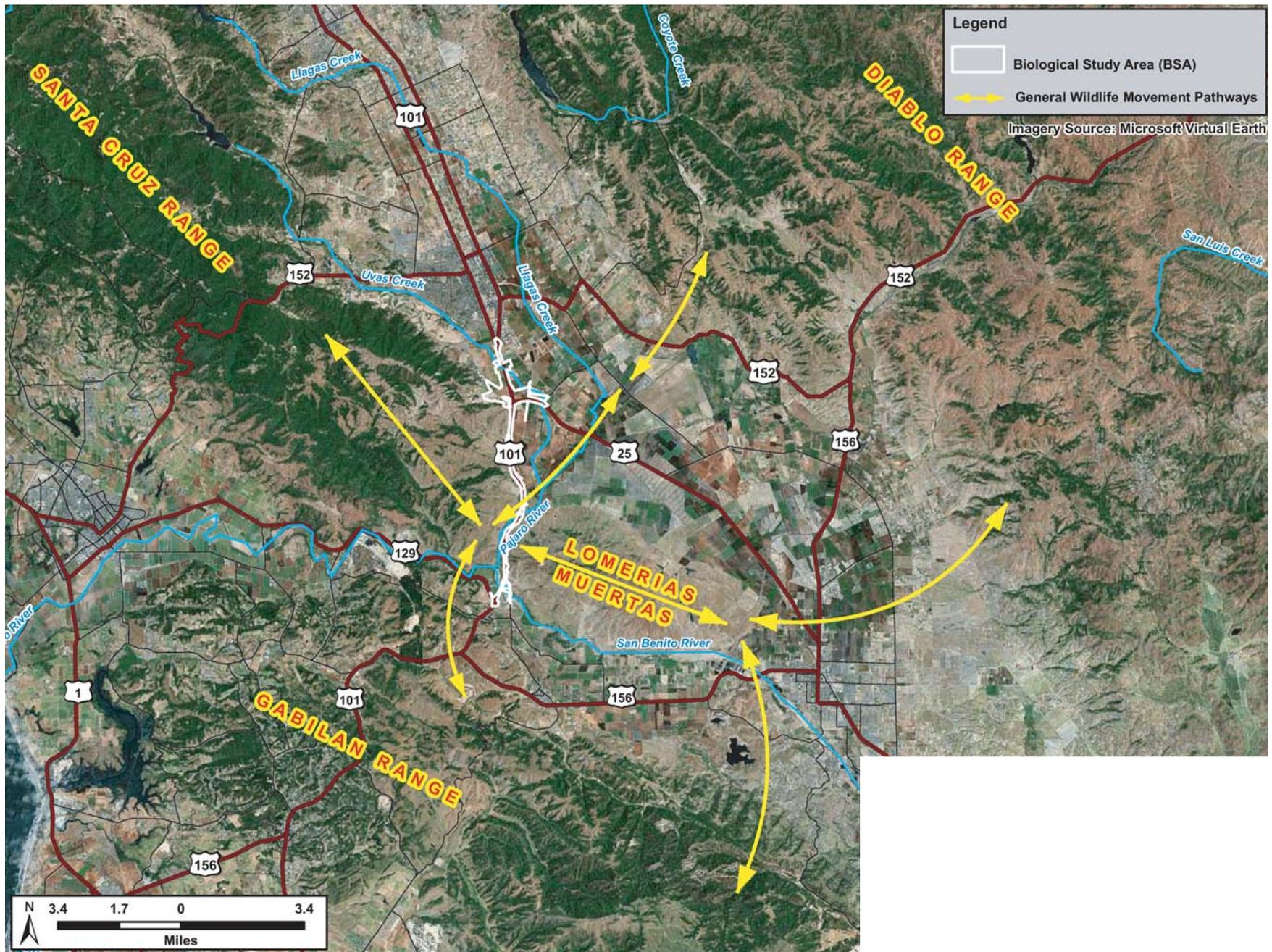
Oak woodland habitat occupies approximately 8.76 acres in the BSA, most of which occurs as relatively small and fragmented patches of mature trees dominated by California coast live oak and valley oak (Figures 20b – 20e) or of individual trees of the same species. The majority of the oak woodland habitat occurring within the BSA is located within Santa Clara County (8.7 acres), with only 0.06 acres of oak woodland habitat occurring in San Benito County. However, there are areas of more substantial and higher quality oak woodland habitat immediately south of Gavilan Creek (outside of the BSA) that support a dense understory shrub layer of vegetation that includes coyote brush, poison oak, California coffeeberry, Himalayan blackberry, and California rose (Figure 20e).

2.17.2.3 Wildlife Movement Corridors

The project is located in an area of importance to habitat connectivity and wildlife movement. An assessment of potential landscape linkages, observations of road-killed animals, and four months of monitoring of U.S. 101 undercrossings with motion-sensor cameras provided information on existing wildlife use of the roadway and undercrossings, and the likely effects of the project on wildlife movement.

Overview

The Santa Cruz Mountains to the north/northwest, the Gabilan Range to the south, and the Diablo Range across the Santa Clara Valley to the east provide vast areas of natural habitat that support sizeable populations of common and special-status plant and animal species. Exchange of individuals and genes among the populations in these three ranges is important to the long-term maintenance of populations and genetic diversity in these three ranges and in central California as a whole. Due to the scarcity of urban development and other barriers to wildlife dispersal, natural habitats in southern Santa Clara County and northern San Benito County provide landscape linkages between the Santa Cruz Mountains and Diablo Range, and between these mountain ranges and the Gabilan Range. Figure 21 illustrates these landscape linkages.



POTENTIAL WILDLIFE MOVEMENT PATHWAYS

FIGURE 21

For birds and larger, more mobile mammals such as the black-tailed deer, mountain lion, and coyote, it may be possible for individuals to move among these mountain ranges. Such movements may occur in brief dispersal events (e.g., a juvenile mountain lion dispersing from its natal area to establish its own home range) or over a period of weeks, months, or years. For smaller, less mobile species such as reptiles, amphibians, and small mammals, such “dispersal” can occur over many generations as genes are exchanged throughout a population, as long as habitat connectivity across the valleys separating these mountain ranges is maintained.

Ideally, such connectivity would consist of broad, continuous areas of “core” habitat that are large enough to support multiple home ranges of each species. However, given the presence of roads, agricultural habitats, and low-density development within the habitat mosaic of the project area, such continuous core habitat is currently lacking for many species. Sub-optimal habitat (e.g., narrow corridors or “stepping stones” of suitable habitat separated by less suitable areas) linking areas of core habitat are suitable for movement as long as they provide sufficient resources (e.g., cover, food, and water) to allow for dispersal and lack significant impediments to dispersal.

Assessment of Existing Linkages and Impediments

Within the immediate vicinity of the project, there are two main areas of habitat connectivity important to wildlife. Immediately west of the project area, the Santa Cruz Mountains narrow from north to south, ending at the Pajaro River Valley and SR 129. South of SR 129 and the Pajaro River, the Gabilan Range begins. Although the river and SR 129 (as well as low density development) both represent impediments to wildlife movement, there are many opportunities for wildlife to move across these two impediments. Larger animals can easily move between the two ranges in this area, and this linkage is considered very important for the movement of mountain lions. Also, there is sufficient core habitat for many of the smaller, less mobile species that genetic exchange can occur over a series of generations. Because this primary linkage between the Santa Cruz Mountains and the Gabilan Range lies entirely west of the project area, it will not be adversely affected by the proposed project.

The second important landscape linkage, which is bisected by U.S. 101, lies between the Santa Cruz Mountains to the west and the Diablo Range to the east. Unlike the Santa Cruz and Gabilan Ranges, which are contiguous, the distance between the eastern foothills of the Santa Cruz Mountains immediately west of U.S. 101 and the western foothills of the Diablo Range varies from approximately four miles at U.S. 101 and SR 25 to six to seven miles at U.S. 101 and the Pajaro River. Due to the cover and habitat connectivity provided by riparian vegetation along the Pajaro River itself; the cover provided by riparian vegetation along tributaries such as Carnadero and Llagas Creek; and relatively natural habitat (e.g., fallow fields and ranchlands rather than heavily cultivated agricultural habitats in many areas), the Pajaro River connection is likely very important in maintaining this linkage.

A smaller-scale and more local, but still important area of potential wildlife movement is provided by the proximity of the southern Santa Cruz Mountains and the Lomerias Muertas (i.e., the hills east of U.S. 101 between the Pajaro and San Benito Rivers). The foothills of the Santa Cruz Mountains are separated

from the Lomerias Muertas by the Pajaro River, a narrow strip of mostly agricultural land, U.S. 101, Betabel Road, and Y Road. From U.S. 101, the Lomerias Muertas stretch to the southeast. As indicated on Figure 21, these hills provide potentially important secondary linkages between the Santa Cruz Mountains and the Gabilan Range, and between the Gabilan Range and the Diablo Range. For a number of species, including the California red-legged frog, California tiger salamander, and grassland species such as the American badger, the Lomerias Muertas also provide a vast area of core habitat that can serve as the source or recipient of dispersing individuals and genes.

Although larger mammals may be capable of traversing the median barrier and undercrossings are available and used by mammals and fish, U.S. 101 does restrict surface movements of many species, particularly where continuous concrete median barriers are present. Therefore, U.S. 101 is likely a substantial impediment to the movement of wildlife. Due to development, cultivation, a fairly high chain-link fence along the highway north of Carnadero Creek, and a concrete median barrier between Carnadero Creek and SR 25, the area north of SR 25 is likely not very permeable for regional wildlife movements. Despite the presence of high-quality habitat west of U.S. 101, the area from SR 25 south to Tar Creek is likewise not as critical a wildlife crossing area given the inhospitable character of the heavily cultivated fields to the east, but should not be discounted altogether. Overall, the most successful and ecologically significant movement by wildlife across U.S. 101 occurs from Tar Creek south to the San Benito River. However, because most of this segment contains a median barrier, successful movement by most species in this segment likely relies on the use of the existing undercrossings.

2.17.2.4 *Fish Passage*

Fish are able to move through the project area along the Pajaro River, San Benito River, Carnadero Creek, Tar Creek, and San Juan Creek, and (at least a short distance, due to low flow) up Tick Creek. The ability of these species to move through the project area depends on flow conditions rather than on infrastructure associated with U.S. 101. Although piers for the Carnadero Creek bridges are located within the middle of the channel, piers for other bridges are located outside of, or right at the edges of, the stream channels. Fish passage assessments performed for the existing bridges and culverts did not identify any substantial impediments to fish movement within the BSA.

2.17.3 Environmental Consequences of the Build Alternative

2.17.3.1 *Impacts to Riparian Habitat*

The project has been designed to avoid and minimize impacts to riparian habitat to the greatest extent feasible. Given the number of creek and river crossings within the project segment, protection of these resources was accorded a high priority during design. As an example, temporary construction impacts will be limited to 10 feet beyond the edge of each new or widened bridge, beyond which access will be prohibited by the use of temporary construction fencing.

The above statement notwithstanding, construction of the project will result in the permanent loss of eight acres of riparian habitat. Such impacts will occur due to the construction of new bridges, widened bridges, new culverts, and lengthened culverts at the creeks and rivers crossed by the project. In addition to this permanent impact of eight acres, seven acres of riparian habitat will be temporarily impacted by construction activities. These impacts will be the same under Design Option A and Design Option B.

Riparian habitat impacts will include the loss of approximately 890 linear feet of shaded riverine aquatic (SRA) habitat on the San Benito and Pajaro Rivers and Carnadero Creek. The loss of SRA habitat will result in the loss of some shading of these creeks, which could have a minor impact on habitat quality for aquatic species such as steelhead, which thrive in cooler streams. The loss of SRA habitat will also reduce the input of organic matter and coarse woody debris into these streams, thus affecting the aquatic food chain and aquatic habitat structure, respectively.

Impact NATCOM-1: The project will result in the permanent loss of eight acres of riparian habitat and temporary impacts to seven acres of riparian habitat. The project will also impact 890 linear feet of SRA habitat. **[Less-than-Significant with Mitigation Listed in Section 2.17.5]**

2.17.3.2 *Impacts to Oak Woodland Habitat*

As part of the project, a new frontage road will be constructed south of Gavilan Creek. This frontage road will permanently impact 2.0 and 1.5 acres of oak woodland habitat under Design Option A and Design Option B, respectively. The loss of oak woodland habitat will result in a loss of breeding, foraging, and resting opportunities for several common and special-status wildlife species.

The project will not result in any temporary impacts to oak woodland habitat.

Impact NATCOM-2: The project will permanently impact 2.0 and 1.5 acres of oak woodland habitat under Design Option A and Design Option B, respectively. **[Less-than-Significant with Mitigation Listed in Section 2.17.5]**

2.17.3.3 *Impacts to Wildlife Movement Corridors*

The proposed project will provide for an increase in vehicle capacity. In addition, by increasing the number of lanes and improving interchanges, particularly at SR 25, the project will result in an increase in the speed of traffic on U.S. 101 and the segment of SR 25 near U.S. 101 during peak commute periods. The project will also increase the number of traffic lanes that individual animals would have to cross in order to safely cross these roads. Furthermore, the project includes the construction of a median barrier along portions of U.S. 101 where no such barrier currently exists. Collectively, the increased width of the roadway, increased speed of traffic, and presence of a median barrier will increase road mortality and reduce the ability of some animals to move across U.S. 101.

Culverts and bridges providing wildlife undercrossings currently exist in the project area. Of these, the most valuable wildlife undercrossings are located at the bridges over the larger streams. These are expected to maintain their value to wildlife after construction. Though the bridges at these locations will be slightly wider, the use of these undercrossings by wildlife is not expected to be reduced. The increase in length and corresponding decrease in openness ratios of the culverts under U.S. 101 may discourage some individual animals from moving through these culverts. However, given that numerous animals are currently using these culverts for movement, despite their length (more than 900 feet in the case of the culvert immediately south of the Betabel Road/Y Road interchange) and the dark conditions inside these existing culverts, an increase in their length is expected to have little effect on wildlife use. Also, the use of grates on the road shoulders at the ends of these culvert extensions, where feasible, will allow more light into the culverts, encouraging their use by wildlife.

Wildlife is expected to move under the new Betabel Road bridge over the Pajaro River (or over the road itself), and under the footbridge that will span the San Benito River at Y Road. Therefore, these new roads will provide only minor impediments to wildlife movement.

However, the new segment of frontage road south of Castro Valley Road (under Design Option A), or the new extension of Santa Teresa Boulevard (under Design Option B), will pass near a potential California tiger salamander and California red-legged frog breeding pond. These proposed new roadways have the potential to hinder movement, causing mortality of and/or reduced immigration and emigration by both amphibians. See Sections 2.21.3 and 2.21.5 for a discussion of this impact and the corresponding avoidance measures that are included as part of the project.

Impact NATCOM-3: The project will result in an adverse effect on wildlife movement by increasing road mortality and the ability of some animals to move across U.S. 101. [**Less-than-Significant with Mitigation Listed in Section 2.17.5**]

2.17.3.4 *Impacts to Fish Passage*

The project has been designed to maintain stream continuity and fish (and other aquatic organism) passage by avoiding placing new obstacles within stream channels. Although bridge piers within Carnadero Creek will be enlarged somewhat longitudinally (i.e., along the length of the stream), they will not substantially reduce the ability of aquatic organisms to move along the stream.

Impact NATCOM-4: Construction of the proposed project will not create permanent barriers to the passage of fish. [**No Impact**]

2.17.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. There would be no modification to existing facilities or to the existing environment. There would, therefore, be no impacts to any natural communities.

2.17.5 Avoidance, Minimization, and/or Mitigation Measures

**Santa Clara Valley Habitat Conservation Plan/
Natural Community Conservation Plan⁴³**

A Habitat Conservation Plan (HCP) is a document that supports issuance of an incidental take permit consistent with the federal Endangered Species Act. A Natural Community Conservation Plan (NCCP) is the state counterpart to the federal HCP and provides a means of complying with the California Endangered Species Act. The NCCP goes further than the HCP in that it not only addresses mitigation of development impacts, but also includes actions necessary to promote the long-term conservation of species at a regional scale. Thus, the State requirements go above and beyond the federal mitigation requirements. The Santa Clara Valley HCP/NCCP will allow local agencies to approve projects in endangered species' habitat in exchange for identifying a maximum level of impacts permitted under the HCP/NCCP and mitigation strategies based on a coordinated regional plan for conserving natural communities and endangered species.

HCPs and NCCPs are tools for the protection of endangered species and represent an important integration of land-use planning and habitat conservation. The plans provide an efficient process for protecting the environment and processing applications for local public and private projects that may affect endangered species. Without such plans, project proponents, including local governments, must evaluate projects individually in consultation with a variety of federal and state regulators to mitigate for habitat loss, which is a lengthy process that can cost both parties considerable time and money. In addition, the absence of these plans also does less to protect wildlife because project-specific mitigation measures result in land being set aside on a piecemeal basis, resulting in fragmented habitats that are less ecologically viable and more difficult to manage.

The Santa Clara Valley HCP/NCCP ~~is currently under development~~ was adopted in late 2012/early 2013 by six "local partners" (VTA, County of Santa Clara, Santa Clara Valley Water District, and the Cities of San Jose, Morgan Hill, and Gilroy), in cooperation with the California Department of Fish & Wildlife (CDFW) and the U.S. Fish & Wildlife Service (USFWS). The Santa Clara Valley HCP/NCCP covers approximately 520,000 acres, primarily within southern Santa Clara County, and several special status plant and animal species (called "covered species" in the HCP/NCCP). The current schedule anticipates that the ~~approval~~ implementation of the HCP/NCCP will occur in late 2013.

The proposed project is a "covered" activity, meaning that it is a project whose impacts are described and accounted for in the HCP/NCCP. For such projects, a variety of development-based fees are paid to the HCP/NCCP program to fund mitigation that will offset take of covered species, covered species habitat, and loss of other biological values. These one-time fees pay for the full cost of mitigating project effects on covered species and natural communities. Once paid, project proponents do not need

⁴³Much of the information and text in this overview is excerpted from the official website for the Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan: www.scv-habitatplan.org.

to implement their own mitigation to satisfy state and federal endangered species laws. Therefore, it is the intent of this project to mitigate for impacts to biological resources using the HCP/NCCP to the greatest extent feasible. The discussion of mitigation, below, as well as in subsequent sections, follows this approach.

While it is the intent to mitigate for impacts to endangered species and their habitat due to the entire project using the Santa Clara Valley HCP/NCCP, it is recognized that the southerly portion of the project segment extends approximately 2.5 miles into San Benito County, an area just outside the HCP/NCCP boundaries. However, based on coordination to date, it is anticipated that approval for mitigating the project's impacts in San Benito County using the Santa Clara Valley HCP/NCCP will be granted by the regulatory agencies.

In addition, while approval of the HCP/NCCP is likely, there is no guarantee that it will be approved. Therefore, if mitigation through the HCP/NCCP is not feasible for impacts in one or both counties, on-site or off-site habitat restoration will be implemented, as described below.

2.17.5.1 Mitigation for Impacts to Riparian Habitat

The project includes the following mitigation, which will reduce the above-described impacts to riparian habitat to a less-than-significant level:

MM-NATCOM-1.1: The project will pay development fees to the Santa Clara Valley HCP/NCCP for impacts to riparian habitat. For more information on the HCP/NCCP, please see Section 2.17.5.

MM-NATCOM-1.2: If MM-NATCOM-1.1 turns out to be infeasible for some or all of the project, permanent impacts to riparian habitat will be mitigated by creating/restoring riparian habitat at a 3:1 ratio, on an acreage basis; temporary impacts will be mitigated at a 2:1 ratio, on an acreage basis; and SRA impacts will be mitigated at a 2:1 basis ratio, on a linear footage basis. These ratios are higher than those given in the HCP/NCCP as they are for restoration/creation only; there is no preservation component.

A search for appropriate locations for this mitigation revealed that there are numerous nearby locations where riparian habitat could be created or restored. These areas include the proposed staging area along the San Benito River, as well as numerous agricultural parcels along the Pajaro River corridor. Off-site SRA mitigation opportunities are also present on adjacent properties along Tar Creek." The Pajaro River system is large, important, and impaired in many areas, and there are riparian and wetland restoration opportunities along the river, as well as Tequisquita Slough. Restoration of riparian habitat is needed on an easement property adjacent to The Nature Conservancy's property near the

Pajaro River. The Uvas watershed, a tributary to the Pajaro River, has a steelhead run, and several segments are in need of restoration. Millers Canal, San Felipe Lake, and Pacheco Creek are identified as steelhead bearing streams in the National Marine Fisheries Service steelhead recovery plan, and have opportunity for restoration. There are many in-kind or out-of-kind, on-site or off-site, opportunities. If desired, numerous old and poorly functioning fish ladders in the Uvas system could be replaced, with riparian restoration as a component of a project.

As a potential alternative to the project creating/restoring riparian habitat at a nearby location, this measure could be satisfied, in whole or part, through the purchase of riparian mitigation credits from an approved mitigation bank. However, at the time this document was prepared, there were no approved mitigation banks offering riparian mitigation credits for projects located in the southern Santa Clara County/northern San Benito County area. If such banks become available and the project decides to purchase credits, the mitigation ratios given above for the creation/restoration of riparian habitat will apply.

If on-site or off-site riparian habitat creation or restoration is necessary, a restoration ecologist will develop a Riparian Habitat Mitigation and Monitoring Plan (HMMP), which shall contain the following components (or as otherwise modified by regulatory agency permitting conditions):

1. Summary of habitat impacts and proposed mitigation ratios.
2. Goal of the restoration to achieve no net loss of habitat functions and values.
3. Location of mitigation site(s) and description of existing site conditions.
4. Mitigation design:
 - Existing and proposed site hydrology
 - Grading plan if appropriate, including bank stabilization or other site stabilization features
 - Soil amendments and other site preparation elements as appropriate
 - Planting plan
 - Irrigation and maintenance plan
 - Remedial measures/adaptive management, etc.
5. Monitoring plan (including performance and final success criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.). At a minimum, success criteria will include quantifiable measurements of vegetation type (e.g., dominance by native riparian species) and extent appropriate for the restoration location, and provision of ecological functions and values equal to or exceeding those in the riparian habitats that are impacted.
6. Contingency plan for mitigation elements that do not meet performance or final success criteria.

At least five years of monitoring shall be conducted to document whether the success criteria are achieved, and to identify any remedial actions that must be taken if the identified success criteria are not met.

[**Note:** MM-NATCOM-1.2 will be implemented only if MM-NATCOM-1.1 is determined to be partially or completely infeasible.]

2.17.5.2 Mitigation for Impacts to Oak Woodland Habitat

The project includes the following mitigation, which will reduce the above-described impacts to oak woodland habitat to a less-than-significant level:

MM-NATCOM-2.1: The project will pay development fees to the Santa Clara Valley HCP/NCCP for impacts to oak woodland habitat. For more information on the HCP/NCCP, please see Section 2.17.5.

MM-NATCOM-2.2: If MM-NATCOM-2.1 turns out to be infeasible, impacts to oak woodland habitat will be mitigated by creating/restoring oak woodland habitat at a 2:1 ratio. A search for appropriate locations for this mitigation revealed that there are numerous nearby locations where oak woodland habitat could be created or restored.

[**Note:** MM-NATCOM-2.2 will be implemented only if MM-NATCOM-2.1 is determined to be infeasible.]

If project-specific oak woodland restoration is necessary, a restoration ecologist will develop an Oak Woodland HMMP. This plan will contain the same types of information described in MM-NATCOM-1.2, but will focus on oak woodlands instead of riparian habitat. At a minimum, success criteria will include quantifiable measurements of oak survival and abundance. At least five years of monitoring will be conducted to document whether the success criteria are achieved, and to identify any remedial actions that must be taken if the identified success criteria are not met.

2.17.5.3 Mitigation for Impacts to Wildlife Movement Corridors

Recognizing the importance of wildlife movement in the project area, the project's design team and biologists undertook extensive coordination with personnel from the CDFW to 1) determine those locations along the U.S. 101 corridor where wildlife movement was most critical, and 2) determine the best options for maintaining or improving habitat connectivity in light of the project. This coordination focused on improving connectivity in the most important crossing locations while reducing mortality in areas where even successful wildlife crossings may be unlikely to result in a substantial population

benefit. Two strategies emerged, one for the project segment north of Tar Creek, and the other for the project segment south of Tar Creek.

For the project segment north of Tar Creek, the approach to allowing wildlife movement will be to maintain the ability of wildlife to access the highway surface, and to cross the median, that currently exists. For human safety reasons, wildlife access to U.S. 101 will not be enhanced, but to maintain habitat connectivity, the existing fencing and median designs will remain in place. For example, between Tar Creek and SR 25, standard fencing⁴⁴ will be used along the highway, and a three-beam median barrier will be used. North of SR 25, where wildlife movement is not very important to regional connectivity, a continuous concrete median barrier (which is currently present from SR 25 to Carnadero Creek) will be used.

For the project segment south of Tar Creek, the approach to allowing wildlife movement will be to improve connectivity across U.S. 101. Most important is the segment between Tar Creek and the San Benito River since this area represents the juncture of the Santa Cruz Mountain foothills and the Lomerias Muertas. Currently, the large undercrossings at Tar Creek, the Pajaro River, and the San Benito River receive heavy wildlife use. In addition, several culverts along this segment are used by fairly large numbers of mammals. However, the existing median barrier prevents many mammals from successfully making surface crossings on the road, and a disproportionately large number of roadkills was observed in this segment during opportunistic surveys.

In the context of the above-stated strategies, the following avoidance, minimization, and mitigation measures are included in the project for the purposes of 1) reducing wildlife movement impacts of the project to a less-than-significant level, and 2) improving wildlife connectivity across the U.S. 101 corridor.

MM-NATCOM-3.1: North of Tar Creek, the project will maintain the existing standard fencing and three-beam median barrier.

MM-NATCOM-3.2: New box culverts will be installed under U.S. 101 north of SR 25 for the purpose of accommodating flood flows; see MM-HYDRO 1.1 and MM-HYDRO-1.2. Although wildlife crossings are not substantial in this area, these culverts will be beneficial to wildlife movement across the U.S. 101 corridor because they will be dry year-round in most years.

⁴⁴“Standard Fencing” may include wire mesh or barbed-wire fencing. This type of fencing is not expected to inhibit most wildlife movement and is considered permeable. This type of fencing is currently present along most of the project alignment, and thus maintaining the presence of standard fencing is not expected to inhibit wildlife movement, relative to existing conditions. Standard fencing is also considered relatively permeable because many wildlife species can jump over or cross through/under this fencing.

- MM-NATCOM-3.3:** A new culvert under U.S. 101 will be installed between Tar Creek and the Pajaro River. The height of the culvert will be at least 4 feet.
- MM-NATCOM-3.4:** The existing, 90-inch, corrugated metal pipe (CMP) under U.S. 101 south of the Pajaro River will be replaced by a box culvert to maintain or increase its "openness ratio" (a measure of how "open" a culvert appears to animals, taking into account its height, width, and length) as this culvert is lengthened. This modification will at least maintain, if not enhance, the usefulness of this culvert to wildlife crossing under U.S. 101.
- MM-NATCOM-3.5:** The existing, 54-inch, reinforced concrete pipe (RCP) under U.S. 101 just north of the Betabel Road/Y Road interchange will be replaced with a box culvert at least 90 inches in height. Increasing the height and width of this culvert will increase its openness ratio considerably, thereby enhancing its attractiveness to wildlife attempting to cross U.S. 101.
- MM-NATCOM-3.6:** Wildlife fencing⁴⁵ will be installed along U.S. 101 from Tar Creek south to the San Benito River to minimize the potential for wildlife to access the highway's surface. The wildlife fencing will extend 0.25 miles north of Tar Creek and south of the San Benito River to minimize the potential for wildlife to move around the fence and onto the roadway. Wildlife "jump-outs" or one-way gates will be installed in several locations within this segment so that animals that are able to find a way onto the highway will be able to exit.
- MM-NATCOM-3.7:** Where feasible, designs for the culverts that will be lengthened by the project will include metal grating in the shoulder of the road surface. This grating will increase lighting within the culverts, offsetting the increased darkness resulting from lengthening the culverts.
- MM-NATCOM-3.8:** At several existing culverts under U.S. 101, vegetation immediately in front of the culverts may block the culverts from the view of dispersing animals and provide cover in which predators may hide. Although such cover may benefit animals at times, the function of the culverts (from a wildlife perspective) is to move quickly through the corridor. Therefore, in some areas, vegetation will be cleared immediately in front of culverts to make them more conspicuous and attractive and to reduce cover in which predators may hide.

⁴⁵“Wildlife Fencing” consists of small-gauge mesh at the base (to reduce the potential for mammals larger than mice and voles to pass through) and barbed wire at the top for a height of at least 7 feet. Wildlife fencing is used to guide wildlife to undercrossings for safe movement across the highway.

MM-NATCOM-3.9: The concrete median barriers south of Tar Creek will be retrofitted to incorporate wildlife passageways (Caltrans standard "Type S, M, and/or L") to facilitate crossings by animals that are able to cross over or through the wildlife fencing in these areas.

MM-NATCOM-3.10: Following completion of construction, monitoring will be performed to ensure that MM-NATCOM-3.1 through MM-NATCOM-3.6, and MM-NATCOM-3.9, have been implemented; to document that grating has been incorporated into the road shoulder per MM-NATCOM-3.7 where feasible; and to document that vegetation potentially concealing undercrossings has been cleared as appropriate to make inconspicuous undercrossings more evident to wildlife per MM-NATCOM-3.8.

In addition, monitoring will occur at the Tar Creek, Pajaro River, and San Benito River bridges, as well as at the two culverts that are to be upgraded in size between the Pajaro River and the Betabel Road/Y Road interchange, to verify continued use by mammals moving from one side of U.S. 101 to the other. Such monitoring may be performed via remote cameras, track plates, observation of mammal tracks in existing sediment, or other means to verify use. Success will be measured by verification of use of each of these undercrossings by mammals. If verification of use of all five of these undercrossings by mammals cannot be provided within six months following the initiation of monitoring, VTA will consult with Caltrans and the CDFW regarding further monitoring.

2.18 WETLANDS AND OTHER WATERS

2.18.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act [CWA (33 U.S.C. 1344)] is the primary law regulating wetlands and surface waters. The CWA regulates the discharge of dredged or fill material into waters of the United States (U.S.), including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

USACE issues two types of 404 permits: Standard and General permits. Nationwide permits, a type of General permit, are issued to authorize a variety of minor project activities with no more than minimal effects. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 CFR Part 230), and whether permit approval is in the public interest. The 404 (b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Wildlife (CDFW), the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications for impacts to wetlands and waters in compliance with Section 401 of the CWA. Please see Section 2.10, *Water Quality*, for additional details.

2.18.2 Affected Environment

As shown in Table 34, seasonal wetland habitat occupies approximately 4.32 acres of the BSA within several of the unnamed intermittent drainages and agricultural irrigation ditches as isolated patches of wetlands. Of this total, 0.07 acres occurs in San Benito County and 4.25 acres occurs in Santa Clara

County. These wetlands receive water from seasonal irrigation runoff, native springs, adjacent livestock ponds, or culverts and storm drains associated with U.S. 101 (Figures 20a – 20f).

Freshwater emergent wetland habitat occurs within approximately 0.46 acres of the BSA in two separate locations along the outer bed and lower banks of the Pajaro River and San Benito River (Figures 20a – 20c). The high-quality freshwater emergent wetlands are dominated by tall, dense, perennial stands of broad-leaved cattail, acute bulrush, and bur-reed. These patches of wetland vegetation expand considerably in area and size during the spring and summer months due to a continuous supply of water and adequate sunlight.

Aquatic habitat occurs within approximately 8.24 acres in the BSA and includes all of the water within the beds of the rivers, creeks, and intermittent drainages (Figures 20a – 20f). Of this total, 1.65 acres occurs in San Benito County and 6.59 acres occurs in Santa Clara County. Aquatic habitat also includes the agricultural irrigation ditches and culvert undercrossings beneath U.S. 101 and SR 25. The majority of the aquatic habitat on-site does not support aquatic vegetation as it is either perennial and deep, or seasonally dry. A stock pond located south of Castro Valley Road is also within the BSA.

2.18.3 Environmental Consequences of the Build Alternative

The project will result in the removal of wetland and aquatic habitat due to relocation of bridge abutments and piers, addition of new bridge abutments and piers, and shifting of road alignments and associated fill. In Santa Clara County, these actions will result in permanent impacts to 1.49 acres of aquatic habitats, 0.05 acres of freshwater emergent wetlands, and 1.12 acres of seasonal wetlands under Design Option A, or 1.56 acres of aquatic habitats, 0.05 acres of freshwater emergent wetlands, and 1.29 acres of seasonal wetlands under Design Option B. In San Benito County, under either option, these actions will permanently impact 0.25 acres of aquatic habitats, 0.04 acres of freshwater emergent wetlands, and 0.03 acres of seasonal wetlands. The loss of wetland and aquatic habitats will result in a loss of breeding, foraging, resting, rearing, and migration opportunities for numerous common and special-status wildlife species.

Temporary impacts to wetland and aquatic habitat will result from operating equipment in and immediately adjacent to these areas and removal of herbaceous vegetation, but will not result in any placement of fill within these habitat areas. Temporary impacts to these habitats will be avoided whenever possible. In Santa Clara County, these actions will result in temporary impacts to 0.74 acres of aquatic habitats, 0.01 acres of freshwater emergent wetlands, and 0.26 acres of seasonal wetlands under Design Option A, or 0.74 acres of aquatic habitats, 0.01 acres of freshwater emergent wetlands, and 0.46 acres of seasonal wetlands under Design Option B. In San Benito County, under either option, these actions will result in temporary impacts to 0.24 acres of aquatic habitats, 0.05 acres of freshwater emergent wetlands, and 0.03 acres of seasonal wetlands.

Impact WET-1: The project will result in the permanent loss of up to 3.2 acres of wetlands and aquatic habitat and temporary impacts of up to 1.5 acres of wetlands and aquatic habitat. **[Less-than-Significant with Mitigation Listed in Section 2.18.5]**

2.18.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. There would be no modification to existing facilities or to the existing environment. There would, therefore, be no impacts to any wetlands or aquatic habitat.

2.18.5 Avoidance, Minimization, and/or Mitigation Measures

The project includes the following mitigation, which will reduce the above-described impacts to wetlands and aquatic habitat to a less-than-significant level:

MM-WET-1.1: The project will pay development fees to the Santa Clara Valley HCP/NCCP for impacts to wetlands and aquatic habitat. For more information on the HCP/NCCP, please see Section 2.17.5.

MM-WET-1.2: If MM-WET-1.1 turns out to be infeasible for some or all of the project, permanent impacts to wetlands and aquatic habitat will be mitigated by the purchase of credits from the Pajaro River Mitigation Bank that services both Santa Clara and San Benito Counties. If credits are no longer available at this bank, and if there are no other approved mitigation banks whose service area includes the project area, then mitigation will occur through on-site or off-site creation of wetland and aquatic habitat at a 2:1 ratio, on an acreage basis. A search for appropriate locations for this mitigation revealed that there are numerous nearby locations where wetlands and aquatic habitat could be created or expanded.

[**Note:** MM-WET-1.2 will be implemented only if MM-WET-1.1 is determined to be partially or completely infeasible.]

If project-specific wetland creation or restoration is necessary, a restoration ecologist will develop an HMMP for wetlands and other waters. This plan will contain the same types of information described in MM-NATCOM-1.2, but will focus on wetlands and other waters instead of riparian habitat. At a minimum, success criteria will include quantifiable measurements of vegetation type (e.g., dominance by native hydrophytes) and extent appropriate for the restoration location, and provision of ecological functions and values equal to or exceeding

those in the wetlands and other waters that are impacted. At least five years of monitoring shall be conducted to document whether the success criteria are achieved, and to identify any remedial actions that must be taken if the identified success criteria are not met.

MM-WET-1.3: The temporary wetland and aquatic habitat impacts will be mitigated at a 1:1 acreage ratio through the restoration of pre-construction grades, hydrology, and soil conditions at the location of the impact to wetland and aquatic areas temporarily disturbed during construction. Wetland vegetation, structure, and function are expected to regenerate naturally following the restoration of grades, hydrology, and soils. To ensure that restoration of temporarily impacted areas is successful, a restoration plan will be developed for temporarily impacted wetlands and aquatic habitats. This plan will include a discussion or depiction of grading to restore wetland hydrology; soil amendments; planting/seeding or justification regarding why planting or seeding is unnecessary (e.g., in the event that a wetland vegetation seed source is present in immediately adjacent areas); monitoring; and success criteria, as necessary.

2.19 PLANT SPECIES

2.19.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and the CDFW share regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see Section 2.21, *Threatened and Endangered Species*, for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including CDFW fully protected species and species of special concern, USFWS candidate species, and non-listed California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900-1913, and CEQA, Public Resources Code, Sections 2100-21177.

2.19.2 Affected Environment

An initial list of 32 special-status plants were identified as occurring (either currently or historically) within the general area in a wide variety of different habitat types (defined by the Chittenden United States Geological Survey [USGS] quadrangle map in which the project occurs, the eight adjacent quadrangle maps, and the Santa Clara County/San Benito County search area).⁴⁶ Of the 32 species, 23 were dismissed outright due to a total lack of habitat (such as serpentine soils, alkaline soils, etc.) for these species within the project's BSA. The remaining 9 species were further considered for their occurrence because suitable habitat was observed within the BSA or because the database noted an historical occurrence of the species within the BSA. Table 35 lists these species, as well as the results of the additional study that was undertaken to determine their presence or absence within the BSA. For all 9 species, the additional study included protocol-level, blooming period surveys during 2007 and 2008 by a botanist. Informal surveys were also conducted during numerous site visits.

As summarized in Table 35, none of the nine special-status plant species was detected during multiple focused surveys conducted during the appropriate blooming period for each plant. These special-status plant species are therefore considered absent from the BSA and further surveys are not warranted.

2.19.3 Environmental Consequences of the Build Alternative

Since no special-status plant species are present within the project area, the project will not impact any special-status plant species.

Impact PLNT-1: The project will not impact any special-status plant species. [No Impact]

2.19.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. There would be no modification to existing facilities or to the existing environment. There would, therefore, be no impacts to any special status plant species.

2.19.5 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

⁴⁶This excludes those plant species listed under the Federal Endangered Species Act and/or the California Endangered Species Act, as those species are discussed separately in Section 2.21, *Threatened and Endangered Species*.

TABLE 35

ASSESSMENT OF SPECIAL-STATUS PLANT SPECIES FOR THEIR POTENTIAL TO OCCUR WITHIN THE PROJECT'S BIOLOGICAL STUDY AREA

Species	Habitat	Conclusion	Rationale
Bent-flowered fiddleneck (<i>Amsinckia lunaris</i>)	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. CNDDDB records document a single occurrence for this species in the adjacent USGS Laurel Quadrangle at Polo Ranch in Scotts Valley.	habitat present; species absent	Although low-quality valley and foothill grassland habitat and limited oak woodland habitat occurs within the BSA, due to degraded site conditions, this species is unlikely to occur within the BSA. Plant was not detected during surveys conducted during the March - June blooming period.
Big-scale balsamroot (<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>)	Chaparral, cismontane woodland, valley and foothill grassland (sometimes on serpentine). No CNDDDB records occur in the vicinity of the BSA for this species.	habitat present; species absent	Low-quality valley and foothill grassland habitat and limited oak woodland habitat occur within the BSA. However, this habitat is of poor quality and this species is unlikely to occur within the BSA. Plant was not detected during surveys conducted during the March - June blooming period.
Round-leaved filaree (<i>California macrophyllum</i>)	Cismontane woodland, Valley and foothill grassland (clay). CNDDDB records document a single occurrence for this species in the adjacent USGS Hollister Quadrangle near San Justo Reservoir.	habitat present; species absent	Low-quality valley and foothill grassland habitat and limited oak woodland habitat occur within the BSA. However, this habitat is of poor quality and this species is unlikely to occur within the BSA. Plant was not detected during surveys conducted during the March - May blooming period.
Fragrant fritillary (<i>Fritillaria liliacea</i>)	Valley and foothill grassland, coastal scrub, coastal prairie (often on serpentine). CNDDDB records document a single occurrence for this species in the adjacent USGS Prunedale Quadrangle one mile south of the City of Aromas.	habitat present; species absent	Low-quality valley and foothill grassland habitat and limited oak woodland habitat occur within the BSA. However, this habitat is of poor quality and this species is unlikely to occur within the BSA. In addition, no serpentine soils occur on-site. This plant was not detected during surveys conducted during the February - April blooming period.
Loma Prieta hoita (<i>Hoita strobilina</i>)	Riparian woodland, cismontane woodland, riparian woodland (serpentine and mesic sites). CNDDDB records document a single occurrence for this species in the BSA Chittenden Quadrangle), and two occurrences in the adjacent Gilroy & Loma Prieta quadrangles.	habitat present; species absent	High-quality riparian forest habitat and limited oak woodland habitat occur within the BSA. However, this species was not detected during surveys conducted in the May - October blooming period.

TABLE 35 [continued]

Species	Habitat	Conclusion	Rationale
Santa Cruz tarplant (<i>Holocarpha macradenia</i>)	Valley and foothill grassland, coastal prairie (sandy soil or sandy clay). CNDDDB records document numerous occurrences for this species in the adjacent USGS Watsonville East, Prunedale, Felton & Laurel quadrangles. The nearest occurrence to the BSA is near the Santa Cruz County Fairgrounds.	habitat present; species absent	Low-quality valley and foothill grassland habitat and limited oak woodland habitat occur within the BSA. This plant was not detected during surveys conducted in the June - October blooming period.
Hooked popcorn-flower (<i>Plagiobothrys uncinatus</i>)	Chaparral, cismontane woodland, valley and foothill grassland. There are no CNDDDB records of occurrences for this species in the vicinity of the BSA.	habitat present; species absent	Low-quality valley and foothill grassland habitat and limited oak woodland habitat occur within the BSA. However, this habitat is of poor quality and this species is unlikely to occur within the BSA. This species was not detected during surveys conducted in the April - May blooming period.
Saline clover (<i>Trifolium depaupertum</i> var. <i>hydrophilium</i>)	Marshes and swamps, valley and foothill grassland, vernal pools (mesic and alkaline sites). CNDDDB records document two occurrences for this species in the Chittenden Quadrangle, between Millers Canal and the Pajaro River near the San Benito/Santa Clara County line and at Soda Lake just north of SR 129 in Santa Cruz County.	habitat present; species absent	Low-quality valley and foothill grassland habitat occur within the BSA. However, this habitat is of poor quality and this species is unlikely to occur within the BSA. This species was not detected during surveys conducted in the April - June blooming period and alkaline soils do not occur on-site.
Showy madia (<i>Madia radiata</i>)	Cismontane woodland, Valley and foothill grassland. No CNDDDB records occur in the vicinity of the BSA for this species.	habitat present; species absent	Low-quality valley and foothill grassland habitat and limited oak woodland habitat occur within the BSA. However, this habitat is of poor quality and this species is unlikely to occur within the BSA. This species was not detected during surveys conducted during the March - May blooming period.
<p>CNDDDB = California Natural Diversity Data Base</p> <p>USGS = United States Geological Survey</p> <p>Source: Natural Environment Study for the U.S. 101 Improvement Project, 2011.</p>			

2.20 ANIMAL SPECIES

2.20.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The USFWS, NOAA Fisheries and the CDFW are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Acts. Species listed or proposed for listing as threatened or endangered are discussed below in Section 2.21, *Threatened and Endangered Species*. All other special-status animal species are also discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 - 1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

2.20.2 Affected Environment

An initial list of 28 special-status animals (other than state or federally threatened or endangered species) were identified as occurring (either currently or historically) within the general project area in a wide variety of different habitat types (defined by the Chittenden USGS quadrangle map in which the project occurs, the eight adjacent quadrangle maps, and the Santa Clara County/San Benito County search area).⁴⁷ Of the 28 species, 8 were dismissed outright due to a lack of habitat for these species within the project's BSA and/or because the BSA is outside of the range of the species. The remaining 20 species were further considered for their occurrence because suitable habitat is present within the BSA or because the database noted an historical occurrence of the species within or in the vicinity of the BSA. Table 36 lists these species, as well as the results of the additional study that was undertaken to determine their presence or absence within the BSA.

As summarized in Table 36, of the 20 special-status species (other than state or federally threatened or endangered species) evaluated in greater detail, 9 are present within the BSA. These consist of two species of fish (Pacific lamprey and Monterey roach), four species of birds (white-tailed kite, northern harrier, yellow warbler, and yellow-breasted chat), and three species of mammals (pallid bat, San

⁴⁷This excludes those animal species listed under FESA and/or CESA, as those species are discussed separately in Section 2.21, *Threatened and Endangered Species*.

TABLE 36

ASSESSMENT OF SPECIAL-STATUS ANIMAL SPECIES (OTHER THAN STATE OR FEDERALLY THREATENED OR ENDANGERED SPECIES) FOR THEIR POTENTIAL TO OCCUR WITHIN THE PROJECT'S BIOLOGICAL STUDY AREA

Species	Habitat	Conclusion	Rationale
Pacific lamprey (<i>Lampetra tridentate</i>)	Coastal streams and rivers	species present	Known to occur in the Pajaro River and in Carnadero Creek. May occur in other creeks within the BSA.
Monterey roach (<i>Lavinia symmetricus subditus</i>)	Fairly warm streams and rivers flowing into Monterey Bay	species present	Known to occur in the Pajaro River and likely also present in its tributaries, such as Tar, Carnadero, & San Juan Creeks and the San Benito River.
Western spadefoot toad (<i>Spea hammondi</i>)	Breeds in temporary rain pools; spends much of life in burrows or cracks in hard soil.	habitat present; species not observed but could potentially be present	No records from project vicinity (e.g., unrecorded in Santa Clara County or the Pajaro River floodplain); project site is likely outside of species' range. Closest CNDDDB record is approximately 10 miles to the southeast. However, habitat exists in moist areas in the grasslands in the Lomerias Muertas, and possibly in other temporary pools in the BSA.
Western pond turtle (<i>Actinemys marmorata</i>)	Creeks, ponds and other aquatic habitat. Needs upland heavy soils to breed.	habitat present; species not observed but presumed to be present	Suitable aquatic habitat is present in the BSA in the Pajaro & San Benito Rivers, and in Tar & Carnadero Creeks. However, this species was not observed in ostensibly high-quality habitat during numerous surveys. Likely present in these streams in low numbers, possibly nesting in surrounding open upland habitats.
White-tailed kite (<i>Elanus leucurus</i>)	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	species present	Grasslands and agricultural edges in and adjacent to the BSA provide suitable foraging habitat, and numerous trees within the BSA provide suitable nesting habitat.
Northern harrier (<i>Circus cyaneus</i>)	Nests in extensive marshes and wet fields, forages in marshes, grasslands, and ruderal habitats.	species present	No suitable breeding habitat within the BSA, but may breed in the large marsh immediately west of the BSA south of Tar Creek. Occasionally forages in open habitats adjacent to and within the project alignment, especially during migration and winter, but considered "special status" only when breeding.

TABLE 36 [continued]

Species	Habitat	Conclusion	Rationale
Golden eagle (<i>Aquila chrysaetos</i>)	Nests in tall trees or on cliffs, forages in grasslands and other open habitats.	habitat present; species not observed but could occasionally forage	Expected to forage in grasslands on and near the BSA. No nesting habitat on or near site.
Western burrowing owl (<i>Athene cunicularia</i>)	Grasslands and ruderal habitats where ground squirrel burrows or other burrows are present.	habitat present; species not observed but could be present	Not observed during the 2007 breeding season protocol-level survey that covered most of the BSA. Known to breed nearby at Bluestone Quarry. Habitat is present in the BSA, and areas with highest potential for occurrence (e.g., extensive grasslands south of Castro Valley Road) were not included in the protocol-level survey. Could breed or roost in grasslands and at the edges of agricultural fields within the BSA.
Long-eared owl (<i>Asio otus</i>)	Nests in dense woodland, including riparian woodland, forages in open habitats	habitat present; species not observed; may occur as a rare nonbreeding visitor	Riparian habitat along creeks provides potential nesting habitat, but this species has not been recorded breeding (and has rarely been recorded at all) in valley-floor areas in the project vicinity; likely absent, or at best occurs as an infrequent forager during the non-breeding season.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	habitat present; species not observed; may nest or forage in BSA	Though not observed during project surveys, shrubs and trees in open habitats provide suitable nesting sites, and ruderal habitats and grasslands in the BSA provide foraging habitat. May occur in low numbers.
Yellow warbler (<i>Dendroica petechia</i>)	Nests in dense stands of willow and other riparian habitat.	species present	Nests and forages in willow- and sycamore-dominated riparian habitat in the BSA along the Pajaro River, San Benito River, Tar Creek, and Carnadero Creek.
Yellow-breasted chat (<i>Icteria virens</i>)	Nests in dense stands of willow and other riparian habitat.	species present	A single singing male was recorded in willow-dominated riparian habitat along the San Benito River during least Bell's vireo protocol-level surveys. Expected to nest in such habitats in low numbers.

TABLE 36 [continued]

Species	Habitat	Conclusion	Rationale
Bryant's savannah sparrow (<i>Passerculus sandwichensis alaudinus</i>)	Breeds and forages in meadows, fallow fields, pastures, and salt marshes.	habitat present; species not observed but could nest within BSA.	Nests in extensive grassland adjacent to the BSA to the west of U.S. 101 and in the Lomerias Muertas to the east. Unlikely to nest in the BSA due to proximity to disturbance and other habitats, but breeding could occur in the more extensive grassland in the BSA south of Castro Valley Road, and birds breeding outside the BSA elsewhere could forage on-site during the breeding season and during other seasons.
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	Breeds and forages in meadows, fallow fields, and pastures.	habitat present; species not observed but could nest within BSA.	Nests in extensive grassland adjacent to the BSA to the west of U.S. 101 and in the Lomerias Muertas to the east. Unlikely to nest in the BSA due to proximity to disturbance and other habitats, but breeding could occur in the more extensive grassland in the BSA south of Castro Valley Road, and birds breeding outside the BSA elsewhere could forage on-site during the breeding season and during other seasons.
Tricolored blackbird (<i>Agelaius tricolor</i>)	Nests colonially in cattails or other emergent vegetation around freshwater ponds. Considered "special-status" only when breeding.	foraging habitat present; species not observed but could forage within BSA.	Emergent wetlands within the BSA are not extensive enough to support a colony of this species, though birds breeding in adjacent areas, and non-breeding birds, may forage in agricultural, ruderal, and grassland habitats in the BSA. A marsh south of Tar Creek and west of the BSA provides potential breeding habitat.
Western red bat (<i>Lasiurus blossevillii</i>)	This species is often found in forest or woodlands, especially in or adjacent to riparian habitat.	foraging habitat present; species not observed but could forage within BSA.	Likely present within riparian areas of the BSA during migration and winter months, but the habitats on-site are not suitable for breeding, as species is not known to breed in the greater Bay Area and they prefer wide, relatively pristine riparian areas for breeding.
Pallid bat (<i>Antrozous pallidus</i>)	Forages over many habitats; roosts in buildings, large oaks or redwoods, rocky outcrops and rocky crevices in mines and caves.	species present	Evidence of night roosting activity under the NB 101 span of the San Benito River Bridge was found during spring 2007 surveys. Cavities in larger trees in the BSA provide potential day-roosting habitat. Could roost and breed on-site.

TABLE 36 [continued]

Species	Habitat	Conclusion	Rationale
San Francisco dusky-footed woodrat (<i>Neotoma fuscipes annectens</i>)	Builds large stick nests in a variety of habitats, including riparian areas, oak woodlands, and scrub.	species present	Numerous nests found in the BSA during reconnaissance-level surveys in areas with oak trees, coyote brush scrub, or riparian habitat.
Ringtail (<i>Bassariscus astutus</i>)	Occurs in riparian and heavily wooded habitats near water, and on rocky talus slopes,	habitat present; species not observed but could occur in BSA.	No records of occurrence in project area or in adjacent quadrangles. Could potentially occur in riparian habitats along the streams that cross the BSA.
American badger (<i>Taxidea taxus</i>)	Establishes burrows in open grasslands.	species present	Recorded in a culvert east of U.S. 101 south of the Y/Betabel interchange, and three road-kills were recorded along the project segment of U.S. 101 during project surveys. Grasslands and edges of agricultural habitats provide suitable habitat, though no dens appearing to be of this species were observed during surveys. Could occur virtually throughout the BSA, though the broader expanses of intensively cultivated agricultural lands east of U.S. 101 and north of the Pajaro River and developed habitats provide only marginal dispersal habitat for this species.
CNDDDB = California Natural Diversity Data Base			
Source: Natural Environment Study for the U.S. 101 Improvement Project, 2011.			

Francisco dusky-footed woodrat, and American badger). While the remaining 11 species were not observed within the BSA during numerous biological surveys, they could occur within the BSA due to the presence of suitable breeding and/or foraging habitat.

Nesting Birds

The Migratory Bird Treaty Act and California Fish and Game Code protect migratory birds, including their eggs, nests, and young. The killing or harassment of such birds, including activities that may result in the abandonment of active nests during the nesting season (generally February 15 through September 1), is prohibited. Numerous species of birds protected by these laws nest within the project area. Black phoebes, cliff swallows, and barn swallows nest under several of the bridges and in several culverts within the BSA. In addition, various other species nest in trees and shrubs, and on the ground, within the BSA.

Roosting Bats

Focused surveys for roosting bats were conducted on six occasions from April to July 2007. Each bridge within the BSA was evaluated for its potential for bat habitat and visually surveyed for the presence of bats and/or signs of bats. Bridges with potential for night and/or day roosting were also surveyed acoustically with the use of Anabat and Z-Caim recorders, which are devices used to detect vocalizing bats.

Only three of the 10 bridges surveyed had bat use or potential roosting habitat for bats. Pallid bat guano was found under the U.S. 101 northbound span over the San Benito River during the summer 2007 surveys. This location is used as a night roost, and no evidence of day-roosting by pallid bats was observed. Additionally, two other bridges, the U.S. 101 southbound span over Tar Creek and U.S. 101 northbound span over Carnadero Creek, were confirmed night roost habitat based on the presence of night-roosting non-special-status bats during an evening survey. Pallid bats could also use these two bridges for roosting habitat.

The Yuma bat forages over permanent streams, such as Carnadero and Tar Creeks in the BSA. Night roosts of Yuma myotis were observed on all three bridges on the site that had evidence of bat use (i.e., U.S. 101 southbound span over Tar Creek, the U.S. 101 northbound span over Carnadero Creek, and the U.S. 101 northbound span over the San Benito River). Because several Yuma myotis were observed entering and leaving mud nests from an active cliff swallow colony within about an hour after sunset, this species likely day roosts and night roosts at the southbound U.S. 101 bridge over Tar Creek and the UPRR. Based on the low numbers of bats observed leaving and entering these nests, the roosts were likely occupied by males (and not breeding females). These bats were not day-roosting under the Carnadero Creek bridge, and thus their maternity colony is likely located in an off-site structure or in a tree.

2.20.3 Environmental Consequences of the Build Alternative

This section of the EIR describes the impact of the project on the 20 special-status animal species that are known to be present, or could be present, within the BSA. For some of these species, impacts are discussed separately, while impacts to other species are grouped into one discussion due to the similarity of habitat, impacts, and (if warranted) mitigation.

2.20.3.1 *Impacts to Pacific Lamprey and Monterey Roach*

Project-related impacts to aquatic habitats have been avoided to the maximum extent feasible. The bridge improvements have been designed so that no new piers or structures will be placed in the low-flow channel of any waterway supporting the Monterey roach and Pacific lamprey, although in Carnadero Creek, existing piers will be extended upstream to support the new span.

The detention basin proposed adjacent to the San Benito River just upstream from U.S. 101 is being designed to minimize the risk of fish entrapment. The entire basin will be graded so that it drains completely through an outlet to the river, with no depressional areas that would support long-term ponding. The outlet will be elevated above the ordinary flow of the river. Therefore the pipe's outlet would not be accessible to fish except during very high flows, when water would be flowing out of the pipe, thus limiting the ability of fish to enter the basin. Fish would only be able to enter the basin during flood flows and would be expected to exit the basin as water levels drop. They will thus spend little time within the basin and there is little chance of entrapment when retained water recedes.

Removal of riparian vegetation by the project will adversely affect fish because it provides cover for fish, shade to reduce water temperatures, and food input (i.e., terrestrial invertebrates), and is considered a very valuable component of fish habitat.

The removal of approximately 890 linear feet of SRA habitat at the Pajaro River, San Benito River, and Carnadero Creek may reduce habitat quality within and downstream from affected stream reaches due to slightly increased water temperatures and reduction in inputs of organic matter and coarse woody debris, thus affecting the aquatic food chain and aquatic habitat structure, respectively. However, shading from widened bridge structures will offset impacts to water temperatures somewhat, and given the sizes of the watersheds contributing to the stream reaches in the BSA, the small-scale, localized effects of reduction in SRA habitat are expected to be minimal.

Approximately 0.02 acres of aquatic habitat in Carnadero Creek will be lost due to the extension of existing piers upstream to support the new U.S. 101 bridge span. This impact will result in the loss of a small amount of aquatic habitat for the Pacific lamprey and Monterey roach. On the scale of the Pajaro River watershed, or even on the scale of Carnadero Creek itself, such impacts will have minimal effects on these species. These structures will not impede fish movement, and no individuals are expected to be impacted due to the minor loss of foraging opportunities associated with the new structures.

There is some potential for Pacific lampreys or Monterey roach to be killed or injured during construction of cofferdams used to dewater reaches of creek where work will occur (if these reaches contain water during the construction period). Construction activities adjacent to waterways could disturb soils and cause sediment to be transported into and through the channel, which would result in temporary increases in turbidity and sedimentation downstream of construction sites. In addition, fuel, concrete, and other contaminants could spill into the waterway during construction.

Pacific lampreys or Monterey roach may suffer higher predation rates swimming through bypass channels constructed around cofferdams. The fish could also be adversely impacted by noise and vibrations related to pile driving during installation of bridge supports. Noise and vibration from pile driving, jack-hammering, or other percussive activities could cause the mortality of individual fish or could cause sensory damage. The loss of hearing sensitivity may adversely affect the ability of the fish to orient themselves, detect predators, locate prey, or sense their acoustic environment. Fish also may exhibit noise-induced avoidance behavior that causes them to move into less suitable habitat.

Impact ANIMAL-1: The project will result in both short- and long-term adverse impacts to Pacific lampreys and Monterey roach. **[Less-than-Significant with Mitigation Listed in Section 2.20.5]**

2.20.3.2 *Impacts to Western Spadefoot Toad*

The western spadefoot toad is not expected to occur in the Santa Clara County portion of the BSA. As a result, impacts to ponds and seasonal wetlands in the Santa Clara County portion of the BSA will not affect this species. There is a low potential for the western spadefoot to occur in the San Benito County portion of the BSA, and even if it does occur there, the project will not impact any potential western spadefoot breeding habitat in the San Benito County part of the project. Some upland habitat for the species could be impacted along the eastern side of the BSA in the vicinity of the Lomerias Muertas; however, quantification of these habitat impacts is not possible given the uncertainty regarding where the species occurs, if it occurs in the project area at all.

To summarize, there is a very low potential for impacts to western spadefoot toads, and if impacts do occur, they will affect only a small amount of habitat (and small number of individuals). As a result, project impacts to this species will not be substantial.

Impact ANIMAL-2: The project's effect on the western spadefoot toad will not be substantial. **[Less-than-Significant Impact]**

2.20.3.3 *Impacts to Western Pond Turtle*

Although no western pond turtles were observed during surveys that were undertaken during the preparation of this EIR, this species is expected to occur within the BSA in very low numbers in the Pajaro River, San Benito River, San Juan Creek, Tar Creek, Carnadero Creek, and possibly Tick Creek. As a result, construction-related activities at these locations could result in harm to individual turtles if they are trampled by personnel or equipment.

The project's impact to the wetland and aquatic habitat that is utilized by the western pond turtle will not constitute a substantial loss of this species' habitat. In any event, as described in Section 2.18.5, the project's impacts to wetland and aquatic habitat will be mitigated.

Impact ANIMAL-3: Construction activities could result in harm to individual western pond turtles. **[Less-than-Significant with Mitigation Listed in Section 2.20.5]**

2.20.3.4 *Impacts to Non-Breeding Special-Status Bird Species*

Impacts to the golden eagle and long-eared owl are grouped together because 1) they are not expected to nest in the project vicinity, and 2) they will be minimally affected by the project.

A very small amount of potential foraging habitat for the golden eagle and long-eared owl will be lost due to grading and paving associated with the project. In addition, small numbers of individuals of these species may be disturbed during construction by construction personnel, heavy equipment, and noise, and such individuals may avoid foraging in the BSA during construction as a result. However, the BSA does not provide important foraging habitat used regularly or by large numbers of individuals of either of these species, and the project will have no long-term or large-scale effects on populations of these species. In addition, riparian, wetland, aquatic, and oak woodland habitats impacted by this project will be mitigated by the provision of such habitat elsewhere (see Sections 2.17.5 and 2.18.5). Such mitigation habitat will provide foraging habitat for these bird species.

Impact ANIMAL-4: The project's effect on the golden eagle and the long-eared owl will not be substantial. **[Less-than-Significant Impact]**

2.20.3.5 *Impacts to Breeding Special-Status Bird Species of Limited Occurrence*

Impacts to the following seven special-status bird species are grouped together because they are expected to nest in or adjacent to the BSA, but in numbers so low that the proposed project will have a limited impact on regional populations: white-tailed kite, northern harrier, loggerhead shrike, yellow warbler, yellow-breasted chat, Bryant's savannah sparrow, and grasshopper sparrow.

A relatively small amount of potential nesting and foraging habitat for these seven species will be lost due to the project, and small numbers of foraging individuals of these species may be disturbed during construction. However, riparian, wetland, aquatic, and oak woodland habitats impacted by this project will be mitigated by the provision of such habitat elsewhere (see Sections 2.17.5 and 2.18.5). Such mitigation habitat will provide nesting and foraging habitat for these bird species.

Impacts to individual birds that could be nesting in trees that will be removed during construction, or trees immediately adjacent to the construction zone, are described in Section 2.20.3.12, *Impacts to Nesting Birds*.

Impact ANIMAL-5: The project's effect on seven special-status bird species that could nest in the project impact area will not be substantial. **[Less-than-Significant Impact]**

2.20.3.6 *Impacts to the Western Burrowing Owl*

Protocol-level surveys for the burrowing owl were conducted in 2007 for a portion of the BSA. Although no owls were found during the surveys, owls are known to be present in the vicinity of the BSA. Further, the portion of the BSA that was not accessible for the 2007 surveys contains burrowing owl habitat. Therefore, owls could be present within the project area at the time of construction.

If western burrowing owls occupy the project site prior to construction, the project will result in a loss of nesting and/or roosting habitat; such impacts could be substantial given the low size of the burrowing

owl population in southern Santa Clara County and northern San Benito County. Construction activities could also harm individual owls if they are nesting within the project's impact area at the time of construction.

Impact ANIMAL-6: The project could result in a loss of burrowing owl habitat and harm to individual owls if the owls are found to occupy the project site prior to construction. [Less-than-Significant with Mitigation Listed in Section 2.20.5]

2.20.3.7 *Impacts to the Tricolored Blackbird*

Habitat located within the BSA is not suitable for breeding by tricolored blackbirds and, therefore, no breeding habitat for this species will be impacted by the project. Although the project will result in the loss of grassland, wetland, and agricultural habitat that could be used by foraging tricolored blackbirds, foraging habitat for this species is regionally abundant. Therefore, project impacts to tricolored blackbird foraging habitat will not result in substantial impacts to this species.

Impact ANIMAL-7: The project's effect on the tricolored blackbird will not be substantial. [Less-than-Significant Impact]

2.20.3.8 *Impacts to the San Francisco Dusky-footed Woodrat*

During biological surveys undertaken for this EIR, suitable woodrat habitat containing woodrat nests was found in most of the oak woodland, riparian, and coyote brush scrub habitats in the BSA, and nests were observed even in isolated oaks. Woodrats are semi-colonial species and often more than one nest was detected in a relatively small area within suitable habitat. Although nests were not counted or mapped, the density and widespread nature of woodrat nests suggests that 100 or more woodrat nests may be present within the BSA.

Construction activities within riparian, oak woodland, and coyote brush habitats will likely result in the destruction of woodrat nests and harm to nesting woodrats.

Construction of the proposed project will also result in the loss of oak woodland, riparian, and coyote brush habitat that is utilized by the woodrat. As shown in Table 34, permanent impacts to these habitats will be up to 12 acres and temporary impacts to these habitats will be up to 15.5 acres. Despite the high number of woodrat nests that will be impacted, and the extent of occupied woodrat habitat that will be lost, these impacts will affect only a very small proportion of the regional population/habitat. Biologists have documented very high densities of woodrats using oak woodland and riparian habitats in the Pajaro River Valley, and this project will not appreciably reduce regional populations of this species.

Impact ANIMAL-8: While the impact of the project on habitat used by the San Francisco dusky-footed woodrat will not be substantial, construction activities are likely to harm

or kill woodrats that nest within the construction zone. **[Less-than-Significant with Mitigation Listed in Section 2.20.5]**

2.20.3.9 *Impacts to Bats*

As described in Section 2.20.2, the only known bat roosts within the BSA are night roosts on the U.S. 101 northbound span over Carnadero Creek and the U.S. 101 northbound span over the San Benito River, and a day roost for small numbers of Yuma myotis and Mexican free-tailed and/or big brown bats on the U.S. 101 southbound span over Tar Creek. Construction-related disturbance from the project would only temporarily impact these roosts, as the new or modified structures are expected to provide night-roosting habitat of similar quality to that currently present. Bats may continue to use bridges that are not demolished during construction as long as night work involving bright lighting under the bridges is not used. If the bats are displaced (e.g., due to demolition), sufficient alternative night-roosting habitat is present that displacement during construction will not result in substantial loss of individuals from local and regional populations.

If bats are day-roosting in trees or buildings in the BSA (which were not surveyed), the removal of these trees and structures will result in the permanent loss of day-roost habitat and may result in the injury or mortality of individual bats. If bats establish a maternity colony in one of the project's bridges prior to the initiation of construction, project activities could result in the temporary loss of day-roost habitat and may result in the injury or mortality of individual bats.

Impact ANIMAL-9: During the construction phase, the project could adversely affect roosting bats, potentially resulting in temporary loss of day-roost habitat and harm to individual bats. **[Less-than-Significant with Mitigation Listed in Section 2.20.5]**

2.20.3.10 *Impacts to the Ringtail*

There are no CNDDB records of the ringtail in the project area and none was observed during wildlife surveys. Ringtails are, however, secretive by nature and not easy to detect. Therefore, since habitat used by the ringtail is present within the BSA, it is possible that ringtails are present.

If present within the project's construction zone, ringtail dens could be destroyed, possibly causing the injury or mortality of ringtails and their young.

Loss of ringtail habitat due to the project will constitute only a very small proportion of the habitat locally available for this species. Therefore, project impacts will not substantially affect local or regional ringtail populations.

Impact ANIMAL-10: While the impact of the project on habitat used by the ringtail will not be substantial, construction activities could harm or kill ringtails if they are found

to be nesting within the construction zone. **[Less-than-Significant with Mitigation Listed in Section 2.20.5]**

2.20.3.11 *Impacts to the American Badger*

The primary effects of the project on American badgers will be a potential increase in road mortality and the potential effects of the project on badger movement across U.S. 101. This impact is discussed in Section 2.17.3.3, *Impacts to Wildlife Movement Corridors*.

Loss of badger habitat due to the project will constitute only a very small proportion of the habitat locally available for this species. Additionally, badger habitat to be impacted by the project is of lower quality than the extensive grasslands adjacent to the BSA. Therefore, project impacts will not substantially affect local or regional American badger populations.

If present within the project's construction zone, badger dens could be destroyed, possibly causing the injury or mortality of badgers and their young. If badgers have to be evicted from their dens, there is some potential that they may be exposed to greater predation risk or greater road mortality while they are seeking out new denning sites, especially if suitable habitat in adjacent areas is already occupied by badgers.

Impact ANIMAL-11: While the impact of the project on habitat used by the badger will not be substantial, construction activities could harm or kill badgers if they are found to be denning within the construction zone. **[Less-than-Significant with Mitigation Listed in Section 2.20.5]**

2.20.3.12 *Impacts to Nesting Birds*

Construction activities could adversely impact birds that nest under the existing bridges, and/or in the trees and shrubs that are within or adjacent to the project impact area. Potential impacts include the destruction of active nests, the incidental loss of fertile eggs or nestlings, or the abandonment of nests.

Impact ANIMAL-12: Construction activities may adversely affect birds that are nesting within or adjacent to the project's construction zone. **[Less-than-Significant with Mitigation Listed in Section 2.20.5]**

2.20.4 **Environmental Consequences of the No Build Alternative**

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. There would be no modification to existing facilities or to the existing environment. There would, therefore, be no impacts to any special status animal species.

2.20.5 Avoidance, Minimization, and/or Mitigation Measures

The following measures, which are included in the project, will reduce the project's significant effects on the Pacific lamprey and Monterey roach to a less-than-significant level:

MM-ANIMAL-1.1: The project will fully mitigate for impacts to SRA, riparian, and aquatic habitats. This mitigation is described in Sections 2.17.5 and 2.18.5.

MM-ANIMAL-1.2: Any construction activities within the low-flow channels of waterways where Pacific lamprey and Monterey roach are known or likely to occur will be limited to the period of June 15 to October 15.

MM-ANIMAL-1.3: For waterways where Pacific lamprey and Monterey roach are known or likely to occur, measures will be taken to ensure that movement of fish is not prevented by any water diversion structures used during construction regardless of when construction occurs. Water will be diverted through the construction site by way of an open ditch, enclosed culvert (which further protects fish from pressure waves created during pile driving [see MM-T&E-1.5]), or other method approved by the regulatory agencies.

MM-ANIMAL-1.4: The project will implement measures during construction to avoid and minimize the potential degradation of water quality within any waterways where Pacific lamprey and Monterey roach are known or likely to occur. These measures are described in Section 2.22.6.

The following measures, which are included in the project, will reduce the project's significant effects on the western pond turtle to a less-than-significant level:

MM-ANIMAL-3.1: A pre-construction survey for the western pond turtle will be conducted within 30 days prior to any site preparation, grading or construction activity at the Pajaro River, San Benito River, San Juan Creek, Tar Creek, Carnadero Creek, and Tick Creek. A single, intensive search for this species will be performed in areas exhibiting even marginally suitable habitat, covering the area of potential impact at each creek crossing and extending at least 500 feet beyond the area of potential impact both upstream and downstream. If this species is found within the surveyed area, the CDFW will be notified of such occurrence and, if possible, and without injury, individuals will be captured and moved to a safe location by a qualified biologist, at least 500 feet away from the area of potential impact.

MM-ANIMAL-3.2: If individuals and/or suitable habitat are located within 500 feet of the area of potential impact at a creek crossing, monitoring will be performed during the

process of clearing vegetation within the construction zone, to ensure that any western pond turtles that may be present will be safely relocated. The biologist conducting such monitoring, if necessary, will have the authority to halt operations in the immediate area to avoid harming turtles, if present, until individuals are safely captured and relocated. The CDFW will be notified of such occurrence.

MM-ANIMAL-3.3: During pre-construction surveys and other measures to be implemented for California red-legged frogs and California tiger salamanders (see Section 2.21.5), a qualified biologist will look for western pond turtles within the project's impact areas. If any pond turtles are detected during these surveys, or during construction, in an area where the individuals could be impacted, they will be relocated to a suitable location outside the area of project impact in consultation with the CDFW.

The following measures, which are included in the project, will reduce the project's significant effects on the western burrowing owl to a less-than-significant level:

MM-ANIMAL-6.1: Pre-construction surveys will be undertaken to determine if owls utilize the habitat to be impacted by the project.

MM-ANIMAL-6.2: Prior to construction, during the non-nesting season (September 2 - February 14), any owls occupying burrows within construction zones will be passively relocated under the authorization of the CDFW. Passive relocation is an intensive process that involves the installation of one-way doors in all ground squirrel burrows occurring on the site; such doors allow owls to leave their burrows but do not allow them to return, thereby forcing owls to move to a different area. The doors will be monitored by a qualified biologist daily for a period of no less than three days and after that period, burrows will be destroyed to preclude owls from returning to the burrows, and grading of these areas will commence within seven days. The passive relocation will be repeated if owls move back to the construction areas.

MM-ANIMAL-6.3: Burrows within the construction zone that are occupied by owls will not be disturbed during the nesting season (February 15 through September 1) unless a qualified biologist verifies that either the owls have not begun laying and incubating eggs, or that juvenile owls have fledged and are able to live independently of their parents. If construction will occur during the nesting season, the project will establish and maintain a minimum of a 250-foot buffer around any active nest.

MM-ANIMAL-6.4: If, based on pre-construction surveys, it is determined that owls utilize habitat that will be impacted by the project, mitigation for the loss of such habitat will take the form of the payment of development fees to the Santa Clara Valley HCP/NCCP. For more information on the HCP/NCCP, please see Section 2.17.5.

MM-ANIMAL-6.5: If MM-ANIMAL-6.4 turns out to be infeasible for some or all of the project, mitigation will consist of the purchase of credits from a mitigation bank that serves the project area. If no banks or credits are available, then the project will develop and implement a plan for the creation or enhancement of burrows, maintenance of burrows and management of foraging habitat, monitoring procedures, funding assurance, annual reporting requirements, and contingency and remediation measures. The extent of the mitigation lands (either for the purchase of mitigation credits or for project-sponsored mitigation), enhancement measures, and other details will be determined based on the circumstances surrounding the owls to be impacted and their habitat, in consultation with the CDFW. Mitigation would be provided at a ratio of 6.5 acres of burrowing owl habitat per pair or unpaired owl that will be impacted by the project.

[**Note:** MM-ANIMAL-6.5 will be implemented only if MM-ANIMAL-6.4 is determined to be partially or completely infeasible.]

If project-sponsored burrowing owl mitigation is necessary, a wildlife ecologist will develop an HMMP for burrowing owls, in consultation with the CDFW, which will contain the following components:

1. Summary of habitat impacts and proposed mitigation ratios.
2. Goal of the habitat mitigation.
3. Location of mitigation site(s) and description of existing site conditions.
4. Mitigation design:
 - Habitat enhancement measures
 - Remedial measures/adaptive management, etc.
5. Monitoring plan (including performance and final success criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.). At a minimum, success criteria will include the presence of burrowing owls, suitable burrows for owls, and quantitative measures of vegetation characteristics for suitable owl habitat.
6. Contingency plan for mitigation elements that do not meet performance or final success criteria.

At least five years of monitoring shall be conducted to document whether the success criteria are achieved, and to identify any remedial actions that must be taken if the identified success criteria are not met.

The following measures, which are included in the project, will reduce the project's significant effects on the San Francisco dusky-footed woodrat to a less-than-significant level:

MM-ANIMAL-8.1: Prior to any clearing of - or work within - riparian, oak woodland, or coyote brush scrub habitat, or the removal of any oak trees located outside these habitats, a qualified biologist will conduct a survey for San Francisco dusky-footed woodrat nests.

MM-ANIMAL-8.2: Where nests are found, and if feasible, the project will maintain a buffer of at least several feet (preferably as much as 10 feet) around these nests. The purpose of the buffer is to avoid moving or bumping the nests or logs or branches on which the nests rest.

If avoidance of nests is not feasible, the nests will be dismantled and the nesting material moved to a new location outside the project's impact area. Prior to dismantling, understory vegetation will be cleared within the project site or in the area immediately surrounding the nest. Then, each active nest will be disturbed by a qualified wildlife biologist to the degree that the woodrats leave the nest and seek refuge out of the impact area. Whether the nest is on the ground or in a tree, the nest would be nudged to cause the woodrats to flee, and then dismantled. For tree nests, a tarp will be placed below the nest and the nest dismantled using hand tools (either from the ground or from a lift).

Nesting material will be located outside the project's impact area in a way that it can be used by woodrats to construct new nests. The nest material will be piled at the base of a nearby hardwood tree (preferably an oak, willow, or other appropriate tree species, with refuge sites among the tree roots). If nearby habitat outside the impact area lacks suitable structure, logs (e.g., 4 feet long and 6 inches in diameter) will be placed in undisturbed riparian or oak woodland habitat nearby and the sticks from the dismantled nests will be placed among these logs. Ideally, the spacing distance between the newly placed piles of sticks should not be less than 100 feet, unless a qualified wildlife biologist has determined that a specific habitat can support higher densities of nests.

The following measures, which are included in the project, will reduce the project's significant effects on roosting bats to a less-than-significant level:

MM-ANIMAL-9.1: A pre-construction/pre-demolition survey for roosting bats will be conducted prior to any construction on the U.S. 101 southbound span over Tar Creek, which is the only bridge with day roosting by bats. Such a survey will also be conducted in any trees and buildings within or immediately adjacent to the project impact area that are identified by a qualified bat biologist (i.e., a

biologist holding a CDFW collection permit allowing the biologist to handle and collect bats) as being high-potential roost sites. If suitable roost sites are found but a visual survey is not adequate to determine presence or absence of bats, acoustical equipment will be used to determine occupancy. This survey will be conducted prior to the beginning of the breeding season (i.e., prior to March 1) in the year in which construction or demolition in a given area is scheduled to occur so that adequate measures can be implemented, if feasible, to evict the bats during the non-breeding season.

MM-ANIMAL-9.2: Because the aforementioned survey will be conducted prior to the breeding season, several months may pass between that survey and the initiation of construction or demolition in a given area. Therefore, a second preconstruction/pre-demolition survey for roosting bats, following the methods described above, will be conducted within 15 days prior to the commencement of these activities in a given area to determine whether bats have occupied a roost in or near the project's impact areas. This survey should be facilitated considerably by information (e.g., on potential roost trees) gathered during the previous survey.

MM-ANIMAL-9.3: If a maternity roost of any bat species is present, the bat biologist will determine the extent of a construction-free buffer around the active roost that will be maintained. This buffer ~~would~~ will be maintained from April 1 until the young are flying, typically after August 31.

MM-ANIMAL-9.4: If a day roost is found on a bridge, in a building, or in a tree that is to be completely removed or replaced, individual bats will be safely evicted under the direction of a qualified bat biologist. Eviction of bats will occur at night, so that bats will have less potential for predation compared to daytime roost abandonment. Eviction will occur between September 1st and March 31st, outside the maternity season, but will not occur during long periods of inclement or cold weather (as determined by the bat biologist) when prey are not available or bats are in torpor. No day roosts are currently known to occur in crevices on bridges in the BSA, but if such a roost is found during preconstruction surveys, one-way doors will be inserted into the crevices to allow bats to exit, but not re-enter, the crevices. These one-way doors will be inspected regularly until demolition commences, and will be removed the morning of demolition.

If a day roost is found within a building, eviction will occur by opening the roosting area to allow airflow through the cavity. Demolition should then follow no sooner than the following day (i.e., there should be no less than one night between initial disturbance for airflow and the demolition). This action should allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight.

If feasible, one-way doors will also be used to evict bats from tree roosts. If use of a one-way door is not feasible, or the exact location of the roost entrance in a tree is not known, the trees with roosts that need to be removed should first be disturbed by removal of some of the trees' limbs not containing the bats. Such disturbance will occur at dusk to allow bats to escape during the darker hours. These trees would then be removed the following day. All of these activities will be performed under the supervision of the bat biologist.

MM-ANIMAL-9.5: If a day roost will be impacted, an alternative bat roost structure will be provided. The design and placement of this structure will be determined by a bat biologist, in consultation with the CDFW, based on the species of bat to be displaced, the location of the original roost, and the habitat conditions in the vicinity. The roost structure will be built to specifications as determined by a bat biologist and CDFW, or it may be purchased from an appropriate vendor. The structure will be placed as close to the impacted roost site as feasible, which may include placement within trees, on bridge structures, or other locations as determined by a bat biologist and CDFW. This bat structure will be erected at least one month (and preferably a year or more) prior to removal of the original roost structure. A bat biologist will monitor this structure during the breeding season for up to three years following completion of the project, or until it is found to be occupied by bats, to provide information for future projects regarding the effectiveness of such structures in minimizing impacts to bats.

MM-ANIMAL-9.6: In some circumstances, it may be beneficial to allow roosting bats to continue using a roost while construction is occurring on or near the roost site. For example, if a bridge found to contain a day roost is being widened but is not being demolished, and if pile-driving, jack-hammering, or other sources of "extreme" disturbance will not occur, a qualified bat biologist (in consultation with the CDFW) will determine whether the bats should be evicted or whether they should remain in place. If it is determined that the risks to bats from eviction (e.g., increased predation or exposure, or competition for roost sites) are greater than the risk of colony abandonment, then the bats will not be evicted. In the case of non-maternity colonies, no alternative roost structures will need to be provided, and no monitoring of the colony during construction will be necessary.

However, if a maternity colony is maintained in place while construction on or immediately adjacent to the colony takes place, some minimal information on the increase in disturbance to which bats are subjected during construction and on the bats' response to that disturbance will be collected. This information will help to inform the impact assessment of, and the development of impact minimization measures for, similar projects in the future. Baseline data on the

vibration and sound levels at the bridge site will also be collected for a minimum of 2 days within 5 days of construction commencement. Following this pre-construction, baseline monitoring, the colony will then be monitored every night during construction using acoustic surveying methods, such as Anabat equipment, to determine the status of the colony (i.e. to determine if the colony abandons the roost). Monitoring equipment will also be used to sample construction-related increases in noise and vibration.

Project implementation will not have to be modified based on the findings of this monitoring, even if the bats abandon the roost. However, these data will allow for a determination of whether or not the bats remained at the bridge during construction and/or changed their activity patterns in relation to varying levels of noise and vibration.

The following measure, which is included in the project, will reduce the project's significant effects on nesting ringtails to a less-than-significant level:

MM-ANIMAL-10.1: If a ringtail nest is detected incidentally (i.e., during the woodrat surveys described in MM-ANIMAL-8.1), a qualified mammalogist will determine the extent of a construction-free buffer zone that should be maintained around the den. Construction activities within this zone will not occur during the period March 1 through August 31 to avoid potential construction disturbance to the ringtail during the breeding season. After August 31, individuals will be safely evicted, under the direction of a qualified mammalogist, by disturbing the den site under the cover of darkness to allow the ringtail(s) to move safely to a new location without being exposed considerably to predators or competitors.

The following measure, which is included in the project, will reduce the project's significant effects on nesting badgers to a less-than-significant level:

MM-ANIMAL-11.1: A qualified mammalogist will conduct preconstruction surveys for badger dens on and within 300 feet of the site (as access permits), within two weeks prior to groundbreaking in any given area occupied by grassland or ruderal habitat. If the mammalogist identifies any dens that appear suitable for this species (based on size, shape, or other features), such "potential dens" will be monitored via tracking media or camera for a period of at least three days to determine occupancy, then excavated if no evidence of occupancy is detected. If an active maternity badger den is located, the mammalogist will determine the measures (e.g., buffers) that will be taken to avoid impacts to the den during the pupping season (i.e., February 15 through July 1, or as otherwise determined through surveys and monitoring of the den), in consultation with the CDFW. After the pupping season, if a den is located in the project impact area, the badgers will

be evicted by excavation of the den using hand tools under the supervision of a qualified mammalogist, in consultation with the CDFW.

The following measures, which are included in the project, will reduce the project's significant effects on nesting birds to a less-than-significant level:

MM-ANIMAL-12.1: Vegetation that will be impacted by the project will be removed during the non-breeding season (i.e., September 1 to February 14), if feasible, to help preclude nesting. If it is not feasible to schedule vegetation removal during the non-breeding season, then pre-construction surveys for nesting birds will be conducted by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. This survey will be conducted no more than ~~seven~~ two days prior to the initiation of construction activities. During this survey, the ornithologist will inspect trees, shrubs, and other potential nesting habitats in and immediately adjacent to the project impact areas for nests. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist, in consultation with CDFW, will determine the extent of a buffer zone to be established around the nest, which can range from ~~50 to 250~~ 100 to 300 feet or more depending on the sensitivity of the nest and/or species.

MM-ANIMAL-12.2: At bridges, to avoid impacts to nesting swallows and black phoebes, old nests will be removed prior to February 15, or after February 15 if a qualified ornithologist determines that the nests are not active. Maintaining bridges free from nesting birds may require the placement of netting or other structures over the underside of the bridges to prevent swallows and other birds from accessing suitable nesting substrate. Alternatively, nest starts may be removed on a regular basis (e.g., every other day) to prevent active nests from becoming established. Because both roosting bats and nesting swallows occur on at least one bridge (the southbound U.S. 101 span over the UPRR/Tar Creek), coordination of exclusion efforts may be necessary. Thus, if exclusion devices such as netting will be installed prior to February 15 to prevent swallows from nesting, and if measures are taken to exclude roosting bats, all these measures will need to be implemented prior to February 15.

2.21 THREATENED AND ENDANGERED SPECIES

2.21.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 USC Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent

amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA), are required to consult with the US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an Incidental Take statement. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

2.21.2 Affected Environment

2.21.2.1 Threatened and Endangered Plants

An initial list of 12 threatened or endangered plants were identified as occurring (either currently or historically) within the general project area in a wide variety of different habitat types. Of the 12 species, the following 11 species were dismissed outright due to a total lack of habitat (such as serpentine soils, alkaline soils, etc.) for these species within the project's BSA:

- Coyote ceanothus
- Ben Lomond spineflower
- Monterey spineflower
- Scotts Valley spineflower
- Robust spineflower
- Santa Cruz cypress
- Santa Cruz wallflower
- White-rayed pentachaeta
- Yadon's rein orchid
- San Francisco popcorn-flower
- Scotts Valley polygonum

The one species for which habitat is present within the BSA, the showy Indian Clover, is discussed in the following paragraph.

The habitat for the showy Indian clover is coastal bluff scrub, as well as valley and foothill grassland. Although low-quality valley and foothill grassland habitat occurs within the BSA, due to degraded site conditions, this species is unlikely to occur within the BSA. CNDDDB records document a single occurrence for this species in the project's Chittenden quadrangle from 1903, but the species is believed extirpated. Showy Indian clover was not detected during surveys conducted during the appropriate blooming period, and this species is determined absent from the BSA.

2.21.2.2 Threatened and Endangered Animals

An initial list of 11 threatened and endangered animals were identified as occurring (either currently or historically) within the general area in a wide variety of different habitat types (defined by the Chittenden USGS quadrangle map in which the project occurs, the eight adjacent quadrangle maps, and the Santa Clara County/San Benito County search area). Of these 11 species, the following 6 were determined absent from the BSA due to a lack of suitable habitat and/or the fact that there are no known historic or current records of the species occurring within or near the BSA:

- Bay checkerspot butterfly
- Coho salmon, Central California Coast Evolutionary Significant Unit (ESU)⁴⁸
- Chinook salmon, Sacramento River Winter-Run ESU
- Chinook salmon, Central Valley Spring-Run ESU
- Willow flycatcher
- Bank swallow

⁴⁸An evolutionary significant unit (ESU) is a population that is distinct from other populations, such distinction being geographic and/or genetic.

The remaining five species are discussed below.

San Joaquin Kit Fox (*Vulpes macrotis mutica*)

During the preparation of this EIR, a kit fox habitat evaluation survey was undertaken per the USFWS's *San Joaquin Kit Fox Survey Protocol* to determine habitat suitability for the kit fox within and around the BSA. No evidence of kit fox was observed during the habitat evaluation. Furthermore, no San Joaquin kit foxes were detected by motion-sensor cameras during the four-month wildlife crossing study of the various bridges and culverts within the project limits.

Historically, there have been a number of sightings of kit fox east and southeast of the project alignment, mostly in the Hollister area, but numerous San Joaquin kit foxes surveys conducted in the 1980s and 1990s in northern San Benito County and Santa Clara County produced negative results. In 2003, an extensive survey with scent dogs was conducted along SR 25, a possible corridor for kit fox between Hollister and U.S. 101 near Gilroy; this survey also produced negative results. Since 1975, there has been only one CNDDDB report of a San Joaquin kit fox in Santa Clara County in an outlying area of Henry Coe State Park, many miles from the proposed project. Habitat modeling conducted for the HCP/NCCP identified no habitat for the kit fox in the BSA.

In summary, there is no evidence that San Joaquin kit foxes currently occur in, nor any historical records from, the immediate vicinity of the project, and the habitat evaluation conducted for this project reached the conclusion that this species should be considered absent from the project site.

Least Bell's Vireo (*Vireo bellii pusillus*)

The least Bell's vireo is a small migratory bird that breeds in riparian habitats. In the Pajaro River Valley, the willow-dominated riparian habitat along streams such as Llagas Creek, the Pajaro River, and the San Benito River provides potentially suitable breeding habitat for least Bell's vireos. However, the abundance of brown-headed cowbirds throughout the region may prevent the colonization of the project area by successfully breeding least Bell's vireos, unless a cowbird control program is initiated. Furthermore, because there is no historical evidence of a widespread breeding population in the Pajaro River watershed even before this species decline in the 20th century, it is possible that some other factors limit the potential for this species to become established in the project area.

Protocol-level surveys for the least Bell's vireo were conducted in 2007 as part of the preparation of this EIR. No least Bell's vireos were recorded during these surveys. Further, this species has not been recorded in the project area since 1932.

Steelhead, South-Central California Coast Distinct Population Segment (DPS)⁴⁹

The steelhead is a form of rainbow trout that migrates upstream from the ocean to spawn in late fall or early winter, when flows are sufficient to allow them to reach suitable habitat in far upstream areas. In the Pajaro River system, spawning occurs between December and June. Steelhead usually spawn in clear, cool, perennial sections of relatively undisturbed streams.

Steelhead are known to spawn in Uvas Creek (which becomes Carnadero Creek near the project's BSA), Tar Creek, and other tributaries to the Pajaro River located well upstream from the project site. Steelhead have been found in the San Benito River and its tributaries in wet years, but temperatures are likely too high for successful rearing. The Pajaro and San Benito rivers, Tar Creek, and Carnadero Creek are all designated critical habitat in the BSA.

Within the BSA, the Pajaro River provides suitable passage for fish migration to and from spawning and rearing habitats in the upper watershed. However, aquatic habitat within the portion of the Pajaro River in the BSA is not suitable spawning and rearing habitat due to the warm turbid water, silt substrate, likely eutrophic condition, and lack of habitat complexity, such as riffle pool complexes.

Steelhead are able to access the portion of the San Benito River within the BSA. However during the 2007 surveys, this portion of the river was largely stagnant, lacking channel integrity and complexity with a silt substrate rendering it suitable to provide passage only in high flow years. Steelhead may enter the San Benito River in wet years, but temperatures are likely too high for successful rearing.

Tar Creek supports spawning steelhead in reaches upstream from the BSA, and steelhead migrate through the BSA between those spawning areas and the Pajaro River. The reach of Tar Creek within the BSA possesses water quality and habitat complexity suitable for steelhead migration, though due to the low amount of flow and warm temperatures within this portion of the creek during the dry season, suitable steelhead rearing habitat is likely absent.

Aquatic conditions in lower San Juan Creek are similar to those in the Pajaro River and as such aquatic habitat within the portion of San Juan Creek in the BSA is not suitable for spawning and rearing, but steelhead may enter the creek. Other creeks in the BSA, such as Tick Creek and Gavilan Creek, do not provide suitable hydrology or substrate to support spawning steelhead, and thus the species is not expected to occur in these creeks.

California Red-legged Frog (*Rana draytonii*)

The California red-legged frog is California's largest native frog. The species is generally restricted to riparian and lake habitats in California and northern Baja California. Red-legged frogs prefer deep, calm

⁴⁹Under the Endangered Species Act, a distinct population segment (DPS) is a subset of a species that is both genetically discrete and significant.

pools in creeks, rivers, or lakes below 5,000 feet in elevation. The USFWS listed the California red-legged frog as threatened in 1996, due to continued habitat degradation throughout the species' range and population declines. The USFWS has designated critical habitat for the California red-legged frog. However, no portion of the BSA is within designated critical habitat. This species is a "covered species" under the proposed Santa Clara Valley HCP/NCCP.

Habitat surveys in the BSA and vicinity were conducted in April, October, and November 2007. The purpose of the surveys was to document potential amphibian habitat within, and adjacent to, the BSA as well as assess potential impacts of the project on California red-legged frogs. Prior to these site visits, the CNDDDB was queried for information on the distribution of California red-legged frogs within the project vicinity. The California red-legged frog has not been recorded within the BSA. However, there are seven CNDDDB records of California red-legged frogs within 2 miles of the BSA. Four records are from ponds at Bluestone Quarry and on Castro Valley Ranch immediately west of the northern portion of the BSA, and two records are from ponds east of the San Benito County portion of the BSA. All of these locations could serve as breeding sites. The seventh record is from the confluence of the Pajaro River and Carnadero Creek. In addition, a single adult frog was also observed in Carnadero Creek approximately 985 feet downstream from the confluence of Tick and Carnadero Creeks in September 2007. This locality is approximately 650 feet northeast of the project BSA.

Many of the numerous ponds distributed throughout the annual grassland surrounding the BSA are likely to provide suitable breeding habitat for California red-legged frogs. Whether or not reproduction is successful in a particular pond largely depends upon the duration the pool remains wet and whether or not introduced predators, such as bullfrogs, are present. Based on the surveys, along with CNDDDB accounts, the highest quality potential breeding habitats within close proximity to the BSA are:

- The stock pond within the BSA south of Castro Valley Road (marked as aquatic habitat on Figure 20e);
- A large wetland just south of Tar Creek and west of the BSA; and
- A series of ponds located west of the BSA on Bluestone Quarry and Castro Valley Ranch.

While isolated and off-channel ponds throughout the project region represent potential breeding habitat for California red-legged frogs, the creeks and rivers themselves are unlikely to support successful breeding of California red-legged frogs due to high predator populations (especially in perennial streams) and/or short hydroperiods in intermittent creeks such as Tick Creek and Gavilan Creek.

Adult California red-legged frogs spend the majority of their time either in close proximity to their breeding habitat or in other moist habitats; however, they will disperse across a wide variety of habitats. Thus, potential California red-legged frog dispersal habitat within the general project vicinity includes areas adjacent to ponds, depressional wetlands, and rivers as well as grasslands, scrub habitat, forested areas, and even agricultural lands. Essentially, all non-developed habitat has the potential to be used by California red-legged frogs, at least for upland dispersal between aquatic habitats.

Although suitable non-breeding habitat for California red-legged frogs exists throughout the project area, dispersal across U.S. 101 is impeded by heavy traffic and concrete median barriers that separate south- and northbound traffic along much of the project alignment. However, the riparian habitats along the Pajaro River, San Benito River, Tick Creek, Gavilan Creek, Carnadero Creek, Tar Creek, and San Juan Creek, and the culverts that drain seasonal tributaries, represent potential dispersal routes for California red-legged frogs between the western and eastern boundaries of the BSA.

California Tiger Salamander (*Ambystoma californiense*)

The California tiger salamander occurs in areas of the Central Valley and California Coast Ranges where temporary ponded environments (e.g., vernal pools or human-made ponds providing water for at least three months) are surrounded by uplands that support small mammal burrows, which salamanders use for aestivation (i.e., a state of dormancy during the summer) and refuge. Breeding pools are usually ephemeral pools (e.g., vernal pools), but they must retain water long enough for metamorphosis to occur. Permanent ponds are also used for breeding, but larger ponds often contain predators that consume eggs and larvae, and prevent successful breeding.

In 2004, the USFWS listed the California tiger salamander as threatened throughout its range. No portion of the project BSA, however, is within designated critical habitat for this species. ~~In February 2009, the CDFW accepted a petition to list the species as endangered under the California Endangered Species Act; thus, the species is currently a candidate for state listing.~~ In 2010, the CDFW listed the species as threatened under the California Endangered Species Act. The California tiger salamander is considered a “covered species” by the Santa Clara Valley HCP/NCCP.

Habitat assessments in the BSA and vicinity were conducted in April, October, and November 2007. The purpose of the surveys was to document potential amphibian habitat within, and adjacent to, the BSA as well as assess potential impacts of the project on California tiger salamanders. Prior to these site visits, the CNDDDB was queried for information on the distribution of California tiger salamanders within the project vicinity. There are numerous CNDDDB records of California tiger salamanders near the BSA. A seasonal wetland depression located within the BSA west of Old Monterey Road on Sargent Ranch was inaccessible during surveys for this project, but according to the CNDDDB, tiger salamanders have bred in this pool. Also within the BSA, the stock pond south of Castro Valley Road provides suitable breeding habitat for tiger salamanders, though the pond has not been surveyed. Several additional CNDDDB records are from ponds immediately west of the BSA near Bluestone Quarry and elsewhere on Castro Valley Ranch. There are also known tiger salamander breeding ponds both east and west of the southern terminus of the project.

No surveys for California tiger salamanders were conducted for this project. Rather, presence in areas with suitable breeding ponds was assumed, and the location of potential habitat was assessed on the basis of the locations of these ponds, the type and quality of upland habitat, and the presence of barriers to dispersal. It was also assumed that all suitable upland habitat within 1.2 miles of potential breeding

ponds was upland dispersal or aestivation habitat for California tiger salamanders unless the upland habitat was separated from these ponds by insurmountable barriers.

Many of the numerous ponds distributed throughout annual grassland surrounding the BSA are likely to provide suitable breeding habitat for California tiger salamanders. The vast areas of annual grassland surrounding the BSA provide high-quality upland habitat that may be used for dispersal and aestivation. In contrast, agricultural areas within the BSA are unsuitable for use as aestivation habitat due to the frequency of disturbance and lack of small mammal burrows. The majority of habitat within and adjacent to the BSA (with the exception of developed areas) represents potential dispersal habitat for California tiger salamanders. However, the following areas are unlikely to provide high quality habitat for tiger salamanders due to their isolation from potential breeding sites, significant impediments to dispersal (e.g., heavy traffic, large rivers, and highway median barriers), and/or frequent disturbance and lack of refuge:

- Annual grassland along the eastern side of U.S. 101 between the southern boundary of the project and the San Benito River agricultural lands, and associated small pockets of annual grassland that flank U.S. 101 along the western edge of the highway between the San Benito and Pajaro Rivers.
- Much of the habitat in the northern and eastern regions of the BSA consists of agricultural land and isolated pockets of annual grassland. Although dispersing tiger salamanders could walk over these areas, they do not provide breeding habitat and in most areas do not provide suitable refuge (e.g., small mammal burrows) due to intensive small mammal control efforts.

Generally, the habitat on the east side of U.S. 101 north of SR 25 is not considered potential California tiger salamander habitat due to the lack of suitable aestivation habitat and presence of significant impediments to dispersal (e.g., U.S. 101, developed areas, and heavily cultivated lands) between those areas and tiger salamander breeding locations.

2.21.3 Environmental Consequences of the Build Alternative

2.21.3.1 *Impacts to Steelhead*

Project-related impacts to aquatic habitats have been avoided to the maximum extent feasible. The bridge improvements have been designed so that no new piers or structures will be placed in the low-flow channel of any waterway supporting steelhead, although in Carnadero Creek, existing piers will be extended upstream to support the new span.

The detention basin proposed adjacent to the San Benito River just upstream from U.S. 101 is being designed to minimize the risk of fish entrapment. The entire basin will be graded so that it drains completely through an outlet to the river, with no depressional areas that would support long-term ponding. The outlet will be elevated above the ordinary flow of the river. Therefore, the pipe's outlet

would not be accessible to fish except during very high flows, when water would be flowing out of the pipe, thus limiting the ability of fish to enter the basin. Fish would only be able to enter the basin during flood flows and would be expected to exit the basin as water levels drop. They will thus spend little time within the basin and there is little chance of entrapment when retained water recedes.

Removal of riparian vegetation by the project will adversely affect fish because it provides cover for fish, shade to reduce water temperatures, and food input (i.e., terrestrial invertebrates), and is considered a very valuable component of fish habitat.

The removal of approximately 890 linear feet of SRA habitat at the Pajaro River, San Benito River, and Carnadero Creek may reduce habitat quality within and downstream from affected stream reaches due to slightly increased water temperatures and reduction in inputs of organic matter and coarse woody debris, thus affecting the aquatic food chain and aquatic habitat structure, respectively. However, shading from widened bridge structures will offset impacts to water temperatures somewhat, and given the sizes of the watersheds contributing to the stream reaches in the BSA, the small-scale, localized effects of reduction in SRA habitat are expected to be minimal.

Approximately 0.02 acres of aquatic habitat in Carnadero Creek will be lost due to the extension of existing piers upstream to support the new U.S. 101 bridge span. This impact will result in the loss of a small amount of aquatic habitat for steelhead. On the scale of the Pajaro River watershed, or even on the scale of Carnadero Creek itself, such impacts will have minimal effects on steelhead. These structures will not impede fish movement, and no individuals are expected to be impacted due to the minor loss of foraging opportunities associated with the new structures.

There is some potential for steelhead to be killed or injured during construction of cofferdams used to dewater reaches of creek where work will occur (if these reaches contain water during the construction period). Construction activities adjacent to waterways could disturb soils and cause sediment to be transported into and through the channel, which would result in temporary increases in turbidity and sedimentation downstream of construction sites. In addition, fuel, concrete, and other contaminants could spill into the waterway during construction.

Steelhead may suffer higher predation rates swimming through bypass channels constructed around cofferdams. Steelhead could also be adversely impacted by noise and vibrations related to pile driving during installation of bridge supports. Noise and vibration from pile driving, jack-hammering, or other percussive activities could cause the mortality of individual fish or could cause sensory damage. The loss of hearing sensitivity may adversely affect the ability of salmonids to orient themselves, detect predators, locate prey, or sense their acoustic environment. Fish also may exhibit noise-induced avoidance behavior that causes them to move into less suitable habitat.

Impact T&E-1: The project will result in both short- and long-term adverse impacts to steelhead.
[Less-than-Significant with Mitigation Listed in Section 2.21.5]

2.21.3.2 *Impacts to California Red-legged Frog*

Construction and maintenance activities associated with the project could result in the direct loss and indirect disturbance of California red-legged frogs and their habitats. The project could affect individual red-legged frogs as a result of:

- Direct mortality during construction as a result of trampling by construction personnel or equipment;
- Increased mortality due to roadkill caused by the increase in traffic speed and increase in number of lanes within project roadways;
- Increased mortality due to roadkill caused by the construction and vehicular use of either a frontage road (under Design Option A) or the Santa Teresa Boulevard Extension (under Design Option B) between a potential breeding pond south of Castro Valley Road and upland dispersal habitat to the north and west;
- Potential reduction in dispersal to and from the pond south of Castro Valley Road due to the physical impediment posed by, and vehicular use of, either a frontage road (under Design Option A) or the Santa Teresa Boulevard Extension (under Design Option B);
- Direct mortality from the collapse of underground burrows (which may be used as refuges in upland areas by red-legged frogs), resulting from soil compaction; and
- Direct mortality or loss of suitable habitat resulting from the loss of dispersal habitat, fill of wetland and aquatic habitats, and removal of riparian vegetation

No known red-legged frog breeding habitat will be directly impacted by the project's construction activities. However, it is possible that red-legged frogs breed in some of the aquatic or freshwater emergent wetlands that will be impacted by the project; see Section 2.18 for details. Other potential breeding habitat, such as the stock pond south of Castro Valley Road and the wetlands south of Tar Creek, will not be directly impacted. The new frontage road/extension of Santa Teresa Boulevard near the stock pond south of Castro Valley Road will not impact any aquatic breeding habitat within the pond itself and will bridge any aquatic habitat in the inlet to the pond. However, as described in the following paragraph, this project feature may limit dispersal to and from the pond, as well as potentially increasing mortality due to roadkill.

Under Design Option A, a new frontage road would be constructed to the east of the stock pond south of Castro Valley Road. Under Design Option B, the extension of Santa Teresa Boulevard would be constructed to the east of the pond. In both cases, the new roadway would limit dispersal of red-legged frogs to and from the pond. In addition, any frogs attempting to cross over the roadway would risk harm from vehicular traffic. The impact would be greater under Design Option B because traffic volumes will be higher.

The proposed project could result in impacts to as much as 394 acres of potential red-legged frog habitat including aquatic and wetland habitat that may serve as breeding habitat, riparian habitat that may serve as cover for frogs associated with aquatic habitat, and upland grassland, agricultural, coyote brush scrub

and oak woodland habitat that may serve as dispersal habitat for red-legged frogs. Because it was assumed that red-legged frogs could occur virtually anywhere in the BSA, all impacted natural habitat (i.e., areas that were not already paved or otherwise developed) was considered impacted red-legged frog habitat. Two categories of habitat impacts were identified:

Permanent Impacts

Under Design Option A, approximately 110 acres of potential red-legged frog habitat, including 92 acres in Santa Clara County and 18 acres in San Benito County, will be permanently lost due to the construction of pavement and other improvements in areas that currently provide natural habitat that may be used by red-legged frogs. Under Design Option B, this impact would total approximately 97 acres, of which 79 acres would be in Santa Clara County and 18 acres would be in San Benito County.

Temporary Impacts

Under Design Option A, approximately 284 acres of potential red-legged frog habitat, including 198 acres in Santa Clara County and 86 acres in San Benito County, will be used for construction access and staging while the project is being constructed or will be impacted by grading activities as part of the project. Under Design Option B, this impact would total approximately 273 acres, of which 187 acres would be in Santa Clara County and 86 acres would be in San Benito County. Areas used for construction access and staging during construction will not be subject to grading and will not be paved or otherwise permanently altered. These areas are expected to provide habitat of similar quality to existing conditions shortly (i.e., in less than one year) after the completion of construction. Areas that will be temporarily impacted by grading will not be paved, and instead will be revegetated following the completion of construction; such areas are expected to provide habitat of similar quality to the existing habitat that will be impacted within approximately one year (for grassland habitat) to five years (for riparian habitat) after the completion of construction.

Impact T&E-2: The project will result in both short- and long-term adverse impacts to the California red-legged frog. **[Less-than-Significant with Mitigation Listed in Section 2.21.5]**

2.21.3.3 Impacts to California Tiger Salamander

Construction and maintenance activities associated with the project could result in the direct loss and indirect disturbance of California tiger salamanders and their habitats. The project could affect individual tiger salamanders as a result of:

- Direct mortality during construction as a result of trampling by construction personnel or equipment;
- Increased mortality due to roadkill caused by the increase in traffic speed and increase in number of lanes within project roadways;

- Increased mortality due to roadkill caused by the construction and vehicular use of either a frontage road (under Design Option A) or the Santa Teresa Boulevard Extension (under Design Option B) between a potential breeding pond south of Castro Valley Road and upland dispersal habitat to the north and west;
- Potential reduction in dispersal to and from the pond south of Castro Valley Road due to the physical impediment posed by, and vehicular use of, either a frontage road (under Design Option A) or the Santa Teresa Boulevard Extension (under Design Option B);
- Direct mortality from the collapse of underground burrows, resulting from soil compaction; and
- Direct mortality or loss of suitable habitat resulting from the loss of dispersal habitat, loss of refuge areas, and fill of wetland and aquatic habitats.

No known or potential tiger salamander breeding habitat will be directly impacted by the project's construction activities. Although the known breeding pond on Sargent Ranch and the potential breeding pond south of Castro Valley Road are located in the BSA, they will not be directly impacted by the project. The new frontage road/extension of Santa Teresa Boulevard near the stock pond south of Castro Valley Road will not impact any aquatic breeding habitat within the pond itself and will span any aquatic habitat in the inlet to the pond. However, as described in the following paragraph, this project feature may limit dispersal to and from the pond, as well as potentially increasing mortality due to roadkill.

Under Design Option A, a new frontage road would be constructed to the east of the stock pond south of Castro Valley Road. Under Design Option B, the extension of Santa Teresa Boulevard would be constructed to the east of the pond. In both cases, the new roadway would limit dispersal of tiger salamanders to and from the pond. In addition, any salamanders attempting to cross over the roadway would risk harm from vehicular traffic. The impact would be greater under Design Option B because traffic volumes will be higher.

The project could result in impacts to as much as 281 acres of non-breeding habitat including aquatic, wetland, and riparian habitat, as well as upland grassland, agricultural, coyote brush scrub and oak woodland habitat that may serve as upland habitat for California tiger salamanders. The reader will note that the impact assessments for California red-legged frogs and California tiger salamanders differ somewhat. The California red-legged frog impact assessment, described above, assumes that all impacted natural habitat (i.e., areas that were not already paved or otherwise developed) is considered impacted red-legged frog habitat. For the California tiger salamander, areas on the east side of U.S. 101 north of SR 25 are not considered potential California tiger salamander habitat due to the lack of suitable aestivation habitat and presence of significant impediments to dispersal (e.g., U.S. 101, developed areas, and heavily cultivated lands) between those areas and tiger salamander breeding locations. Two categories of habitat impacts were identified:

Permanent Impacts

Under Design Option A, approximately 76 acres of potential tiger salamander habitat, including 58 acres in Santa Clara County and 18 acres in San Benito County, will be permanently lost due to the

construction of pavement and other improvements in areas that currently provide natural habitat that may be used by tiger salamanders. Under Design Option B, this impact would total approximately 74 acres, of which 56 acres would be in Santa Clara County and 18 acres would be in San Benito County. These permanent habitat impacts include both upland and non-breeding wetland/aquatic habitat impacts.

Temporary Impacts

Under Design Option A, approximately 215 acres of potential tiger salamander habitat, including 129 acres in Santa Clara County and 86 acres in San Benito County, will be used for construction access and staging while the project is being constructed or will be impacted by grading activities as part of the project. Under Design Option B, this impact would total approximately 205 acres, of which 119 acres would be in Santa Clara County and 86 acres would be in San Benito County. Areas used for construction access and staging during construction will not be subject to grading and will not be paved or otherwise permanently altered. These areas are expected to provide habitat of similar quality to existing conditions shortly (i.e., in less than one year) after the completion of construction. Areas that will be temporarily impacted by grading will not be paved, and instead will be revegetated following the completion of construction; such areas are expected to provide habitat of similar quality to the existing habitat that will be impacted within approximately one year (for grassland habitat) to five years (for riparian habitat) after the completion of construction.

Impact T&E-3: The project will result in both short- and long-term adverse impacts to the California tiger salamander. **[Less-than-Significant with Mitigation Listed in Section 2.21.5]**

2.21.4 Environmental Consequences of the No Build Alternative

Under the No Build Alternative, the improvements to U.S. 101 that comprise the Build Alternative would not be constructed. There would be no modification to existing facilities or to the existing environment. There would, therefore, be no impacts to any threatened or endangered species.

2.21.5 Avoidance, Minimization, and/or Mitigation Measures

The following measures, which are included in the project, will reduce the project's significant effects on steelhead to a less-than-significant level:

MM-T&E-1.1: The project will fully mitigate for impacts to SRA, riparian, and aquatic habitats. This mitigation is described in Sections 2.17.5 and 2.18.5.

MM-T&E-1.2: Any construction activities within the low-flow channels of waterways where steelhead are known or likely to occur will be limited to the period of June 15 to October 15.

- MM-T&E-1.3:** For waterways where steelhead are known or likely to occur, measures will be taken to ensure that movement of fish is not prevented by any water diversion structures used during construction, regardless of when construction occurs. Water will be diverted through the construction site by way of an open ditch, enclosed culvert (which further protects fish from pressure waves created during pile driving [see MM-T&E-1.5]), or other method approved by the regulatory agencies.
- MM-T&E-1.4:** The project will implement measures during construction to avoid and minimize the potential degradation of water quality within any waterways where steelhead are known or likely to occur. These measures are described in Section 2.22.6.
- MM-T&E-1.5:** To avoid and minimize impacts to fish resulting from pressure waves created during pile driving, the following measures will be implemented: (a) pile driving work will be limited to the period of June 15 to October 15; (b) in-water installation of piles will be avoided either by placing piles outside the low-flow channel or by driving the piles in an area that has been de-watered; (c) where practical, low-impact pile driving equipment such as vibratory hammers or hydraulic casing oscillators, which minimize underwater sound pressure levels, or press-in pile installation will be used instead of impact hammers; (d) where practical, steel piles will be avoided; (e) construction-related underwater sound exposure levels will be limited to less than 187 dB accumulated sound exposure levels and peak sound pressure levels of less than 208 dB; and (f) if necessary, other sound reduction measures, such as air bubble curtains or coffer dams, will be implemented to attenuate noise levels.

The following measures, which are included in the project, will reduce the project's significant effects on the California red-legged frog to a less-than-significant level:

- MM-T&E-2.1:** The project will fully mitigate for impacts to riparian habitat and aquatic/wetland habitat, the two habitat types of greatest value to red-legged frogs. This mitigation is described in Sections 2.17.5 and 2.18.5.
- MM-T&E-2.2:** The project will pay development fees to the Santa Clara Valley HCP/NCCP for impacts to upland non-breeding red-legged habitat. For more information on the HCP/NCCP, please see Section 2.17.5.
- MM-T&E-2.3:** If MM-T&E-2.2 turns out to be infeasible for some or all of the project, mitigation for impacts to upland non-breeding frog habitat will consist of the purchase of credits from a mitigation bank that serves the project area. If no banks or credits are available, then the project will develop and implement a

plan for the preservation and enhancement of non-breeding red-legged frog habitat at off-site location(s).

[**Note:** MM-T&E-2.3 will be implemented only if MM-T&E-2.2 is determined to be partially or completely infeasible.]

If project-specific mitigation for impacts to California red-legged frog habitat is necessary, a wildlife ecologist will develop a California red-legged frog HMMP. This plan will contain the same types of information described above in MM-ANIMAL-6.5, but will focus on the red-legged frog instead of the burrowing owl. At a minimum, success criteria will include the presence of suitable habitat conditions for the red-legged frog, and provision of ecological functions and values equal to or exceeding those in the red-legged frog habitat that is impacted.

MM-T&E-2.4: Prior to any ground disturbance, pre-construction surveys shall be conducted by a USFWS-approved biologist for the California red-legged frog. These surveys shall consist of walking surveys of the project limits and adjacent areas accessible to the public to determine presence of the species. All aquatic, wetland, and riparian habitats within construction areas will be surveyed by the qualified biologist for the presence of larval and adult California red-legged frogs prior to construction activities. If any red-legged frogs are detected within construction areas, they will be relocated to predetermined sites outside the project area (with the approval of the USFWS). Only USFWS-approved biologist(s) who are familiar with the biology and ecology of the California red-legged frog shall capture or handle this listed species. Generally, if an individual needs to be relocated, it will be moved outside the project area and placed in appropriate habitat providing adequate cover.

MM-T&E-2.5: An employee education program will take place before groundbreaking for the project, and a USFWS-approved biologist will explain to construction workers how best to avoid the accidental take of California red-legged frogs. The approved biologist will train construction workers on recognition of this species, their potential for occurrence in the project area, measures to avoid take, and penalties for take. The program will consist of a brief presentation by the on-site biologist to explain endangered species concerns to all contractors, their employees, and agency personnel involved in the project. The program should include a description of the California red-legged frog and its habitat needs; an explanation of the status of this species and its protection under the Endangered Species Act; and a description of the measures being taken to reduce effects to this species during project construction and implementation. Documentation of the training, including individual signed affidavits, will be kept on file.

- MM-T&E-2.6:** Prior to the start of work each day, dedicated construction personnel will inspect trenches and pits that were left open overnight. If a California red-legged frog (or any amphibian that construction personnel think may be of this species) is encountered, the following protocol will be implemented: 1) All work that could result in direct injury, disturbance, or harassment of the individual animal will immediately cease; 2) the resident engineer or inspector will be immediately notified; 3) the resident engineer or inspector will immediately notify the appropriate Construction Environmental Coordinator, or similar responsible party, who in turn will immediately notify the USFWS and CDFW; and 4) a qualified biologist approved by the USFWS to handle the individual frog will be contacted to remove the individual to a safe location nearby.
- MM-T&E-2.7:** Permanent and temporary disturbances and other types of project-related disturbance to the habitats of the California red-legged frog shall be minimized to the maximum extent practicable. To minimize temporary disturbances, all project-related vehicle traffic shall be restricted to established roads, construction areas, and other designated areas. These areas will also be included in pre-construction surveys and, to the maximum extent possible, should be established in locations disturbed by previous activities to prevent further adverse effects.
- MM-T&E-2.8:** Project-related vehicles shall observe a 15 mph speed limit within construction areas, except on established public roadways; this is particularly important at night when the California red-legged frog is most active. To the maximum extent possible, nighttime construction should be minimized. Off-road traffic outside of designated project areas shall be prohibited.
- MM-T&E-2.9:** To prevent inadvertent entrapment of red-legged frogs during construction, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they will be inspected for trapped animals. If at any time a trapped listed animal is discovered, the procedure described in MM-T&E-2.6 will be followed.
- MM-T&E-2.10:** To eliminate an attraction to predators of the California red-legged frog, all food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once every week.
- MM-T&E-2.11:** To avoid harassment, injury, or mortality of California red-legged frogs by dogs or cats, no canine or feline pets shall be permitted in the project area.

MM-T&E-2.12: Plastic monofilament netting (erosion control matting) or similar material shall not be used at the project site because California red-legged frogs may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

MM-T&E-2.13: A qualified biologist(s) shall be on-site during activities that may result in the take of the California red-legged frog. The qualifications of the biologist(s) must be presented to the USFWS for review and written approval prior to groundbreaking at the project site. The biologist(s) shall be given the authority to stop any work that may result in take of frogs. If the biologist(s) exercises this authority, the USFWS and the CDFW shall be notified by telephone and electronic mail within one working day. The need for the monitor may be determined at the discretion of your environmental coordinator. The biologist should be on-site during initial clearing and grubbing and during rainy periods when frogs are most likely to be dispersing.

MM-T&E-2.14: Injured California red-legged frogs will be cared for by a licensed veterinarian or other qualified person; dead red-legged frogs will be preserved according to standard museum techniques and held in a secure location. The USFWS and the CDFW will be notified within one working day of the discovery of death or injury to a California red-legged frog that occurs due to project-related activities or is observed at the project site. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal clearly indicated on a USGS 7.5 minute quadrangle and other maps at a finer scale, as requested by the USFWS, and any other pertinent information.

MM-T&E-2.15: Environmentally sensitive area (ESA) fencing will be installed around sensitive habitat features used by the red-legged frog, such as wetlands and riparian and aquatic habitats, which are to be avoided during project construction. The ESA fencing will be installed at a minimum distance from the edge of the resource as determined through coordination with the CDFW and USFWS. The construction specifications will contain clear language stating that construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities are prohibited within the fenced ESA.

[Note: Construction of wildlife exclusion fencing around a project's impact areas is a standard practice to minimize the potential for red-legged frogs (or other species, such as the California tiger salamander) to enter, and be injured or killed in, construction areas. However, such fencing over such a long, linear project area would adversely affect the dispersal of some smaller mammals

through the project area. Such fencing is not required by the HCP/NCCP, and is not proposed for this project.]

MM-T&E-2.16: Under Design Option A, a bridge and a 4-foot arch pipe will be constructed within the new frontage road near the pond south of Castro Valley Road. If red-legged frogs are breeding in or otherwise using the pond, the bridge would allow frogs to disperse under the road along the drainage leading into the pond, while the arch pipe would allow for dispersal between the pond and areas west of the pond. These features will allow frogs the ability to disperse to and from the pond without crossing the road's surface [Design Option A only].

MM-T&E-2.17: Under Design Option B, a bridge and two 8-foot arch pipes will be constructed within the new Santa Teresa Boulevard Extension near the pond south of Castro Valley Ranch to allow frogs to move under the roadway. Because of the increased traffic on Santa Teresa Boulevard under this option, as compared to that on the frontage road under Design Option A, permanent exclusion fencing will be installed to keep frogs off the road's surface within 0.25 miles of the pond under Design Option B [Design Option B only].

The following measures, which are included in the project, will reduce the project's significant effects on the California tiger salamander to a less-than-significant level:

MM-T&E-3.1: As described in Section 2.18.5, the project will fully mitigate for impacts to aquatic/wetland habitat, the habitat type of greatest value to tiger salamanders.

MM-T&E-3.2: The project will pay development fees to the Santa Clara Valley HCP/NCCP for impacts to upland non-breeding tiger salamander habitat. For more information on the HCP/NCCP, please see Section 2.17.5.

MM-T&E-3.3: If MM-T&E-3.2 turns out to be infeasible for some or all of the project, mitigation for impacts to upland non-breeding tiger salamander habitat will consist of the purchase of credits from a mitigation bank that serves the project area. If no banks or credits are available, then the project will develop and implement a plan for the preservation and enhancement of non-breeding tiger salamander habitat at off-site location(s).

[**Note:** MM-T&E-3.3 will be implemented only if MM-T&E-3.2 is determined to be partially or completely infeasible.]

If project-specific mitigation for impacts to California tiger salamander habitat is necessary, a wildlife ecologist will develop a California tiger salamander HMMP. This plan will contain the same types of information described above

in MM-ANIMAL-6.5, but will focus on the tiger salamander instead of the burrowing owl. At a minimum, success criteria will include the presence of suitable habitat conditions for the tiger salamander, and provision of ecological functions and values equal to or exceeding those in the tiger salamander habitat that is impacted.

MM-T&E-3.4: The 12 mitigation measures listed above (i.e., MM-T&E-2.4 through MM-T&E-2.15) that are designed to prevent harm to individual California red-legged frogs will also serve to prevent harm to individual California tiger salamanders.

2.22 CONSTRUCTION IMPACTS

This section describes the impacts of the Build Alternative that will occur during the construction phase of the project. The No Build Alternative will not result in any changes to existing facilities or conditions and, therefore, there would be no construction impacts.

2.22.1 Traffic Effects/Street Closures During Construction

Except for temporary off-peak lane closures, the same number of traffic lanes will be maintained on U.S. 101 and local streets during the construction period. Narrowed lanes on U.S. 101 through the construction zone will be likely.

Prior to construction, a Transportation Management Plan (TMP) will be prepared. The TMP will address all traffic-related aspects of construction including, but not limited to: traffic handling in each stage of construction, pedestrian safety/access, emergency access, and bicycle safety/access. A component of the TMP will involve public dissemination of construction-related information through notices to the neighborhoods, press releases, and the use of changeable message signs.

The effect of the project on emergency vehicle response times during construction will be minimal because road closures are not anticipated and lane closures will be limited to off-peak periods. Coordination with emergency services regarding lane closures, etc. will be part of the TMP.

Impact CON-1: Traffic impacts during construction will not be substantial. Street closures and detours are not anticipated. [**Less-than-Significant Impact**]

2.22.2 Effects on Businesses during Construction

No roadway or driveway access to businesses is expected to be severed during the construction of the project.

Impact CON-2: Access to businesses will not be affected during construction of the proposed project. **[No Impact]**

2.22.3 Effects on Utilities during Construction

The project will require the relocation of a number of overhead and underground utility lines (e.g., electric poles, telephone poles, anchor poles, gas pipelines, water lines, fiber-optic cables, etc.) that are located within the footprint of the project. However, no disruption of any utility service(s) for an extended period of time (i.e., more than 24 hours) is expected to be necessary.

Impact CON-3: Disruption of utility service during construction will not be substantial. **[Less-than-Significant Impact]**

2.22.4 Air Quality Effects during Construction

Construction-related emissions are generally short-term in duration but may still cause adverse air quality impacts unless proper emission control measures are implemented.

Construction activities such as earthmoving, excavation and grading operations, construction vehicle traffic and wind blowing over exposed earth will generate exhaust emissions and fugitive particulate matter emissions that would affect local and regional air quality. Construction activities are also a source of organic gas emissions. Asphalt used in paving is a source of organic gases for a short time after its application. Solvents in adhesives, non-waterbase paints, and thinners would also evaporate into the atmosphere and would participate in the photochemical reaction that creates urban ozone. Many types of construction equipment emit diesel exhaust, which is known to result in adverse health effects.

Construction dust could affect local air quality at various times during construction of the project. The dry, windy climate of the area during the summer months creates a high potential for dust generation when and if underlying soils are exposed to the atmosphere.

The effects of construction activities would be increased dustfall and locally elevated levels of PM10 downwind of construction activity. Construction dust has the potential for creating a nuisance at nearby properties, and may constitute a health effect for children or persons with chronic health problems.

Standard Caltrans construction management practices are adequate to assure that associated air quality impacts will be minimal. These include requiring emission controls on construction equipment and spraying water on exposed surfaces to minimize dust.

Impact CON-4: Without proper emissions control measures in place, air quality impacts during construction could be substantial. **[Less-than-Significant with Mitigation Listed Below]**

The following measures will be implemented by the project for the purpose of avoiding or minimizing air quality effects during construction:

- MM-CON-4.1:** During construction, the project will follow Caltrans' Standard Specification 14-8.02, Standard Specification 10, and Standard Specification 18, which address the requirements of BAAQMD and dust control and dust palliative application, respectively.
- MM-CON-4.2:** The project will implement all feasible PM10 construction emissions control measures required by the BAAQMD, as indicated in Table 37.

2.22.5 Noise and Vibration Effects during Construction

Construction phases anticipated with the project would include demolition, clearing and grubbing, earthwork, construction of bridges and ramps (including pile driving), and paving. Each construction phase would require a different combination of construction equipment necessary to complete the task and differing usage factors for such equipment.

Highway construction activities typically occur for relatively short periods of time as construction proceeds along the project's alignment. Construction noise would mostly be of concern in areas where impulse-related noise levels from construction activities would be concentrated for extended periods of time (e.g., U.S. 101/SR 25 interchange, bridge widening or replacement), where noise levels from individual pieces of equipment are substantially higher than ambient conditions, or when impulse-related noise levels occur during noise-sensitive nighttime hours. Noise associated with the construction of the project would be a temporary effect that will cease upon completion of construction activities.

Construction of the project is anticipated to occur during daytime and nighttime hours. During the daytime, ambient traffic noise levels are on average about 69 dBA Leq(h) at the nearest unshielded locations. Construction activities proposed by the project would generate hourly average noise levels above ambient average daytime traffic noise levels when these activities occur within approximately 315 feet of existing sensitive receivers. At night, ambient average traffic noise levels are approximately 66 dBA Leq(h). Construction activities occurring within about 450 feet of receivers would generate hourly average noise levels above ambient traffic noise conditions.

Project-generated construction noise would primarily result from the operation of vehicles and equipment. The highest noise levels would result from impulsive construction techniques such as pile driving and demolition activities including the use of hoe rams. FHWA's Roadway Construction Noise Model was used to calculate the maximum and average noise levels anticipated during each phase of construction at a distance of 50 feet. Table 38 presents the construction noise levels calculated for each major phase of the project. Noise generated by construction equipment drops off at a rate of 6 dB per doubling of distance. Shielding by terrain or existing noise barriers could provide an additional 5 to 10 dBA of noise reduction.

T A B L E 3 7

FEASIBLE CONTROL MEASURES FOR CONSTRUCTION EMISSIONS OF PM10

Basic Control Measures. The following controls will be implemented at all construction sites.

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Pave, apply water three times daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites. Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

Enhanced Control Measures. The following measures will be implemented at construction sites greater than four acres in area.

- Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (i.e., previously graded areas inactive for 10 days or more).
- Enclose, cover, water twice daily, or apply (nontoxic) soil binders to exposed stockpiles (e.g., dirt and sand).
- Limit traffic speeds on unpaved roads to 24.1 kilometers per hour (15 miles per hour). Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

Optional Control Measures. The following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors, or for any other reason may warrant additional emissions reductions, but the project applicant is not required to implement.

- Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
- Install windbreaks or plant trees or vegetative wind breaks at windward side(s) of construction areas.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
- Limit the area subject to excavation, grading, and other construction activity at any one time.

Source: Assessing the Air Quality Impacts of Projects, BAAQMD, December 1999.

TABLE 38**CONSTRUCTION EQUIPMENT NOISE LEVELS AT 50 FEET**

Construction Phase	Maximum Noise Level (Lmax dBA)	Hourly Average Noise Level (Leq dBA)
Demolition	90	84
Clear and Grub	81	79
Earthwork	82	84
Paving	85	85
Structures (with pile driving)	101	95
Structures (without pile driving)	83	84

Source: U.S. 101 Improvement Project Noise Study Report, 2009.

Impact CON-5: Noise from construction activities is likely to constitute a temporary annoyance at residences located along U.S. 101. Construction activities may also generate noticeable ground vibration at nearby residences, with pile driving being the construction source that could produce the greatest ground vibrations. **[Less-than-Significant with Mitigation Listed Below]**

The following measures will be implemented by the project for the purpose of avoiding or minimizing noise and vibration effects during construction:

MM-CON-5.1: All internal combustion engine driven equipment will be equipped with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

MM-CON-5.2: Unnecessary idling of internal combustion engines within 100 feet of residences will be strictly prohibited.

MM-CON-5.3: Staging of construction equipment within 200 feet of residences will be avoided. All stationary noise-generating construction equipment, such as air compressors and portable power generators, will be located as far as practical from residences.

MM-CON-5.4: All construction equipment will be required to conform to Section 14-8.02 - Sound Control Requirements of the latest Standard Specifications.

MM-CON-5.5: Nighttime construction work within 450 feet of residential land uses will be avoided where feasible.

MM-CON-5.6: Demolition and pile driving activities will be limited to daytime hours to the greatest extent possible. If nighttime, demolition or pile driving is required, a construction noise monitoring program will be implemented to provide additional mitigation as necessary (in the form of noise control blankets or other temporary noise barriers, etc.) for affected receivers.

2.22.6 Water Quality Effects during Construction

The project will involve excavating and grading activities for the purpose of widening U.S. 101, constructing frontage roads, extending Santa Teresa Boulevard, reconstructing the U.S. 101/SR 25 interchange, and constructing related improvements (e.g., retaining walls, detention basins, etc.). These activities have the potential to degrade water quality in the form of sedimentation, erosion, and fuels/lubricants from equipment. In the project area, the water quality of various creeks and rivers could be affected by construction activities. Since these waterways support numerous wildlife and plant species, a short-term degradation of water quality could adversely affect such species.

Impact CON-6: Construction activities have the potential to adversely affect water quality in nearby creeks. **[Less-than-Significant with Mitigation Listed Below]**

In order to avoid or minimize the potential for water quality impacts to occur, the project will implement the following measures:

MM-CON-6.1: Active paved construction areas will be swept as needed.

MM-CON-6.2: Silt fencing or straw wattles will be used to retain sediment on the project site.

MM-CON-6.3: Temporary cover of disturbed surfaces or temporary slope protection measures will be provided per regulatory requirements and Caltrans' guidelines to help control erosion. Permanent cover/revegetation will be provided to stabilize the disturbed surfaces after construction has been completed.

MM-CON-6.4: No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products, or other organic or earthen material will be allowed to enter into or be placed where it may be washed by rainfall or runoff into any waterways.

MM-CON-6.5: Best Management Practices (BMPs) will be utilized by the contractor(s) during construction. The BMPs will be incorporated into a Stormwater Pollution Prevention Plan for the project, as required by Caltrans' NPDES permit.

2.23 CUMULATIVE IMPACTS

2.23.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines.

2.23.2 Impacts of the Build Alternative

In a cumulative impacts analysis, the identification of "past, present, and reasonably foreseeable future actions" can utilize either the "list approach" or the "adopted plan" approach. The list approach identifies specific projects in the vicinity, typically provided by a local planning department. The adopted plan approach relies on a general plan or transportation plan or other planning document, which by definition accounts for cumulative growth in a defined area.

For this analysis, the adopted plan approach was utilized for the assessment of cumulative traffic, noise, and air quality impacts as it is compatible with the nature of the proposed infrastructure project, which is to accommodate projected transportation demand over the long term. As examples, VTA's Countywide traffic model, which was utilized to project future build and no build conditions, is based on the planned growth of Santa Clara County, as contained in the adopted general plans of each jurisdiction within that county. The model also accounts for planned growth in adjacent areas, including the Monterey Bay Area.

In addition to the adopted plan approach, local agencies were contacted to determine if there were any recent and/or reasonably foreseeable projects adjacent to U.S. 101 that could contribute to one or more cumulative impacts. Two proposed projects were identified:

- The owners of the existing Freeman Quarry, which is located approximately 1,500 feet west of U.S. 101 and roughly 0.7 miles south of the U.S. 101/SR 25 interchange, have applied to Santa Clara County for approval to expand. [Note: The quarry is visible on Figures 3 and 4.] If approved, the area of the quarry's operations would expand from 60 acres to 150 acres and the annual volume of material to be extracted would increase from 500,000 tons to 1.5 million tons. This project is discussed below for subject areas where cumulative impacts could occur: traffic, visual, biology, and noise.
- Caltrans is proposing to upgrade/widen SR 25 to a 4-lane expressway between the UPRR crossing (just west of Bloomfield Avenue) and San Felipe Road in Hollister. The SR 25 project is adjacent to the U.S. 101 Improvement; the UPRR crossing of SR 25 is the boundary between the two projects. That project is currently undergoing environmental review. The SR 25 project is discussed below for the subject areas where cumulative impacts could occur: traffic, visual, biological resources, and farmlands.

The discussion, below, addresses only those resource areas where the project will result in an impact and, therefore, there is a potential for a cumulative impact. Per CEQA, if a project would not cause direct or indirect impacts on a resource, it would not contribute to a cumulative impact on that resource and need not be further evaluated.

2.23.2.1 *Cumulative Traffic Impacts*

For traffic, the Resource Study Area (RSA) was defined as the area within the project limits, as well as the surrounding area where the project will result in measurable changes in traffic patterns. Thus, the RSA includes the freeway segments, arterial streets, and intersections identified in the tables shown in Section 2.6.

Cumulative development has resulted in a significant increase in traffic on U.S. 101, SR 25, and in the project area as a whole, and future increases are projected to occur. As described in Section 2.6.2.5, the traffic forecasts that were prepared for year 2035 take into account traffic from future development planned for in the approved general plans of the cities in Santa Clara County. The forecasts also account for planned growth in the region, including the Monterey Bay Area, as well as planned improvements to the transportation network including the adjacent project that proposes to upgrade SR 25 to a 4-lane expressway.

The proposed expansion of Freeman Quarry will add up to approximately 40 additional AM peak-hour truck trips. There is no PM peak-hour traffic associated with the quarry as the quarry is prohibited from operating during that timeframe. Under existing conditions, all quarry-related traffic enters and exits U.S. 101 via a driveway located south of the U.S. 101/SR 25 interchange. Since there is a center divider on U.S. 101, traffic desiring to head north must first drive south on U.S. 101 to the Y Road/Betabel Road interchange before heading north. Under the No Build Alternative, this pattern will remain in place.

Under the Build Alternative, all quarry-related traffic will access U.S. 101 via the reconstructed U.S. 101/SR 25 interchange, which will be safer and will eliminate the existing circuitous route.

The improvements that would be constructed under the proposed project would not contribute toward any increase in traffic volumes on the roadway network. This statement is based on the fact that, unlike a development project that generates traffic (e.g., a shopping center, residential subdivision, industrial park, etc.), this project will not add traffic to the roadway network. Instead, this project, like most infrastructure projects, is intended to *accommodate* traffic demand.

As described in Section 2.6, the facilities to be constructed by the project will improve traffic safety and operations. Therefore, by definition, the project would not result in an adverse cumulative traffic impact because the project's overall traffic effect would be beneficial.

Impact CU-1: The project's overall effect on traffic will be beneficial and, therefore, the project will not result in an adverse cumulative traffic impact. **[No Cumulative Impact]**

2.23.2.2 *Cumulative Loss of Agricultural Land*

For agricultural lands, the RSA is defined as Santa Clara County, as that is the jurisdiction where the project will result in the loss of prime farmland. Although Santa Clara County encompasses more than 1,300 square miles, most of the County's prime farmland is located in the southern portion along both sides of U.S. 101, including the project segment.

Lands with soils that support prime agricultural uses are a finite resource. Cumulative development has resulted in a significant loss of prime farmland in Santa Clara County. Between 1984 and 2008, the acreage of prime farmland in Santa Clara County decreased from 38,000 acres to 18,800 acres, which is an average annual loss of approximately 800 acres.⁵⁰ Although programs such as Williamson Act contracts and the purchase of farmland conservation easements are in place to preserve this resource, the conversion of prime farmland to non-agricultural uses is typically a significant and unmitigable impact.

In the immediate project area, a project that would widen SR 25 to a 4-lane expressway is currently being evaluated by Caltrans. According to that project's Draft EIR/EIS, the upgrade of SR 25 to an expressway will result in the loss of 85 acres of prime farmland in Santa Clara County.

As discussed in Section 2.3, the proposed project will result in the loss of 156.8 acres of prime farmland under Design Option A and 121.8 acres of prime farmland under Design Option B. Although the project

⁵⁰Source: California Department of Conservation, Farmland Mapping & Monitoring Program, Historic Land Use Conversion for Santa Clara County (1984 - Present) [www.conservation.ca.gov].

proposes to purchase farmland conservation easements, this impact cannot be mitigated to a less-than-significant level.

Impact CU-2: The loss of agricultural lands from cumulative development would be significant, and the contribution of the proposed project to this impact would be considerable. **[Significant Cumulative Impact]**

2.23.2.3 *Cumulative Impacts to Biological Resources*

For biological resources, the RSA encompasses the project footprint and those adjacent lands where an indirect effect could occur.

Historically, cumulative development has resulted in a substantial loss of valuable ecological habitats in the greater project area including wetlands, oak woodlands, riparian and aquatic. The loss of these and other habitats has directly impacted many plant and animal species, resulting in direct threats to the continued existence of a number of species. Another related effect of cumulative development has been the creation of barriers and hazards to the migration of animals along various wildlife corridors.

All of these factors led to the enactment of various statutes, regulations, and policies whose goals are to halt, and in many cases reverse, this trend. These include the federal Endangered Species Act, the California Endangered Species Act, the Clean Water Act, the Porter-Cologne Water Quality Control Act, NEPA, and CEQA. These statutes require private and public projects to include measures that avoid and/or fully mitigate for impacts to sensitive habitats and the special-status species that are found within them. The proposed Santa Clara Valley HCP/NCCP, in which this U.S. 101 Improvement Project is a “covered activity”, is an effort to address this issue on a large-scale, as opposed to a piecemeal, basis.

In the case of the proposed project, while it would result in impacts to various habitats and special status animal species, it would not contribute to cumulative impacts because mitigation and avoidance measures are included in the project. Specifically, all loss of sensitive habitats resulting from the proposed highway improvements will be fully mitigated by the creation of replacement habitats. In fact, replacement-to-impact ratios are greater than 1:1. See Section 2.17, *Natural Communities*, Section 2.18, *Wetlands*, Section 2.20, *Animal Species*, and Section 2.21, *Threatened & Endangered Species*.

The proposed project would also include measures that would not only mitigate for impacts to wildlife movement, but would improve the ability of wildlife to traverse the U.S. 101 corridor relative to existing conditions. These measures include the replacement of existing culverts with those that are more conducive to use by wildlife, the construction of additional undercrossings, and the use of “wildlife fencing”. Please see Section 2.17, *Natural Communities*, for details. The net effect of these measures is that the project would not contribute to cumulative impacts to wildlife movement.

Similarly, the proposed improvements to SR 25 and the expansion of Freeman Quarry, if approved, would not contribute to the cumulative loss of sensitive habitats because mitigation and avoidance measures will be required by regulatory agencies as conditions of approval.

Impact CU-3: The project would not contribute to a cumulative impact on important biological resources. **[No Cumulative Impact]**

2.23.2.4 *Cumulative Air Quality Impacts*

For air quality, the RSA was defined as the land uses adjacent to the freeway segments within the project limits. These land uses are those where project-related changes, coupled with increased traffic from ongoing growth, could result in cumulatively substantial increases in emissions of air pollutants.

Cumulative development has resulted in a substantial degradation in ambient air quality in the greater project area. However, due to emissions control technology, overall air quality has been improving in recent years. Although most present and future development will likely increase emissions, improvements in technology are largely expected to offset such increases. Regulatory strategies, including compliance with California's AB 32 (see Section 2.15), will also lead to a reduction in emissions.

The proposed project will not contribute to the region's emissions because it will not generate additional vehicle trips. Further, as described in Section 2.14, exceedances of federal and state carbon monoxide standards are not expected in the project area, either with or without the proposed project.

Impact CU-4: Although growth in the region will continue, improvements in technology and the implementation of regulations aimed at emissions reductions are expected to offset the air quality effects of such growth. **[Less-than-Significant Cumulative Impact]**

2.23.2.5 *Cumulative Noise Impacts*

For noise, the RSA was defined as the land uses adjacent to U.S. 101 within the project limits. These land uses are those where project-related changes, coupled with increased traffic from ongoing growth, could result in cumulatively substantial increases in noise.

As discussed in Section 2.16, the primary source of noise in the project area is traffic on U.S. 101. The improvements that will be implemented under the proposed project, including the highway widening, new U.S. 101/SR 25 interchange, and the new frontage roads, will affect noise levels at adjacent land uses. The change in noise will vary by location, and will range from a decrease of 1 dBA to an increase of 9 dBA, which is less than the 12-dB increase that would be considered substantial. These changes in noise account for both the improvements proposed by the project and the increase in traffic that will result from cumulative development.

If approved, any additional noise from expanded mining activities at the Freeman Quarry will not combine with noise from U.S. 101 at any given receptor. This conclusion is based on the fact that the quarry is separated from U.S. 101 by elevated terrain and 1,500 feet horizontally. Therefore, noise from these two noise sources will not be cumulative.

The previous paragraph notwithstanding, it is estimated that there will be approximately 40 additional peak-hour truck trips associated with expanded quarry operations. These trucks will use the new frontage road to travel between the quarry and U.S. 101, which will add to the noise increases associated with the proposed project at two single-family residences, Receptors 21 and 22 in Table 32. Noise associated with these truck trips will add roughly 1 dBA to the noise levels shown in Table 32 for these receptors. This increase would not be cumulatively significant.

Impact CU-5: Noise increases from the proposed project, ongoing development in the region, and the proposed Freeman Quarry expansion will not be cumulatively significant. **[Less-than-Significant Cumulative Impact]**

2.23.2.6 *Cumulative Visual Impacts*

For visual impacts, the RSA consists of the area encompassing the four key viewpoints described in Section 2.7. The key viewpoints were chosen to help evaluate the project's visual impact as experienced by viewers at various locations in the vicinity of U.S. 101. These viewpoints are representative of the visual environment experienced by a cross-section of viewers.

As discussed in Section 2.7, changes to the visual setting due to the proposed project will primarily occur in the vicinity of the reconstructed U.S. 101/SR 25 interchange. Such changes, which are represented in the four key views, will result from the new SR 25 structure over U.S. 101, new ramps, new frontage roads, the extension of Santa Teresa Boulevard, and new retaining walls. Visual impacts associated with components of the project unrelated to the U.S. 101/SR 25 interchange would not be substantial.

The visual changes associated with the adjacent proposed SR 25 Expressway Project will not occur in the same location as the four key viewpoints that comprise the RSA.

Freeman Quarry is not visible from the segment of U.S. 101 that is in the vicinity of the U.S. 101/SR 25 interchange as there is intervening elevated terrain. The quarry is only visible from U.S. 101 at greater distances such as near the U.S. 101/Sargent bridges over the UPRR and Tar Creek. Therefore, any changes in the visual setting that will result from the expansion of the quarry will not combine with visual changes due to the proposed project to create cumulative effects.

Impact CU-6: Visual impacts from the proposed project will not occur in the same viewshed as the visual impacts from the expansion of Freeman Quarry and the upgrade of SR 25 to an expressway. **[No Cumulative Impact]**

2.23.2.7 *Cumulative Hazardous Materials Impacts*

The RSA for hazardous materials is defined as the footprint of the project as the effect of the project with regard to exposure to hazardous materials is limited to the construction area.

The proposed project, along with other development, has the potential to expose construction workers to the adverse effects of hazardous materials (e.g., ADL, lead-based paint, asbestos-containing building materials, etc.). However, implementation of mitigation and avoidance measures, such as those listed in Section 2.13, *Hazardous Materials*, are required on a project-by-project basis to avoid or reduce hazardous materials impacts to a less than significant level. Specifically, regulations set forth by the Occupational Safety & Health Administration (OSHA), EPA, and other agencies are designed to prevent construction workers from exposure to hazardous materials at levels that would be cumulatively significant. Therefore, cumulative development will not result in a significant cumulative hazardous materials impact and the proposed project will not contribute towards a significant cumulative impact.

Impact CU-7: Exposure to hazardous materials from the proposed project and ongoing development in the region will not be cumulatively significant. [**Less-than-Significant Cumulative Impact**]

2.23.2.8 *Cumulative Water Quality Impacts*

The RSA for water quality is defined as the watersheds within which the project is located.

Runoff from past and existing development, as well as from agricultural operations, has been identified as a significant source of water pollution. Runoff flows untreated to local creeks, rivers, San Francisco and Monterey Bays, and the ocean, carrying pollutants that are detrimental to the beneficial uses of these water bodies. Examples of pollutants commonly generated include: sediment from construction sites; pesticides, herbicides, and fertilizers from agricultural fields; products of internal combustion engine operation such as hydrocarbons from automobiles; heavy metals, such as copper from automobile brake pad wear and zinc from tire wear; dioxin as a product of combustion; mercury resulting from atmospheric deposition; and naturally-occurring minerals from local geology.

In addition to the pollution issue, the increased peak flows and volumes of stormwater associated with urbanization have led to adverse impacts such as bank erosion, channel widening, flooding, channel modification and loss of the natural floodplain. This occurs because development typically increases the amount of impervious surface area within a watershed by converting natural ground cover to impervious surfaces such as paved highways, streets, rooftops, and parking lots, thereby diminishing the stormwater retention, detention and purification characteristics provided by the vegetated soils.

In the project area, runoff from U.S. 101, SR 25, and local roadways contributes to the degradation of water quality, as does runoff from the many acres of farmland in the project area. The proposed project will add to the amount of impervious surfaces in the area, which will contribute to a degradation in water

quality for the reasons stated above. The proposed improvements to SR 25 will have similar impacts. The proposed expansion of Freeman Quarry will also have the potential to affect water quality due to the increase in mining activities.

In recent years, however, new regulations promulgated by the U.S. EPA and California Department of Water Resources have gone into effect that are requiring individual projects to incorporate measures that will offset these impacts. For example, as discussed in Section 2.10, the proposed project is incorporating biofiltration strips and swales into its design for the purpose of treating highway runoff before discharge into local waterways. If approved and constructed, the SR 25 project will be required to incorporate water treatment features into its design. Similarly, Freeman Quarry will be required to comply with an industrial NPDES permit that contains specific provisions related to avoiding the water quality impacts associated with quarrying activities. The intent of the new regulations is that each project should be responsible for treatment of its water quality impacts, thereby avoiding a cumulative degradation of water quality over the long-term.

Impact CU-8: In view of the applicability of ordinances, laws and regulations that would avoid the occurrence of significant water quality impacts, it is concluded that cumulative water quality impacts will not be significant. **[Less-than-Significant Cumulative Impact]**

2.23.2.9 *Cumulative Floodplain Impacts*

For floodplains, the RSA is defined as the floodplains crossed by the project segment of U.S. 101.

As discussed in Section 2.9, the proposed project has been designed to avoid and mitigate impacts to the floodplains that will be affected by the highway improvements. Further, upon completion of the project, the degree to which U.S. 101 is subject to flooding will be less than that which occurs under existing conditions. This has been achieved through a combination of culverts, pipes, bridges, detention basins, and a flood control channel that will be constructed as an integral part of the project. Therefore, the project will not contribute to any cumulative floodplain impacts.

Impact CU-9: The project has been designed to avoid floodplain impacts. **[No Cumulative Impact]**

2.23.3 Impacts of the No Build Alternative

Under the No Build Alternative, there would be no changes to existing facilities and, therefore, no environmental impacts on the existing environment. Since the No Build Alternative would not result in environmental impacts, by definition there would be no cumulative impacts.