

---

## 2.1 HUMAN ENVIRONMENT

### 2.1.1 LAND USE

#### Existing and Future Land Use

##### **Existing Land Use Patterns**

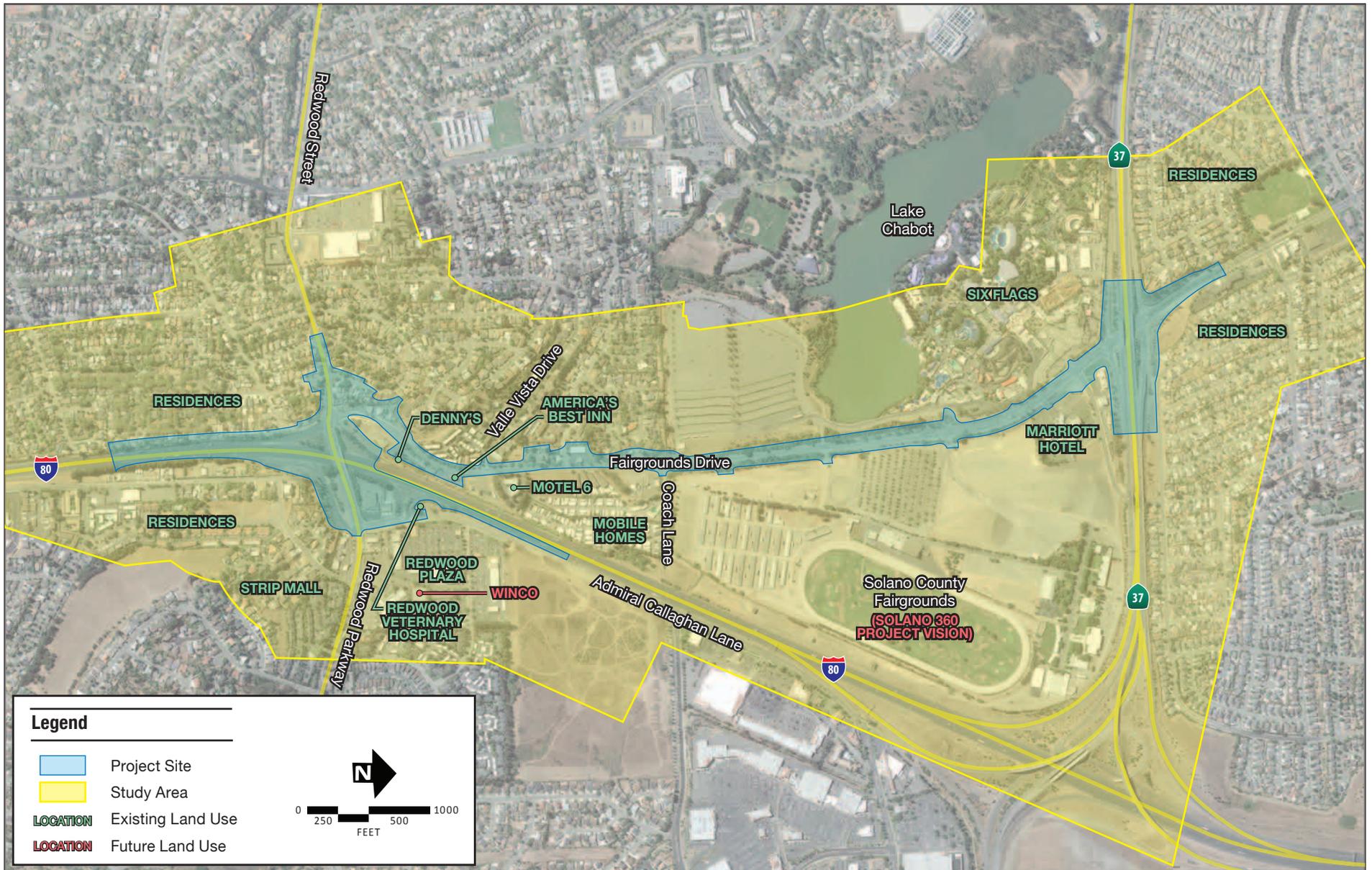
The proposed Build Alternative would be constructed within an existing urban context, with a mixture of commercial, office, residential, and recreation facility developments. The land use study area is shown in **Figure 2-1**, which includes the proposed Build Alternative and surrounding land uses within 1,000 feet. Beginning at the southernmost portion of the study area, the Redwood Parkway/I-80 and Redwood Parkway/Fairgrounds Drive intersections are surrounded by a mixture of commercial and residential development. The northeastern corner of the Redwood Parkway/I-80 intersection, just west of Admiral Callaghan Lane, includes a furniture store and an equipment rental store. The area to the east of Admiral Callaghan Lane is developed with the Redwood Plaza, which includes a Shell gas station, Safeway grocery store, AutoZone auto supply store, a Starbucks coffee shop, and other small commercial vendors. The Redwood Veterinary Hospital is also located northeast of this intersection.

The area to the south of the Redwood Parkway/I-80 intersection is primarily developed with single-family homes, with the exception of a small strip mall with a pizza delivery shop and other small commercial vendors.

The area surrounding the Redwood Parkway/Fairgrounds Drive intersection is comprised of a mix of single-family and multi-family homes, as well as a gas station, dentist office, Denny's restaurant, and an America's Best Inn motel. A private day care facility operates from a single-family home on Redwood Parkway, just west of Fairgrounds Drive.

Farther north along the study area, land uses surrounding the intersection of Valle Vista Avenue/Fairgrounds Drive includes a mix of residential and commercial developments. Multi-family homes, a Chinese restaurant (Annie's Panda Garden), and a surface asphalt-paved parking area utilized for storing vacant mobile homes are located to the south of this intersection. The Lee's Market and Gas Station, JJ's Fish and Chicken restaurant, and Motel 6 motel are located near the Sereno Drive/Fairgrounds Drive intersection.

The area on Fairgrounds Drive between Valle Vista Avenue and Coach Lane is developed with multi-family homes and medical office buildings, as well as vacant lands. The area between Coach Lane and SR 37 on Fairgrounds Drive is primarily developed with recreational facilities. Six Flags Discovery Kingdom Amusement Park (Six Flags) and associated surface parking areas are located to the west of Fairgrounds Drive. Lake Chabot is also on the west side of Fairgrounds Drive. The Solano County Fairgrounds and associated surface parking areas are located to the east, along with a Courtyard Marriot hotel and fast-food restaurants. The area to the north of SR 37 on Fairgrounds Drive is comprised of single-family homes, a gas station, and Best Western Inn hotel.



Land Use Study Area and Existing and Future Land Uses

Figure

### **Planned Development**

There are two planned developments within the land use study area. Solano County and the City of Vallejo are planning for the redevelopment of the 149-acre Solano County Fairgrounds property. The Solano County Fairgrounds are now expected to be redeveloped with a mixture of hotel, retail, and entertainment uses as described in the Solano 360 Vision Report, dated May 28, 2009. The Solano 360 Project Vision seeks to establish a pedestrian-friendly, community gathering place, and destination for visitors. In addition, the project intends to generate revenues for the County and City, introduce a mix of complementary land uses, and to enhance the physical connectivity with the adjacent Six Flags Discovery Kingdom, downtown Vallejo, and existing commercial operations. This redevelopment is expected to be in place by 2030. **Figure 2-1** shows planned projects in the project vicinity.

The City of Vallejo is currently processing a plan to construct a new Winco Foods Store (a discount grocery store) at the intersection of Redwood Parkway and Admiral Callaghan Lane, within the existing Elks Club property. The project is consistent with the existing commercial development at this intersection.

### **Consistency with State, Regional, and Local Plans and Programs**

#### **Regional Transportation Plans**

The project is included in the Metropolitan Transportation Commission's (MTC) fiscal year 2010/2011 Transportation Improvement Program (TIP) as project number SOL090015. MTC approved the financially constrained TIP on October 27, 2010. Following approval by the Department, the Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) incorporated the TIP into the Federal Statewide Transportation Improvement Program (FSTIP) on December 14, 2010.

The project is also included in the fiscally-constrained Solano Regional Transportation Plan (RTP) Project List that was adopted by STA on May 22, 2011. This list was prepared by Solano County for submittal to MTC's 2013 update to its RTP (also known as T-2040 Update "Plan Bay Area").

Consistent with the goals of the 2010/2011 TIP, MTC sponsored development of the San Francisco Bay Area Regional Intelligent Transportation System (ITS) Plan as a roadmap for transportation systems integration in the Bay Area over the next 10 years. The ITS Plan identifies ITS strategies such as vehicle detection, ramp metering, closed caption television cameras, and changeable message signs for the I-80 corridor.

### **Solano Bicycle Transportation Plan**

In December, 2011, STA published the Final Bicycle Transportation Plan (Bicycle Plan) for Solano County. The Bicycle Plan serves as a guide to planning and engineering professionals to encourage the development of a unified bicycle system throughout the Solano County. The system consists of the physical bikeway routes, way finding signage, and associated amenities such as bicycle lockers, showers, etc. The Bicycle Plan focuses on a bikeway network that will provide origin and destination connections in and surrounding Solano County. The Bicycle Plan includes the potential construction of an off-street bike/pedestrian path (Class I) along Fairgrounds Drive, from Marine World Parkway to Redwood Street.

### **City of Vallejo General Plan**

The Build Alternative is located within the jurisdiction of the City of Vallejo. The City of Vallejo General Plan provides policies and goals for the development along Fairgrounds Drive.

The City of Vallejo General Plan Circulation and Traffic Element includes planning several goals, objectives and policies that relate to the Build Alternative.

*Mobility Goal:* To have mobility for all segments of the community with a transportation system that minimizes pollution and conserves energy and that reduces travel costs, accidents and congestion.

Policy 1. When evaluating future expansion of street and highways, consider incorporation of public transit, bicycle and pedestrian right-of-way, and distribution of goods and services as a system to maintain the citizenry, rather than as a system devoted solely to the accommodation of the private automobile.

Policy 4. The toll of deaths and injuries that result from transportation accidents should be kept to a minimum.

*Street and Highway System Goal:* To have a functional street and highway system that provides appropriate access to the industrial, commercial and residential areas of the city.

*Traffic Safety Goal:* To have a street and highway system that is safe to use.

Policy 3. Sight distances should be consistent with probable traffic speed, terrain and alignments. Horizontal and vertical street alignments should relate to the natural contours of the site insofar as is practical and should be consistent with other design objectives. They should be selected to minimize grading quantities. Existing unpaved street rights-of-way too steep for cars or not needed should be abandoned or unused to provide landscaping.

*Compatibility with Adjoining Land Uses Goal:* To have a street and highway system that services all land uses with a minimum adverse impact.

Policy 4. Street widening should not be approved in existing neighborhoods where there is significant opposition from the immediate residents. Alternative mitigation should be initiated prior to such widening, including modification of street signalization, rerouting of cross-town traffic, creating one-way streets and eliminating on street parking. Street widening should include street planting to give an immediate landscaped appearance.

## **Environmental Consequences**

### *Compatibility with Regional Transportation Plans*

The Build Alternative is consistent with the project list included in MTC's TIP, as incorporated into FHWA's FSTIP. The Build Alternative is also consistent with the project list incorporated into STA's current RTP.

The Build Alternative is consistent with MTC's ITS plan in that it proposes to maintain the existing I-80 traffic operations system elements like in-road sensor loops<sup>1</sup>, and would include ramp metering at the I-80/Redwood Parkway interchange.

### *Compatibility with the Solano Bicycle Transportation Plan*

The Bicycle Plan includes the potential construction of an off-street bike/pedestrian path (Class I) along Fairgrounds Drive, from Marine World Parkway to Redwood Street. Under the Build Alternative, this bike path would be changed to a designated on-street bike lane (Class II). Although the Build Alternative does not propose the construction of a separated bike path, such as the one proposed in the Bicycle Plan, the proposed improvements would establish the bicycle network connectivity the Bicycle Plan intended to establish along Fairgrounds Drive. As such, the proposed Build Alternative is not considered to be in conflict with the Bicycle Plan.

### *Compatibility with City of Vallejo General Plan*

The Build Alternative is consistent with the applicable goals and policies presented in the Circulation and Traffic Element of the City of Vallejo General Plan. The Mobility Goal encourages mobility for communities with a transportation system that minimizes pollution, conserves energy, and reduces travel costs, accidents and congestion. The Build Alternative would alleviate roadway congestion by increasing the capacity of the local roadway to accommodate for existing and planned increases in traffic. This in turn would minimize pollution and conserve energy usually emitted or wasted by idling automobiles.

The Build Alternative would also be consistent with the Street and Highway System Goal, which encourages functional street and highway systems in the City, and the Traffic Safety Goal, which calls for street and highway systems to be safe for use. As the Build

---

<sup>1</sup> When you approach a traffic signal you may notice a rectangular "scar" where the road surface has been cut with a saw and then re-sealed. This is the sensor loop. The system detects (through detection loops in the pavement) traffic volumes so that the "green-light" signals can be appropriately timed.

Alternative objectives include improving traffic flow and safety on the local roadway network, the project would be consistent with these goals.

The Compatibility with Adjoining Land Uses Goal promotes street and highways systems that service land uses with a minimum adverse impact. Policy 4 of the goal states that street widening should not be approved in existing neighborhoods where there is significant opposition from the immediate residents. Although the Build Alternative would displace several residential and commercial businesses along the project corridor, these displacements would not divide the existing community within the project area.

### **No-Build Alternative**

Under the No-Build Alternative, Fairgrounds Drive would maintain its existing configuration. No realignment of the Fairgrounds Drive/Redwood Street intersection would occur. There would be no improvements to the SR 37/Fairgrounds Drive or I-80/Redwood Parkway/Admiral Callaghan Lane interchanges and there are no improvements proposed to the existing local roadway network, the No-Build Alternative would not increase the local roadway network capacity to accommodate existing and approved redevelopment and growth in the area. In addition, the increased traffic volumes without capacity improvements would most likely worsen the congestion and slow traffic flow on the local roadway network. Without the realignment of the Fairgrounds Drive/Redwood Street intersection, the No-Build Alternative would not improve the current safety issues related to limited sight distance in this area.

As such, the No-Build Alternative is not consistent with any of the applicable local or regional planning documents described above.

### **Avoidance, Minimization, and/ or Mitigation Measures**

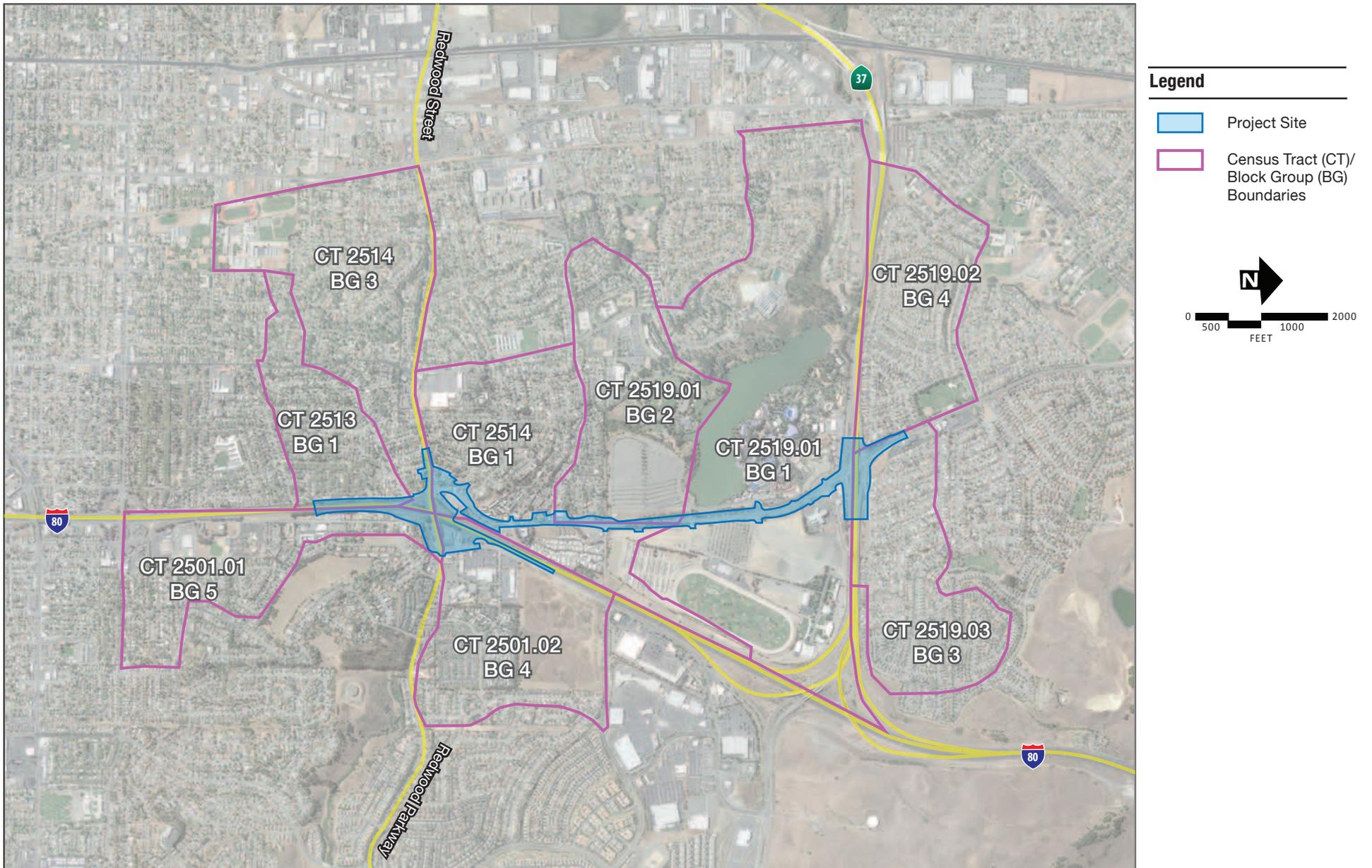
Because the Build Alternative is consistent with local planning goals and policies to improve traffic circulation and improve safety on the local roadway network and at the existing interchange, no minimization or mitigation measures are needed.

## 2.1.2 COMMUNITY IMPACTS

### Community Character and Cohesion

The following analysis is based on the Community Impact Assessment (CIA) completed in October 2011 (Department, 2012c). The study area for community impacts from the Build Alternative includes the area to the east and west of Fairgrounds Drive and I-80 and is defined as the census tract block groups that are crossed by or surround the project alignment. The entire study area for community impacts lies within the City of Vallejo.

For the purposes of this analysis, the CIA study area is defined by available statistical data describing the City of Vallejo and the nine census tract block groups that are crossed by or adjacent to the Build Alternative. **Figure 2-2** shows the boundary of each census tract and block group within the vicinity of the CIA study area.



Census Tracts and Block Groups in the Project Area

Figure

Source: U.S. Census Bureau, 2000; Circlepoint, 2011.

Table 2.1.2-1 Study Area Racial and Ethnic Composition, 2000

	CT 2501.01 BG 5	CT 2501.02 BG 4	CT 2513 BG 1	CT 2514		CT 2519.01		CT 2519.02 BG 4	CT 2519.03 BG 3	City of Vallejo
				BG 1	BG 3	BG 1	BG 2			
Total Population	1,547	1,831	1,038	2,186	1,859	2,005	1,231	2,228	2,377	116,760
White	638	336	741	964	1,173	307	578	137	177	35,533
Hispanic or Latino	231	154	100	271	215	214	150	323	270	18,591
Black/African American	332	539	64	449	218	1,073	258	664	1,255	27,201
American Indian and Alaska Native	3	5	2	9	4	5	1	3	5	547
Asian	264	666	73	327	161	351	165	954	518	27,829
Native Hawaiian and Other Pacific Islander	4	12	6	29	5	16	30	28	16	1,188
Some Other Race	2	3	0	5	6	6	4	9	4	312
Two or More Races	73	116	52	132	77	33	45	110	132	5,559
Minority Population (Percentage)	58.8%	81.6%	28.6%	55.9%	36.9%	84.7%	53%	93.9%	92.6%	69.6%

Source: U.S. Census, 2000.

Notes: CT= Census tract, BG = Block group

## Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 as amended, established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 U.S.C. 4331 (b)(2)]. The Federal Highway Administration (FHWA) in its implementation of NEPA [23 U.S.C. 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services. Under the California Environmental Quality Act (CEQA), an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

## Affected Environment

### *Demographic Profile*

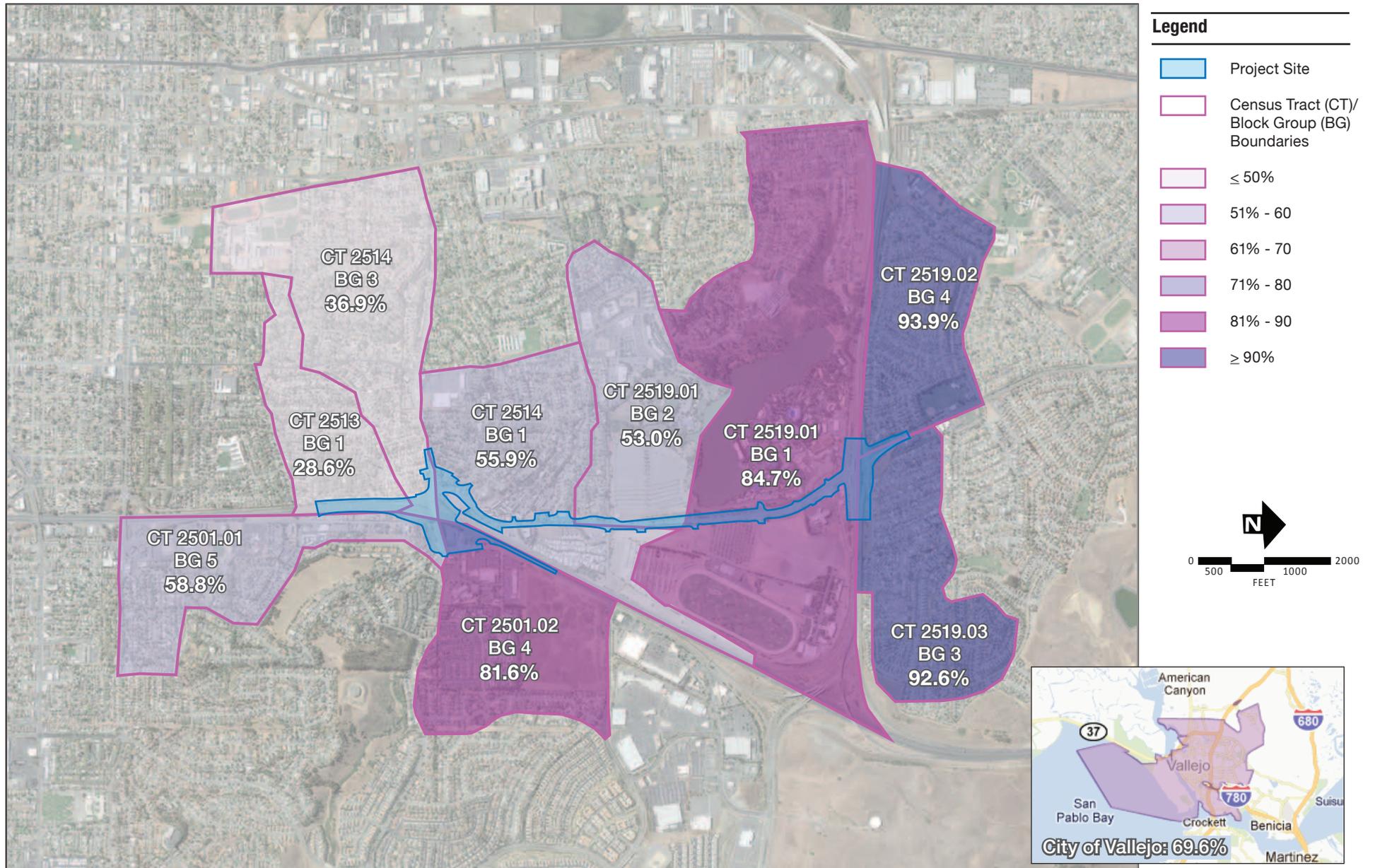
City of Vallejo has a population of 116,760 in 2000, with the CIA study area comprising approximately 14 percent of the total population.

**Table 2.1.2-1** shows the racial and ethnic composition of the City of Vallejo and the CIA study area. The racial and ethnic composition of the City is comprised of predominantly 30 percent Whites, 24 percent Asians, 23 percent Black/African American, and 16 percent Hispanic or Latino. Overall, the minority<sup>2</sup> population in the City of Vallejo is approximately 70 percent. The minority population within Build Alternative's nine census tract block groups ranges from 28.6 percent to 93.9 percent. As shown in **Figure 2-3**, census tract block groups with higher minority populations are concentrated in the eastern portion of the Build Alternative. As a whole, the CIA study area is comprised of predominantly of 31 percent Whites, 21 percent Asians, 30 percent Black/African American, and 12 percent Hispanic or Latino. The CIA study area has a similar racial and ethnic composition to the City of Vallejo, with the exception of a higher Black/African American population and a lower Asian and Hispanic or Latino population in the study area when compared to the City.

Median household incomes in the City of Vallejo (\$50,030) are well above the State average (\$47,493), but below the Solano County average (\$54,099). **Table 2.1.2-2** shows the income and poverty levels for the CIA study area in comparison to the City of Vallejo. The median household income within the CIA study area ranges from \$45,684 to \$77,245. With the exception of two census tracts, the median household incomes within the CIA study area are well above the City's average. Per capita income in the City of Vallejo (\$20,415) is below the State average (\$22,711) and Solano County average (\$21,731). In

---

<sup>2</sup> According to Executive Order 12898, the term "minority" includes any individual who is American Indian or Alaskan Native, Asian or Pacific Islander (including Native Hawaiian), Black/African American (not of Hispanic Origin), or Hispanic/Latino.



Minority Populations in Project Area

Figure

Source: U.S. Census Bureau, 2000; Circlepoint, 2011.

the CIA study area, per capita income ranges from \$18,037 to \$42,870. Approximately half of the CIA study area's census tracts are above the City's per capita income average, whereas the other half is below.

Approximately 10.1 percent of the City of Vallejo residents were below the poverty level in 1999, whereas the State average was 14.2 percent and the Solano County average was 8.3 percent. As shown in **Table 2.1.2-2**, the percentage of population in poverty within the study area ranges from 3.2 percent to 10.8 percent. With the exception of census tracts 2519.02 and 2519.03, the study area's population in poverty is well below the City's average. Census tract 2519.02 and 2519.03's population in poverty is slightly higher than the City average.

Table 2.1.2-2 Study Area Income and Poverty, 1999

	CT 2501.01	CT 2501.02	CT 2513	CT 2514	CT 2519.01	CT 2519.02	CT 2519.03	City of Vallejo
Per Capita Income	\$24,129	\$26,097	\$42,870	\$22,581	\$18,037	\$16,668	\$18,426	\$20,415
Median Household Income	\$64,375	\$77,245	\$56,382	\$50,000	\$45,684	\$58,284	\$62,606	\$50,030
Population in Poverty	486	232	210	334	525	683	606	11,588
Percentage in Poverty	6.6%	3.2%	6.9%	6.2%	9.7%	10.8%	10.3%	10.1%

Source: U.S. Census, 2000.

Notes: CT = Census tract

**Table 2.1.2-3** compares the housing characteristics of the CIA study area to the City of Vallejo. Approximately 96 percent of the housing units in the City of Vallejo are occupied. Of these occupied units in the City, approximately 63 percent of the housing units are owner-occupied and 37 percent are renter-occupied units. Within the CIA study area, 97 percent the housing units are occupied. Of the occupied units in the CIA study area, 65 percent of the housing units are owner-occupied and 35 percent are renter-occupied housing units. The study area has a slightly higher percentage of owner-occupied housing units when compared to the City.

### *Community Profile*

The CIA study area is comprised of a mixture of commercial, office, residential, and recreational facility developments. Please refer to **Subsection 2.1.1** for a discussion on the existing land use patterns in the project study area.

Commercial businesses in the CIA study area are concentrated around the Redwood Parkway intersection with Fairgrounds Drive, I-80, and Admiral Callaghan Lane; along Fairgrounds Drive; and at the intersection of Fairgrounds Drive and SR 37. Businesses in the CIA study area include gas stations, restaurants including fast-food chains, hotels/motels, and neighborhood-serving businesses such as grocery stores and markets.

A dental office, medical office building, veterinary hospital, and a private day care facility are also located within the CIA study area.

Residential neighborhoods are located in the southern and northern portions of the CIA study area. In the southern portion of the CIA study area, the Redwood Parkway/I-80 and Redwood Parkway/Fairgrounds Drive intersections are surrounded by a mixture of single-family and multi-family homes. Single family homes are located to the west of Fairgrounds Drive from Redwood Parkway to Coach Lane. In the northern portion of the CIA study area, single-family homes are clustered north of SR 37 on both sides of Fairgrounds Drive.

There are no schools or parks located immediately adjacent to the Build Alternative study area. The closest schools, Highland Elementary School and Johnston Copper Elementary School, are located 0.5 mile from the Build Alternative. Three neighborhood community parks are located within a ¼ mile from the Build Alternative.

### **Environmental Consequences**

#### *Build Alternative*

Impacts to neighborhoods arising from transportation projects are generally related to the division of existing neighborhoods. According to the Department's *Environmental Handbook Volume 4 – Community Impact Assessment*, transportation projects may divide neighborhoods when they act as physical barriers or when they are perceived as psychological barriers by neighborhood residents. In addition, transportation project perceived as physical or psychological barriers may isolate a portion of a neighborhood. This is a particularly sensitive issue within ethnic neighborhoods.

However, transportation projects may also increase cohesion within neighborhoods by diverting vehicular traffic to other roadways and increasing the desirability of pedestrian activity through a neighborhood.

The Build Alternative would involve the widening of Fairgrounds Drive, modifications to the I-80/Redwood Parkway interchange and several intersections in the CIA study area. Implementation of the Build Alternative would impact several parcels and require the displacement of several residential and commercial uses in the CIA study area, predominantly along Fairgrounds Drive between Redwood Street and Sereno Drive.

Businesses displaced along Fairgrounds Drive provide commercial services ranging from medical offices, lodging and food services, to gas and furniture sales. Displacement of these businesses is not anticipated to adversely affect the local community because there are several other businesses in the project study area that offer these same services.

Residential displacements would primarily occur near the intersection of Fairgrounds Drive and Redwood Street and near the intersection of Fairgrounds Drive and Sereno Drive. These residential uses are located at the periphery of the residential neighborhoods and comprise a relatively small proportion of these neighborhoods. The residential displacements are not expected substantially alter the physical character of the neighborhood nor divide, fragment or break up the community. Potential displacements are further discussed in **Relocation and Real Property Acquisition**, below.

Table 2.1.2-3 Study Area Housing Characteristics, 2000

	CT 2501.01	CT 2501.02	CT 2513	CT 2514		CT 2519.01		CT 2519.02	CT 2519.03	Study Area Total	City of Vallejo
	BG 5	BG 4	BG 1	BG 1	BG 3	BG 1	BG 2	BG 4	BG 3		
Average Household Size	2.7	2.6	2.5	2.5	2.4	2.8	2.2	3.9	3.5	2.78*	2.9
Total Housing Units	581	728	437	938	792	730	419	567	692	5,884	41,219
Occupied Housing Units	571	707	424	857	775	706	409	560	678	5,687	39,601
Owner Occupied Units	309	197	362	452	608	493	209	485	598	3,713	25,020
Renter Occupied Units	262	510	62	405	167	213	200	75	80	1,974	14,581
Vacant Units	10	21	13	81	17	24	10	7	14	197	1,618

Source: Notes: CT = Census tract, BG = Block group

\* This number indicates the average household size in the project area.

### *No-Build Alternative*

The No-Build Alternative would make no physical or operational improvements to Fairgrounds Drive, Redwood Parkway, or the connecting freeways within the study area, and would therefore avoid the effects to community character and cohesion associated with the Build Alternative.

### **Avoidance, Minimization, and/ or Mitigation Measures**

As the Build Alternative would not significantly affect the character and/or cohesiveness of the study area, no avoidance, minimization, and/or mitigation measures would be required.

## Relocation and Real Property Acquisition

### **Regulatory Setting**

The Department's 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 B** for a summary of relocation benefits.

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 C** for a copy of the Department's Title VI Policy Statement.

### **Affected Environment**

Most of the proposed improvements would be constructed within the existing right-of-way. However, in order to widen Fairgrounds Drive between Redwood Street and SR 37 and to relocate the existing Fairgrounds Drive/Redwood Street intersection approximately 200 feet west of its current location, the Build Alternative could require the acquisition of commercial and residential properties adjacent to these areas. These affected properties are concentrated mainly in the southern portion of the project study area.

### **Environmental Consequences**

#### *Build Alternative*

Based on preliminary design, implementation of the Build Alternative would impact private property in several areas within the study area including portions of Fairgrounds Drive, along Redwood Parkway/Redwood Street, along Moorland Street, along Sereno Drive, and along Admiral Callaghan Lane all within the City of Vallejo. **Figures 2-4 and 2-5** depict the proposed parcels that would be affected by the Build Alternative.

The Build Alternative would impact 37 parcels in total. Out of these 37 impacted parcels, 7 are vacant and do not contain structures on site. The majority of the parcels consist of existing single/multi-family residential uses and several single/multi-commercial uses.

### Residential Property Acquisition

The Build Alternative would affect 20 existing single/multi-family residential parcels along Fairgrounds Drive, Redwood Street, and Moorland Street due to the proposed widening of Fairgrounds Drive and the relocation of the Fairgrounds Drive/Redwood Street intersection. Of the 20 residential parcels, 19 of these residential parcels currently contain existing single family/multifamily homes.<sup>3</sup> The Build Alternative may result in the displacement of 14 of the 19 existing single/multi-family residences.

**Table 2.1.2-4** lists the potentially affected residential parcels based on preliminary design information. Parcels are listed in order from east to west within the project area and correspond to **Figures 2-4** and **2-5**.

According to the 2010 U.S. Census, there are 44,433 total housing units in the City of Vallejo. Of these, 3,874 housing units are vacant, representing approximately 9 percent of the total housing units in the City of Vallejo. Given the high vacancy rate of housing units within the City, there are sufficient resources for the impacted residents to relocate within the City and community, if necessary.

### Commercial Property Acquisition

The Build Alternative would affect 17 commercial parcels along Fairgrounds Drive, Admiral Callaghan Lane, and Sereno Drive due to the proposed widening of Fairgrounds Drive, the relocation of the Fairgrounds Drive/Redwood Street intersection, and the design modification of the I-80/Redwood Parkway interchange. Of the 17 commercial parcels, 11 of these commercial parcels currently contain existing structures.<sup>4</sup> Ten businesses along Fairgrounds Drive would be impacted as a result of implementing the Build Alternative. Of these ten existing businesses, the Build Alternative may result in displacement of six businesses. **Table 2.1.2-5** lists the potentially affected commercial parcels based on preliminary design information. Parcels are listed in order from east to west within the project area and correspond to **Figures 2-4** and **2-5**.

Among the businesses potentially displaced by the Build Alternative include Lee's Market and Gas, medical offices, Annie's Panda Garden Restaurant, America's Bets Inn, 76 Gas Station, and American Furniture Galleries. Five of the six businesses potentially displaced provide commercial services ranging from lodging and food services, to gas and furniture sales. The medical office building does not appear to provide emergency services. Impacts to these businesses would not adversely impact the local community because there are several other businesses in the study area that offer these same services.

---

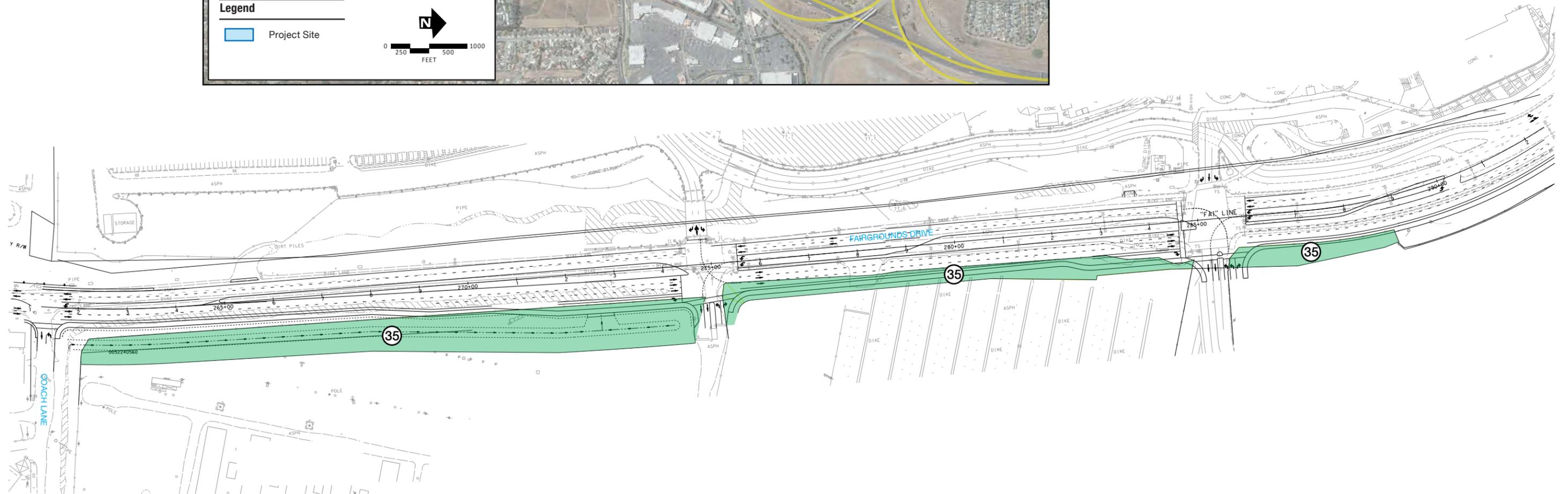
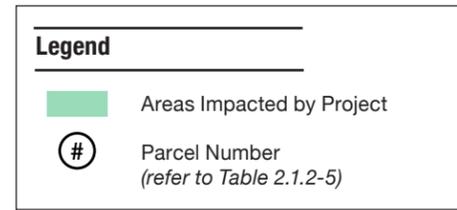
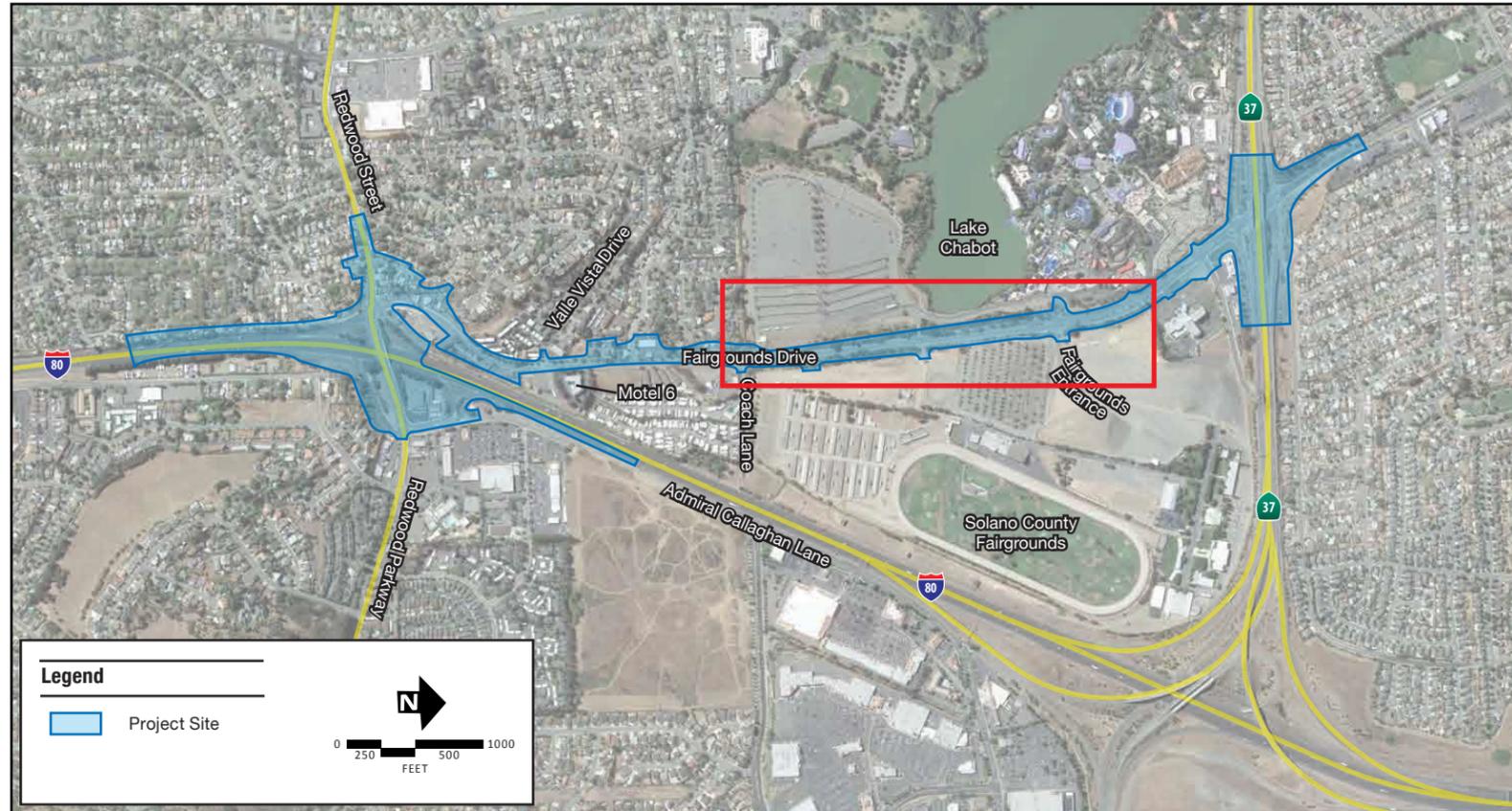
<sup>3</sup> As shown in Table 2.1.2-4, parcel 7 is vacant.

<sup>4</sup> As shown in Table 2.1.2-5, parcels 8, 9, 13, 31, and 32 are vacant. Further parcel 35, the Solano County Fairgrounds, does not have any structures on site and is considered 'vacant.'

Table 2.1.2-4 Potentially Affected Residential Parcels in the Study Area

Parcel No.	APN No.	Existing use	Size of Parcel	Acres Needed for Build Alternative	Physical Address	Reason for Displacement
1	0052-311-170	Single family	0.29 acre	0.07 acre	67 Emerald Circle	--
5	0052-303-210	Single family	0.33 acre	0.09 acre	437 Fairgrounds Drive	Fairgrounds Drive widening
6	0052-303-220	Single family	0.25 acre	0.10 acre	No address on record	Fairgrounds Drive widening
7	0052-303-230	Vacant residential	0.57 acre	0.13 acres	No address on record	Fairgrounds Drive widening
15	0052-270-090	Single family	0.37 acre	0.03 acres	1345 Del Mar Avenue	--
16	0053-232-350	Multi-family	0.32 acre	0.32 acre	251 Fairgrounds Drive	Relocation of Fairgrounds Drive/ Redwood Street intersection
18	0053-232-320	Single family	0.17 acre	0.01 acre	444 Moorland Street	--
19	0053-232-340	Single family	0.15 acre	0.15 acre	436 Moorland Street	Relocation of Fairgrounds Drive/ Redwood Street intersection
20	0053-232-110	Single family	0.14 acre	0.14 acre	432 Moorland Street	Relocation of Fairgrounds Drive/ Redwood Street intersection
21	0053-232-100	Single family	0.18 acre	0.18 acre	424 Moorland Street	Relocation of Fairgrounds Drive/ Redwood Street intersection
22	0053-232-090	Single family	0.17 acre	0.17 acre	416 Moorland Street	Relocation of Fairgrounds Drive/ Redwood Street intersection
23	0053-232-040	Single family	0.12 acre	0.12 acre	2624 Redwood Street	Relocation of Fairgrounds Drive/ Redwood Street intersection
24	0053-232-050	Single family	0.13 acre	0.13 acre	2618 Redwood Street	Relocation of Fairgrounds Drive/ Redwood Street intersection
25	0053-232-060	Single family	0.13 acre	0.13 acre	2612 Redwood Street	Relocation of Fairgrounds Drive /Redwood Street intersection
26	0053-232-070	Single family	0.13 acre	0.13 acre	2606 Redwood Street	Relocation of Fairgrounds Drive/ Redwood Street intersection
27	0053-232-080	Single family	0.13 acre	0.13 acre	400 Moorland Street	Relocation of Fairgrounds Drive /Redwood Street intersection
28	0054-082-180	Single family	0.15 acre	0.15 acre	20 Howard Avenue	Relocation of Fairgrounds Drive/ Redwood Street intersection
29	0054-082-190	Single family	0.19 acre	0.19 acre	2519 Redwood Street	Relocation of Fairgrounds Drive/ Redwood Street intersection
30	0054-083-180	Single family	0.26 acre	0.06 acre	330 Moorland Street	--
36	0054-083-100	Single family	0.67 acres	0.01 acre	328 Moorland Street	--

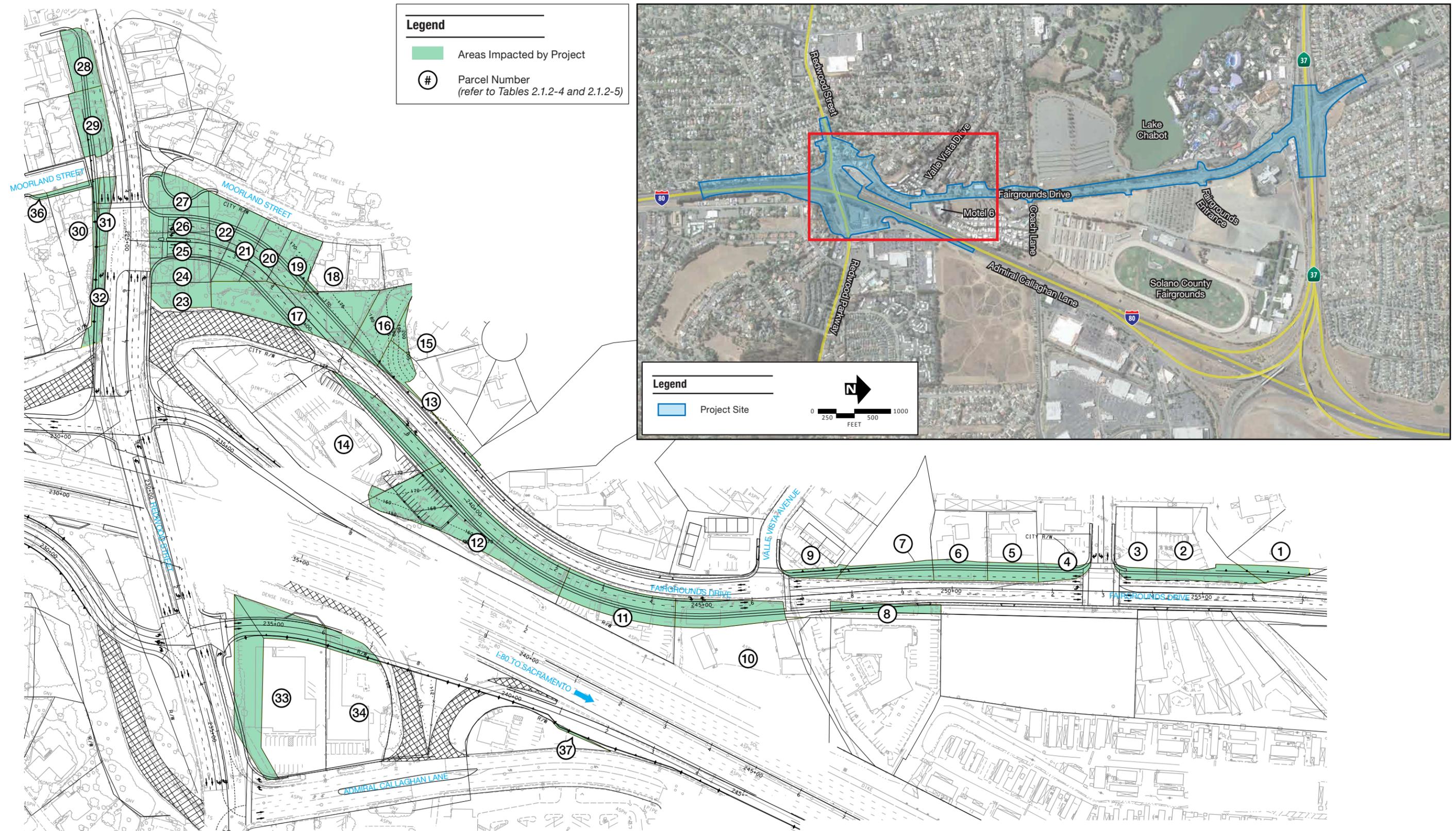
Parcel No. corresponds to Figures 2-4 and 2-5 Source: Department, 2012c.



Proposed Right-of-Way Acquisitions Figure 2-4

Source: Department, 2012c.

*Figure 2-4 Property Right-of-Way Acquisitions (back)*



Proposed Right-of-Way Acquisitions **Figure**

Figure 2-5 Property Right-of-Way Acquisitions (back)

Table 2.1.2-5 Potentially Affected Commercial Parcels in the Study Area

Parcel No.	APN No.	Business Name	Size of Parcel	Amount to be Acquired	Physical Address	Reason for Displacement
2	0052-302-080	Lee's Market & Gas (Multi-business)	0.52 acre	0.12 acre	511 Fairgrounds Drive	Fairgrounds Drive widening
3	0052-302-090	Lee's Market & Gas (Multi-business)	0.29 acre	0.04 acre	501 Fairgrounds Drive	Fairgrounds Drive widening
4	0052-303-010	Medical Offices (Single business)	0.18 acre	0.07 acre	1999 Sereno Drive	Fairgrounds Drive widening
8	0052-320-100	Vacant (N/A)	0.04 acres	0.04 acre	No address on record	Fairgrounds Drive widening
9	0052-471-010	Vacant (N/A)	0.32 acres	0.05 acre	No Address on record	Fairgrounds Drive widening
10	0052-320-280	Legacy Homes Sales (Single business)	1.38 acres	0.25 acre	384 Fairgrounds Drive	--
11	0052-320-380	Annie's Panda Garden Restaurant (Single business)	0.49 acre	0.30 acre	320 Fairgrounds Drive	Fairgrounds Drive widening
12	0053-233-070	America's Best Inn (Single business)	0.95 acre	0.73 acre	300 Fairgrounds Drive	Fairgrounds Drive widening
13	0053-232-360	Vacant (N/A)	0.17 acre	0.10 acre	No address on record	Fairgrounds Drive widening
14	0053-233-020	Denny's Restaurant (Single business)	1.11 acres	0.20 acre	250 Fairgrounds Drive	--
17	0053-232-180	76 Gas Station (Single Business)	0.63 acre	0.63 acre	223 & 225 Fairgrounds Drive	Relocation of Fairgrounds Drive/ Redwood Street intersection
31	0054-083-140	Vacant (Government & Misc.)	0.15 acre	0.15 acre	No address on record	Relocation of Fairgrounds Drive/ Redwood Street intersection
32	0054-083-160	Vacant (Government & Misc.)	0.29 acre	0.29 acre	No address on record	Relocation of Fairgrounds Drive/ Redwood Street intersection
33	0069-340-130	American Furniture Galleries (Single business)	1.08 acres	0.57 acre	709 Admiral Callaghan Lane	Modification of the I-80/Redwood Parkway interchange to a tight diamond configuration
34	0069-340-150	Tell Rental (Single business)	0.69 acre	0.08 acre	711 Admiral Callaghan Lane	--
35	0052-240-560	Solano County Fairgrounds (Government & Misc.)	148.62 acres	3.18 acres	No address on record	Fairgrounds Drive widening
37	0069-340-060	Redwood Veterinary Hospital (Single business)	0.21 acres	0.01 acre	731 Admiral Callaghan Lane	--

Parcel No, correspond to Figures 2-4 and 2-5

Source: Department, 2012c.

Relocation of a business can result in unemployment and associated financial impacts. If the company can relocate within the same area and remain viable, the effects of unemployment would be temporary. The loss of a small business, however, is likely to have a lesser effect on employment in the community because of the fewer number of households affected. Businesses impacted by the Build Alternative would be considered small businesses.

The City of Vallejo's Economic Development Information System indicated that there are approximately 67 office building properties, 30 industrial buildings, 79 retail buildings, and 14 warehouse building vacant in the City of Vallejo. Given the number of vacant commercial properties in the City, there are sufficient existing resources for the impacted commercial businesses to relocate within the community and City, if necessary.

#### *No-Build Alternative*

The No-Build Alternative would make no physical or operational improvements to Fairgrounds Drive, Redwood Parkway, or the connecting freeways within the study area, and would therefore avoid relocations or acquisitions associated with the Build Alternative.

#### **Avoidance, Minimization, and/ or Mitigation Measures**

The Department's Relocation Assistance Program would help eligible displaced individuals or businesses move with as little inconvenience as possible. All rights and services provided under Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, would be strictly adhered to. The rights of non-tenured occupants of displaced properties would be preserved.

It is Department policy that persons displaced as a result of Department-sponsored transportation programs shall receive fair and humane treatment and shall not suffer unnecessarily as a result of projects designed for the benefit of the public. No occupants would be required to relocate until comparable replacement housing has been made available to them.

It is possible that some homeowners of the affected properties would have negative equity<sup>5</sup> on their mortgages. In recognition of this issue, the project sponsor will work closely with homeowners and the banks during the property acquisition phase of the project.

As the Build Alternative would provide for the equitable relocation of occupants and businesses, and there are sufficient residential and commercial vacancies available in the area for relocation, no avoidance, minimization, and/or mitigation measures would be required.

---

<sup>5</sup> Negative equity occurs when the value of an asset used to secure a loan is less than the outstanding balance on the loan. In terms of mortgages, this is also referred to as being "underwater" or "upside down."

## Environmental Justice

### Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2011, this was \$22,350 for a family of four.<sup>6</sup>

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. The Department's commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in **Appendix C** of this document.

### Affected Environment

Per EO 12898, a population, as evaluated by U.S. census block groups, is subject to environmental justice analysis if it meets at least one of the following criteria:

- A low-income population that is greater than 25 percent of the total population of the community, or a minority population that is greater than 50 percent of the total population of the community; or
- A low-income and/or minority population that is more than 10 percentage points higher than the City or County average.

**Tables 2.1.2-1** and **2.1.2-2**, above include pertinent demographic and socioeconomic data for the census tracts and block groups in the study area for use in determining the whether the community qualifies as an environmental justice community.

#### *Demographic Data: Minority Populations*

**Table 2.1.2-1** summarizes the racial and ethnic composition of the City of Vallejo and block groups located within the study area. Based on the 2000 U.S. Census data, the City of Vallejo has a 69.6 percent minority population. This data indicates that there is a high minority population in the City of Vallejo as a whole. Given that the minority population in the City as a whole is well over 50 percent, the entire City of Vallejo would meet the criteria of an environmental justice community. The minority population within the project area range from 28.6 percent to 93.9 percent. **Figure 2-3** shows the minority population percentages for each block group in the project area.

As previously discussed, an environmental justice community under the minority population threshold would either:

---

<sup>6</sup> U.S. Department of Health & Human Services. 2011 HHS Poverty Guidelines. <<http://aspe.hhs.gov/poverty/11poverty.shtml>>. Accessed November 21, 2011.

- be greater than 50 percent of the community population, or
- be more than 10 percentage points higher than the City average.

Seven out of the nine block groups studied have minority populations greater than 50 percent. Out of those six block groups, four block groups in the study area (census tract 2501.01, block group 4; census tract 2519.01, block group 1; census tract 2501.02, block group 4; and census tract 2501.03, block group 3) are comprised of minority populations that are also 10 percent or more above the City's average of 69.6 percent. Two block groups with the study area (census tract 2513, block group 1 and census tract 2514, block group 3), with minority populations of 28.6 percent and 36.9 percent, respectively, are substantially less ethnically diverse compared to the City and surrounding block groups.

However, as a whole, the project area would meet the criteria as an environmental justice community given the minority population is greater than 50 percent.

#### *Socioeconomic Data: Low-Income Populations*

**Table 2.1.2-2** presents percentage of the population at or below the poverty level in 1999 for the City of Vallejo and the census tracts in the project area.<sup>7</sup> As shown, 10.1 percent of the population within the City of Vallejo is at or below the poverty level. The population in poverty within the project area varies from 3.2 percent to 10.8 percent.

As previously discussed, an environmental justice community under the low-income population threshold would either:

- be greater than 25 percent of the total population of the community, or
- be more than 10 percentage points higher than the City average.

None of the census tracts in the study area have populations in poverty that are greater than 25 percent. With the exception of two census tracts (census tract 2519.02 and census tract 2519.03), the remaining five census tracts in the project area are also below the City's poverty average. The percentage of the population in poverty in census tract 2519.02 and census tract 2519.03 are 10.8 percent and 10.3, respectively. Although these percentages are slightly higher than the City's average of 10.1 percent, they would not qualify as an environmental justice community under the low-income threshold as they are not more than 10 percentage points above the City average.

There are no census tracts within the project area that would meet the criteria as an environmental justice community under the low-income thresholds.

### **Environmental Consequences**

#### *Build Alternative*

Although none of the census tracts/block groups in the study area were considered to be low-income environmental justice communities, seven out of nine block groups in the study area qualify as environmental justice minority populations as the minority population in these areas are well above 50 percent.

---

<sup>7</sup> Income and poverty level data is not available at the block group level.

As shown in **Figure 2-6**, displacements associated with the Build Alternative would occur in census tract 2501.02, block group 4; census tract 2519.01, block group 2; census tract 2514, block group 1; and census tract 2514, block group 3. **Table 2.1.2-6** below shows the number of potential displacements (residential and business) associated with each of these four census tracts/block groups.

Table 2.1.2-6 Displacements in Study Area Census Tracts/Block Groups

CT/BG	Minority Population in CT/BG	Number of Potential Residential Displacements	Number of Potential Business Displacements
CT 2501.02, BG 4	81.6%	0	1
CT 2519.01, BG 2	53.0%	0	1 (on two parcels)
CT 2514, BG 1	55.9%	12	4
CT 2514, BG 3	36.9%	2	0

Source: American Community Survey, U.S. Census Bureau, 2009.

A displacement would occur in census tract 2501.02, block group 4 (minority population of 81.6 percent), however, this is a commercial displacement, and not a residential displacement. Similarly, two commercial displacements would occur in census tract 2519.01, block group 2 (minority population of 53.0 percent). Two residential displacements would occur in census tract 2514, block group 3 (minority population 36.9 percent). In census tract 2514, block group 1, with a minority population of 55.9 percent, 12 residential and 6 business displacements are expected to occur.

Although the Build Alternative would result in the displacement of several homes and businesses within the study area, these displacements would actually occur in the block groups that have a substantially lower minority population than other surrounding block groups and the City of Vallejo as a whole. Given that the City's minority population is 69.6 percent, census tract 2514, block group 1 and 2, and census tract 2519.01, block group 2 are below the City's average. While census tract 2501.01, block group 4 does consist of a minority population above the City's average, the displacement in the community would be limited to one business.

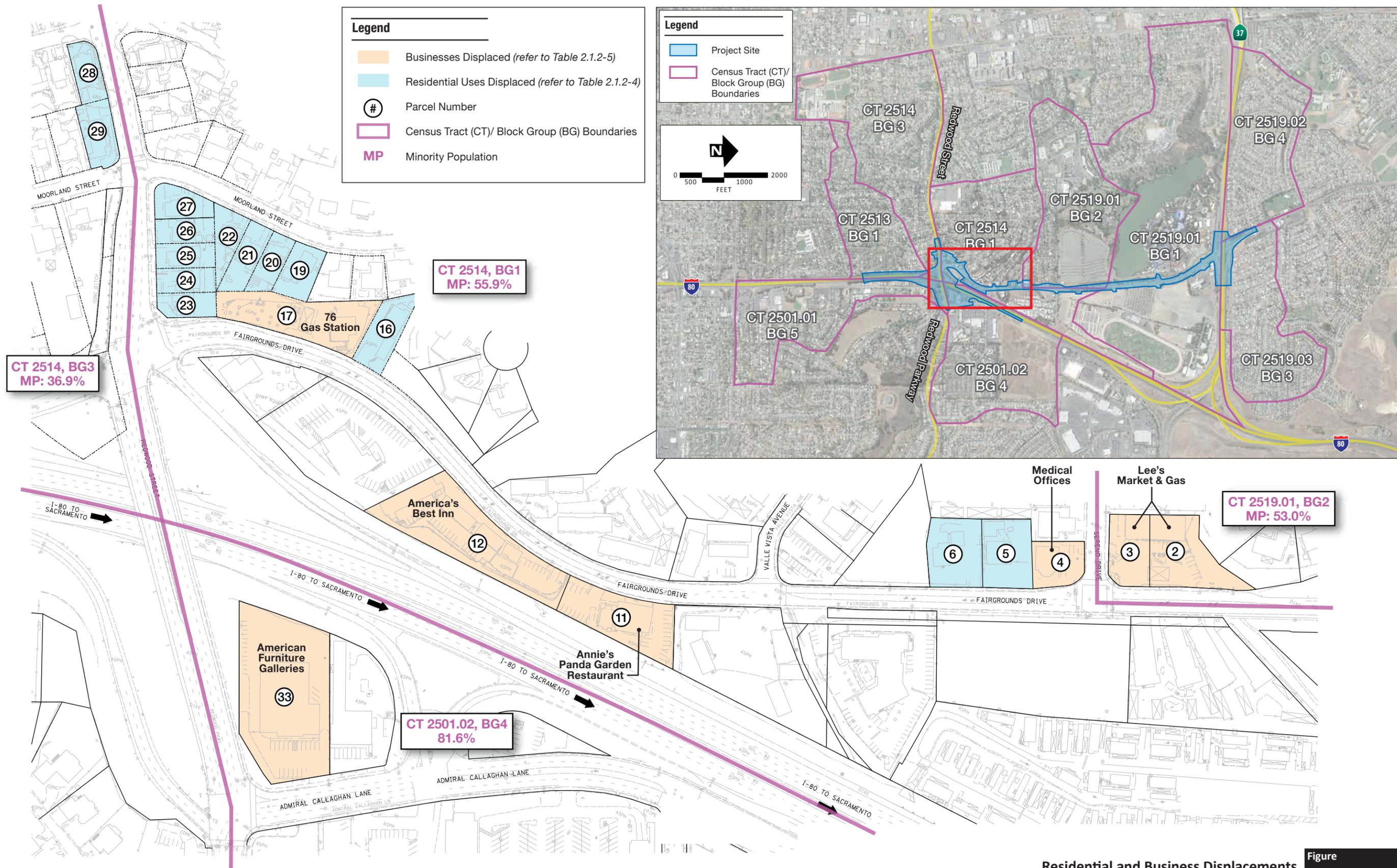
The Build Alternative would occur wholly within an area and community with a high minority population that qualifies as an environmental justice community. As such, the Build Alternative's impacts, including residential/business displacements, increase noise levels and temporary construction-period impacts (e.g. dust and noise impacts) would be borne by this same community. However, as the Build Alternative's purpose is to relieve congestion and improve traffic flow on the local roadway network along Fairgrounds Drive and Redwood Parkway/Redwood Street, the Build Alternative would directly benefit this same community. Given this situation, the environmental effects of the Build Alternative that would be borne by the minority population within the study area would not be more severe or greater in magnitude than the adverse effects that would be suffered by non-minority populations.

*No-Build Alternative*

The No-Build Alternative would make no physical or operational improvements to Fairgrounds Drive, Redwood Parkway or the connecting freeways within the study area. Implementation of the currently planned and funded transportation projects outside the study area but within the project region would be subject to the same potential environmental justice communities as the Build Alternative, since they would occur in the same general region. These projects would be required to comply with E.O. 12898 regarding potentially disproportionate impacts to environmental justice communities. The potentially disproportionate impacts to environmental justice communities would be determined under separate environmental review.

**Avoidance, Minimization, and/ or Mitigation Measures**

Based on the above discussion and analysis, the Build Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations as per E.O. 12898 regarding environmental justice. No avoidance, minimization, and/or mitigation measures would be required.



Residential and Business Displacements

Figure

*Figure 2-6 Residential and Business Displacements (back)*

### 2.1.3 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

#### Regulatory Setting

The Department, as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

The Department is 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.

#### Affected Environment

This section discusses the Build Alternative's effects on motor vehicle traffic and circulation. Information in this section is based on the *Redwood Parkway-Fairgrounds Drive Improvements Traffic Operations Analysis Report* prepared in September 2011 (Department, 2012j).

The study area was developed in consultation with the Solano Transportation Authority (STA), City of Vallejo, Solano County, and the Department, and is intended to capture the potential local and regional traffic effects of the Build Alternative. The study area encompasses an approximately 4.6 mile segment of the I-80 freeway corridor; an approximately 1.7 mile segment of the SR 37 corridor; and 20 local intersections along Fairgrounds Drive and connecting roadways (see **Figure 2-7**).

#### Analysis Approach

The traffic operations analysis evaluates three distinct traffic conditions:

- existing (2010);
- projected opening day of the improvements (2015); and
- 20 years after the opening day(2035).

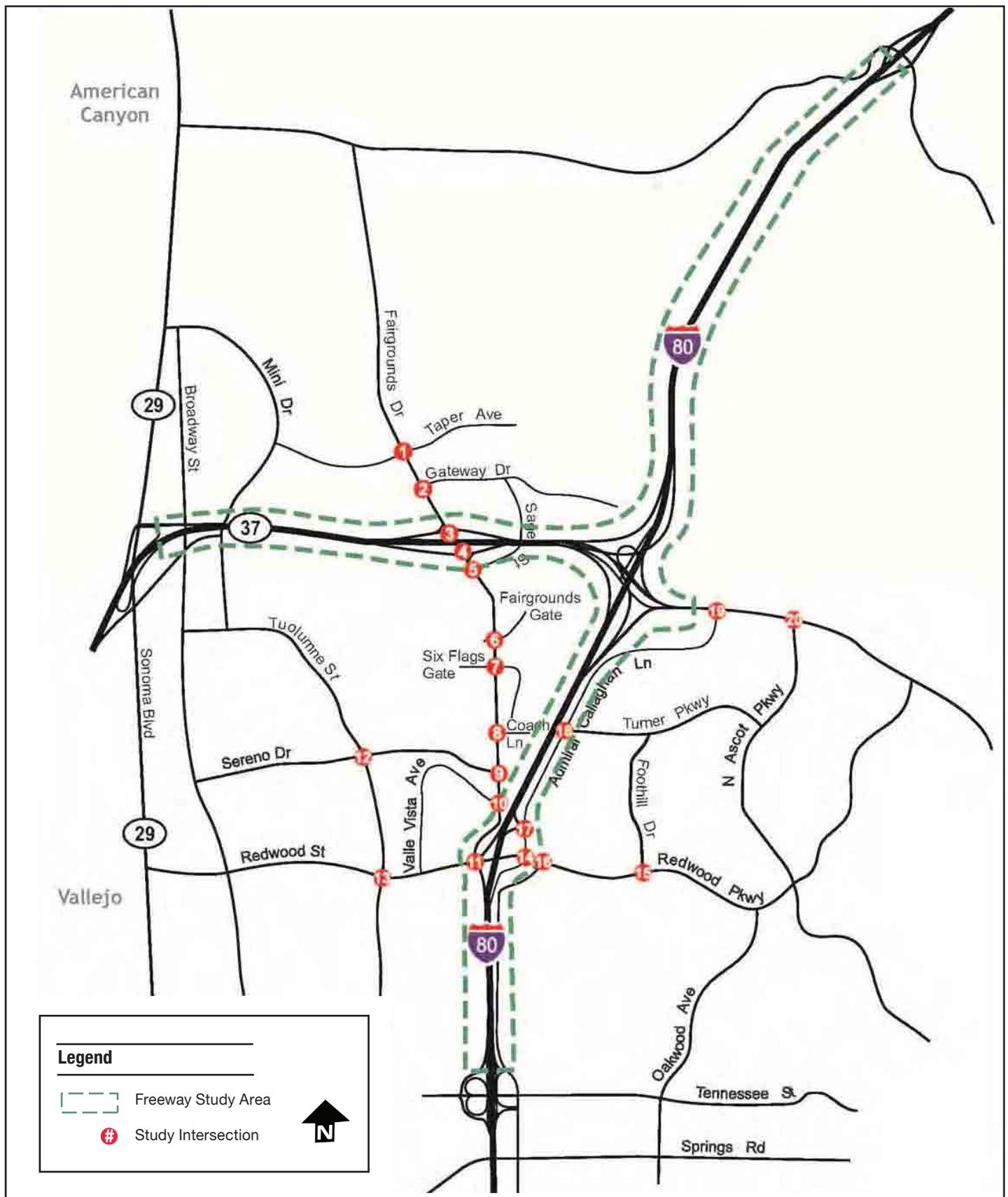
The design and construction phases of the project will be staged to coordinate with a future High Occupancy Vehicle (HOV)/ Toll lanes (express lanes) project along I-80. The portion of the I-80 corridor through Solano County has been identified by the Metropolitan Transportation Commission (MTC) as part of a feasible express lane network throughout the San Francisco Bay Area. STA has completed a study to prioritize implementation of the HOV/express lanes along the I-80 corridor. In order to construct the HOV/express lanes, additional work along the I-80 mainline would be necessary. In order to maximize efficiencies and reduce costs it has been determined that the design and

construction of eastbound improvements on I-80 as part of the Build Alternative should be done concurrently with the future I-80 HOV/express lanes project.

The projected opening day for the Build Alternative improvements located on the west side of I-80 would occur by the year 2015 through multiple construction packages. This includes the modification of the Redwood Parkway/I-80 westbound ramps, the relocation of the Fairgrounds Drive/Redwood Street Intersection, the completion of the Moorland Street cul-de-sacs, the widening of Fairgrounds Drive, the relocation of Rindler Creek, and the modification of the Fairgrounds Drive/SR 37 interchange. All improvements associated with the modification of the Redwood Parkway/I-80 eastbound ramps (east of I-80), including the replacement of the existing Admiral Callaghan hook ramps would be constructed by the year 2035, concurrently with the construction of the I-80 HOV /express lanes Project. This would ensure that the proposed Build Alternative improvements could accommodate any changes in the I-80 eastbound lane widths, or related lane alignment shifts, caused by the future construction of an HOV lane in this area. **Figures 1-2 a - c** identify which Build Alternative improvements would occur in 2035.

The construction of the I-80 HOV /express lanes project is not part of the Build Alternative, and is evaluated under separate environmental review. This environmental document only evaluates the environmental effects associated with the Build Alternative, including those improvements that would occur in 2015 and 2035.

Future traffic conditions were prepared, based on the latest version of the Solano-Napa Phase II countywide transportation model. Modifications to the model were made to improve the representation of the roadway network within the study area, and to ensure that the model accurately reflected planned and funded development and transportation projects expected to be in place by 2015 and 2035. The land use assumptions in the 2010 travel demand model have been used for 2010 land use assumptions; however, the land use assumptions in the model for 2030 did not reflect current expectations about development within the study area. The Solano County Fairgrounds are now expected to be redeveloped with a mixture of hotel, retail, and entertainment uses. This redevelopment is expected to be in place by 2030. Additionally, the existing Elks Club located at 2850 Redwood Parkway, is expected to be replaced in the near future by a small retail development, known as the Winco project. The 2030 land use assumptions in the transportation model were updated to reflect these reasonably foreseeable development projects.



Traffic Study Freeway Limits and Study Intersections

Figure

The current *Transportation Plan for the San Francisco Bay Area*, approved by the MTC in 2009, lists high-occupancy vehicle (HOV)/express lanes to be installed along I-80 from Carquinez straight to Fairfield and beyond. The traffic analysis assumes that HOV/express lanes would be in place by the year 2035 and operational along the segment of I-80 that runs within the study area.

The following measures of effectiveness are used to evaluate traffic conditions within the study area:

- *Number of Vehicles and Persons Served* is a measure of the total throughput of the corridor. This measure takes into consideration the actual volume served versus the demand
- *Average Speed* is a measure of the average speeds on all roadways throughout the study area
- *Total Delay* is the amount of vehicle delay incurred during the peak period as a result of the congestion and demand exceeding the capacity of the highway and/or local roadways
- *Average Delay per Vehicle* is the amount of vehicle delay incurred per vehicle
- *Average Travel Time* is a measure of the time it takes (on average) to travel from one point to another during peak commute hours. The travel time calculation considers the average delay throughout the study area, vehicle queues, and delay caused by merging vehicles.

### **Level of Service**

Level of Service (LOS) is a measure of actual traffic conditions and the perception of such conditions by motorists. There are six LOS ratings, ranging from LOS A (free traffic flow with low volumes and high speeds, resulting in low vehicle densities) to LOS F (traffic volumes exceeding the capacity of the infrastructure, resulting in forced flow operations, slow speeds, and high vehicle densities). This traffic analysis evaluates traffic operations based on the LOS criteria for highway mainline and weaving segments, local intersections, and peak commute hour vehicle speeds and average travel times. The criteria used in this traffic analysis are consistent with the procedures contained in the Highway Capacity Manual.<sup>8</sup>

### **Analysis of Weaving, Merge, and Diverge Areas**

The LOS criteria for weaving segments (i.e., ramp junctions); and merge and diverge areas is based on vehicle density (vehicles per travel lane per mile) using the relationships presented in **Tables 2.1.3-1** and **2.1.3-2**. The Department's policy is to maintain highway operations at the LOS D threshold.

---

<sup>8</sup> The Highway Capacity Manual (2000) is a publication of the United States Transportation Research Board. It contains concepts, guidelines, and procedures for computing the capacity and quality of service of various transportation facilities, including highways, arterial roads, and intersections.

Table 2.1.3-1 LOS Criteria

LOS	Description	Basic Freeway Sections
		Maximum Density (Passenger Car/Lane/Mile)
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream	<11
B	Free-flow speeds are maintained. The ability to maneuver within the traffic stream is only slightly restricted	>11 to 18
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	>18 to 26
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	>26 to 35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing. <sup>1</sup>	>35 to 45
F	Represents a breakdown in flow	>45

Source: Department, 2012j.

Table 2.1.3-2 Freeway Weaving Segments Level of Service Criteria

LOS	Merge and Diverge Areas	Weaving Segments	
		Freeway Weaving Segment	Multilane and Collector-Distributor Weaving Segments
A	≤10	≤10	≤12
B	>10 and ≤20	>10 and ≤20	>12 and ≤24
C	>20 and ≤28	>20 and ≤28	>24 and ≤32
D	>28 and ≤35	>28 and ≤35	>32 and ≤36
E	>35	>43	>36 and ≤40
F	Demand Exceeds Capacity	>43	>40

Source: Department, 2012j.

---

## Intersection Analysis

### *LOS Criteria*

At signalized intersections, the LOS rating is based on the average delay of all vehicle movements measured in seconds per vehicle. Peak commute hour traffic volumes, lane configurations, and signal timing plans are used as inputs in the LOS calculations. For all-way stop-controlled (i.e., unsignalized) intersections, the LOS is also based on the average delay of all vehicle movements. At side-street stop-controlled intersections, the LOS rating is based on the level of delay at the worst case vehicle movement. **Table 2.1.3-3** summarizes the relationship between the level of delay per vehicle and LOS for signalized and unsignalized intersections. Each study intersection was analyzed using existing lane configurations and traffic signal timing data provided by the City of Vallejo and the Department. Existing intersection peak hour turning movement volumes are based on numerous counts at intersections and ramps, most of which were conducted during the period 2008 to 2010.

The Department's policy is to maintain intersection operations at the LOS D threshold; however, in existing urban areas, an LOS E is acceptable if there is no practical alternative to the intersection alignment. For the purposes of this analysis, the Department has accepted LOS E as being reasonable for locations at which the No-Build Alternative would have a worse LOS than when compared to the Build Alternative.

The City of Vallejo's *Traffic Impact Analysis/Study Guidelines* considers traffic impacts as "significant" when the traffic volume to roadway capacity (V/C) ratio increases between the No-Build and Build Alternative more than the threshold identified in **Table 2.1.3-4**. For example, an intersection operating as LOS C under both the No-Build conditions and Build Alternative conditions, must have an increased V/C ratio of more than 0.04 for the deterioration of the intersection performance to be considered significant.

### *Using LOS to Define the Build Alternative*

The intersection analysis was first conducted under year 2035 conditions for the study intersections that fall within the Build Alternative's limits. Various modifications to the signal phasing, signal timing, and intersection geometry were analyzed to determine the minimum improvements that would be needed to provide an acceptable LOS under the 2035 conditions. For the proposed new and reconfigured intersections at the Redwood Parkway interchange, various alternative configurations were investigated in order to ascertain whether it would be possible to reduce the number of proposed lanes, which in turn would reduce the right-of-way required to provide the proposed improvements. Several different arrangements of the reconfigured eastbound I-80 off-ramp were also analyzed to attempt to minimize the potential for traffic queues overflowing in the short-left turn lanes on Redwood Parkway.

In several cases, there was more than one acceptable design for each intersection. The final design of these intersections was selected in consultation with traffic engineers so that the improvements could accommodate other requirements, such as sight distance, deceleration requirements, and right-of-way availability. The proposed Build Alternative encompasses the best possible intersection designs, based on the predicted 2035 traffic conditions.

Study intersections outside the Build Alternative limits were also studied to verify that no impacts on those intersections would occur as a consequence of the Build Alternative. Signal timing was optimized for the future traffic demand in order to calculate the expected LOS. No geometric improvements are proposed for those intersections.

Table 2.1.3-3 Intersection Level of Service Criteria

LOS	Description of Traffic Conditions	Average Control Delay Per Vehicle
<b>Signalized Intersections</b>		
A	Insignificant Delays: No approach phase is fully utilized and no vehicle waits longer than on red indication.	≤10
B	Minimal Delays: An occasional approach to phase is fully utilized. Drivers begin to feel restricted.	>10-20
C	Acceptable Delays: Major approach phase may become fully utilized. Most drivers feel somewhat restricted.	>20-35
D	Tolerable Delays: Drivers may wait through more than one red indication. Queues may develop but dissipate rapidly, without excessive delays	>35-55
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues from upstream.	>55-80
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	>80
<b>Unsignalized Intersections</b>		
A	No delay for stop-controlled approaches.	≤10
B	Operations with minor delay.	>10-15
C	Operations with moderate delays.	>15-25
D	Operations with some delays.	>25-35
E	Operations with high delays, and long queues.	>35-50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	>50

Source: Department, 2012j.

Table 2.1.3-4 City of Vallejo Traffic Impact Guidelines

LOS	Threshold V/C increase
A, B	N/A
C	>0.04
D	>0.02
E,F	>0.01

Source: 2012j.

### Existing Transportation Facilities

*I-80:* In general, I-80 is a six-lane freeway with three mixed-flow lanes in each direction. The I-80/Redwood Parkway interchange has a mixture of ramp types, as described below. **Figure 2-8a** illustrates the I-80 lane configuration within the project study area.

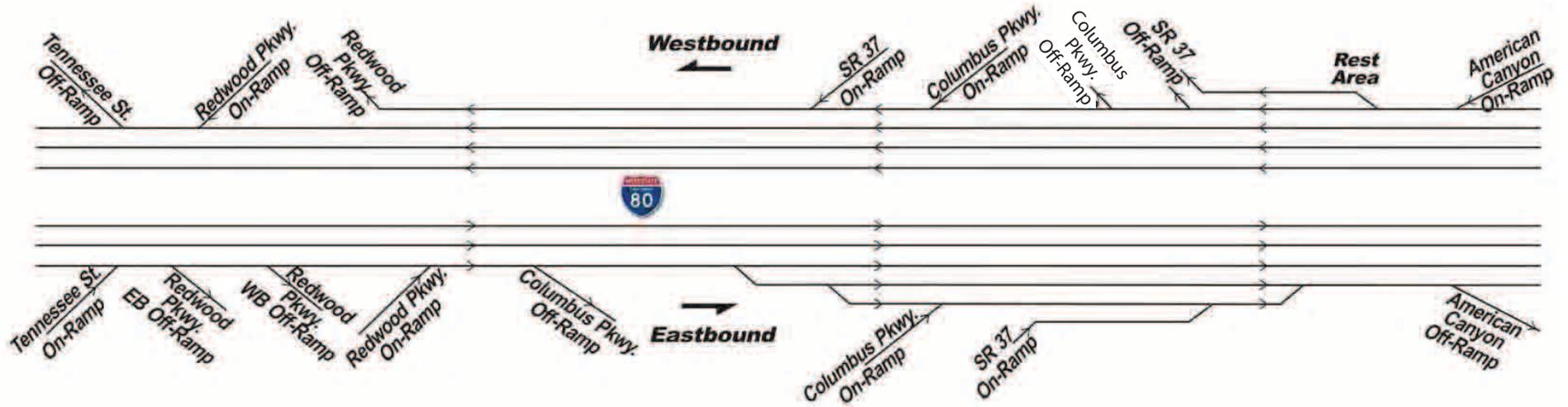
*SR 37:* Within the project study area, SR 37 is a four-lane, east-west freeway connecting SR 29 and I-80 within the City of Vallejo. The majority of this segment was constructed in the mid- to late 1970s while the Fairgrounds Drive/SR 37 interchange was built in the early 1990's. This segment of SR 37 consists of 12-foot lanes, 5-foot left shoulders, and 10-foot right shoulders. The SR 37/Fairgrounds Drive interchange is a tight diamond-shaped interchange. **Figure 2-8b** illustrates the SR 37 lane configuration within the project study area.

*Local Roadways:* Within the traffic study area, Fairgrounds Drive is a conventional two-lane, undivided local arterial with two 12-foot lanes and a continuous two-way left turn lane, flanked by 2 to 4 foot non-standard shoulders. Moorland Street is a two-lane residential roadway that runs parallel to the west of Fairgrounds Drive. The roadway continues south, between Redwood Street and Greenfield Avenue; however, only the northern portion of Moorland Street connects directly to Redwood Street.

#### *Non-Standard Features*

The following non-standard features are present within the traffic study area:

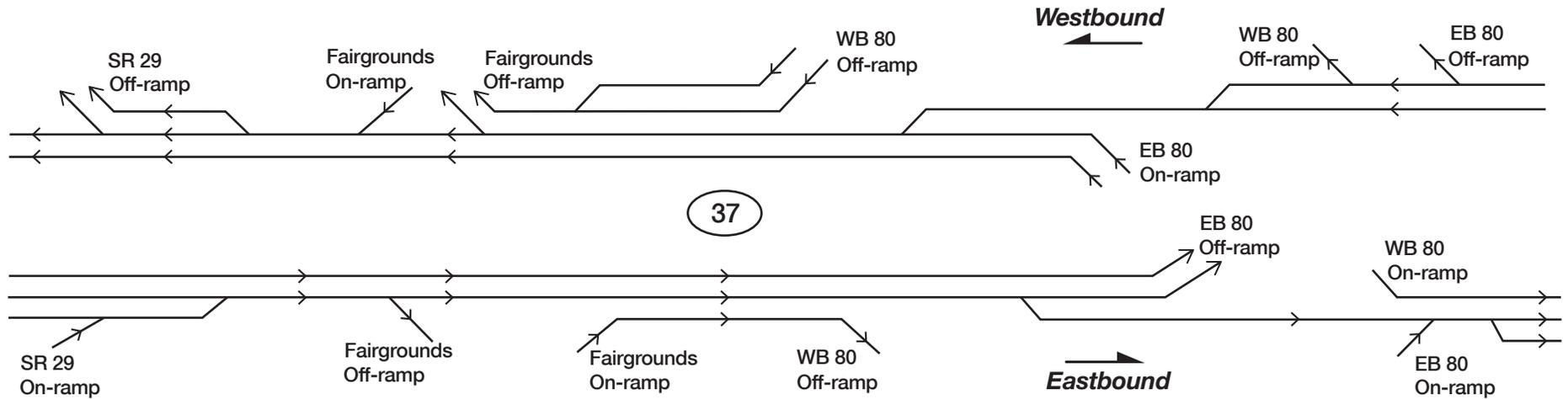
- The existing I-80/Redwood Parkway interchange facility is over 50 years old. Westbound ramps to and from I-80 form a non-standard five-way intersection with Redwood Street and Fairgrounds Drive (see **Figure 2-9**).
- On the east side of the freeway, one eastbound I-80 off-ramp forms a non-standard four-way intersection with Redwood Parkway and Admiral Callaghan Lane (see **Figure 2-10**). Approximately 200 feet north of the four-way intersection, another pair of eastbound I-80 hook ramps connect to Admiral Callaghan Lane, as shown in **Figure 2-11**. The interchange configurations consists of short, tight radius hook ramps connecting to parallel arterial roadways rather than the cross road that they serve.
- The portion of Moorland Street south of Redwood Street is currently a non-standard dead-end that does not provide an adequate turning radius for emergency fire response vehicles.



Existing I-80 Freeway Lanes

Figure

2-8a



Existing SR 37 Freeway Lanes

Figure

2-8b



Existing Fairgrounds Drive, I-80 WB Ramps, Redwood Street Intersection

Figure

2-9

Source: Department, 2012k; Google Earth, 2011.



Existing Redwood Parkway, Admiral Callaghan Lane, I-80 EB Off-Ramp Intersection

Figure

2-10

Source: Department, 2012k; Google Earth, 2011.



Existing Admiral Callaghan Lane, I-80 EB Ramps Intersection

Figure 2-11

Source: Department, 2012k; Google Earth, 2011.

## Existing and No-Build Traffic Conditions

### *Merge, Diverge, and Weaving Analysis*

At each location at which there is merge, diverge, or weaving activity, the LOS rating was calculated for the peak commute hours. The results are illustrated in **Table 2.1.3-5** through **Table 2.1.3-8** for both existing and future Build and No-Build conditions. Field observations confirmed that localized traffic congestion does occur in the freeway lanes adjacent to on- and off-ramps. The areas with the worst congestion include the eastbound I-80/SR 37/Columbus off-ramp diverge, the westbound I-80/SR 37 on-ramp merge, and the weaving segment from the eastbound SR 37/Fairgrounds on-ramp to the westbound I-80 off-ramp. These areas experience an LOS F during both morning and evening peak commute hours.

Table 2.1.3-5 Eastbound I-80 Merge, Diverge and Weaving Segment LOS (Build and No-Build)

Location	Type	Peak Hour	LOS				
			Existing	2015 No-Build	2015 Build	2035 No-Build	2035 Build
Off-ramp to EB Redwood	Diverge	AM PM	D E	D E	D <sup>1</sup> E	D F	D <sup>1</sup> F
Off-ramp to WB Redwood	Diverge	AM PM	D D	D E		D E	
On-ramp from Redwood	Merge	AM PM	D E	D E	D E	C E	C E

Source: Department, 2012j.

Note: **Bold** indicates unacceptable LOS.

1. Under the Build Alternative, the I-80/Redwood Parkway interchange configuration would result in the consolidation of eastbound freeway off- and off-ramps.

Table 2.1.3-6 Westbound I-80 Merge, Diverge and Weaving Segment LOS (Build and No-Build)

Location	Type	Peak Hour	LOS		
			Existing	2015	2035
Off-ramp to Redwood	Diverge	AM PM	C C	C C	D C
On-ramp from Redwood	Merge	AM PM	C D	D D	<b>E</b> D

Source: Department, 2012j.

Note: **Bold** indicates unacceptable LOS

Future Build and No-Build Alternative conditions are the same.

Table 2.1.3-7 Eastbound SR 37 Merge, Diverge and Weaving Segment LOS  
(Build and No-Build)

Location	Type	Peak Hour	LOS		
			Existing	2015	2035
Off-ramp to Fairground	Diverge	AM	C	C	C
		PM	D	E	E
Fairgrounds on-ramp to the WB I-80 off-ramp	Weave	AM	<b>F</b>	<b>F</b>	<b>F</b>
		PM	<b>F</b>	<b>F</b>	<b>F</b>

Source: Department, 2011m.

Note: Bold indicates unacceptable LOS

Future Build and No-Build Alternative conditions are the same.

Table 2.1.3-8 Westbound SR 37 Merge, Diverge and Weaving Segment LOS  
(Build and No-Build)

Location	Type	Peak Hour	LOS		
			Existing	2015	2035
Off-ramp to Fairgrounds	Diverge	AM	C	C	D
		PM	C	C	C
On-ramp from Fairgrounds	Merge	AM	C	D	<b>E</b>
		PM	D	D	D

Source: Department, 2012j.

Note: Bold indicates unacceptable LOS

Future Build and No-Build Alternative conditions are the same.

### *Intersection Analysis*

**Table 2.1.3-9** summarizes the existing traffic conditions at the study intersections. With the exception of the following intersections, the majority of the study intersections currently operate at LOS C or better during the morning and evening peak commute hours. The following study intersections currently operate at unacceptable LOS D or worse during the evening peak period:

- Fairgrounds Drive/Sage Street (LOS F) – Unsignalized
- Fairgrounds Drive at Redwood Street/Westbound I-80 Ramps (LOS D) – Signalized
- Tuolumne Street/Redwood Street (LOS E) – Signalized
- Redwood Parkway/Foothill Drive (LOS D) - Unsignalized

The LOS F rating for the unsignalized intersection of Sage Street/Fairgrounds Drive only represents the left turning movement out of Sage Street. At this intersection, drivers were observed to make a two-stage turn; first picking a gap in the northbound traffic then waiting in the shadow of the central median before picking a gap in the southbound traffic. The drivers' overall delay at this location is therefore more than what is represented in this analysis.

Table 2.1.3-9 Intersection LOS under Existing and 2015 Conditions (Build and No-Build)

Intersection ID	Study Intersection	Signal Control Type	Existing				2015 No Project				2015 With Project			
			AM		PM		AM		PM		AM		PM	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1	Fairgrounds Dr at Taper Ave	Signalized	19.9	B	21.3	C	20	C	21.2	C	20	C	21.2	C
2	Fairgrounds Dr at Gateway Dr	Signalized	7	A	7.3	A	7.3	A	7.5	A	7.3	A	7.5	A
3	Fairgrounds Dr at WB 37 Ramps	Signalized	20.4	C	33.1	C	20.6	C	43.9	D	16.3	B	17.1	B
4	Fairgrounds Dr at EB 37 Ramps	Signalized	15.6	B	22.4	C	16.7	B	28.3	C	14.5	B	18.2	B
5	Fairgrounds Dr at Sage St	Stop <sup>1,2</sup> controlled <sup>1,2</sup>	24.7	C	59.2	F	26.6	D	88.6	F	12.4	B	13.3	B
6	Fairgrounds Dr at Fairground Gate	Signalized	3.3	A	9	A	12.5	B	19.4	B	9.7	A	14.5	B
7	Fairgrounds Dr at Six Flags Gate	Signalized	8.7	A	9.3	A	5.8	A	14.3	B	8	A	10.1	B
8	Fairgrounds Dr at Coach Lane	Stop controlled <sup>1</sup>	11.6	B	16.4	C	12.7	B	20.7	C	14.2	B	18.6	C
9	Fairgrounds Dr at Sereno Dr	Signalized	12.4	B	17.9	B	22.4	C	18.1	B	17.4	B	13.2	B
10	Fairgrounds Dr at Valle Vista Ave	Stop controlled <sup>1</sup>	11.6	B	13.3	B	12.2	B	15.7	C	11.1	B	13.4	B
11	Fairgrounds Dr at Redwood St/WB I-80 Ramps	Signalized	33.7	C	38.7	D	33.6	C	38.7	D	NA		NA	
12	Tuolumne St at Sereno Dr	Signalized	27.2	C	31.6	C	27.7	C	30.6	C	27.7	C	30.6	C
13	Tuolumne St at Redwood St	Signalized	32.4	C	59.8	E	34.8	C	62.5	E	34.8	C	62.5	E
14	Redwood Pkwy at EB I-80 Ramps	Signalized	27.7	C	32.8	C	26.6	C	28.7	C	NA		NA	
15	Redwood Pkwy at Foothill Dr	Stop controlled <sup>1</sup>	23.8	C	26.9	D	27.7	D	29.8	D	27.7	D	29.8	D
16	Admiral Callaghan S Ln at Redwood Pkwy	Signalized	16.3	B	24.1	C	17.8	B	23.4	C	13.4	B	17.8	B
17	Admiral Callaghan Ln at EB I-80 Ramps	Stop controlled <sup>1</sup>	9.5	A	14.7	B	9.6	A	29.8	D	NA		NA	
18	Admiral Callaghan Ln at Turner	Signalized	9.9	A	14	B	8.2	A	13.4	B	8.2	A	13.4	B
19	Admiral Callaghan at Columbus	Signalized	10.5	B	26.7	C	27.7	C	36.3	D	27.7	C	36.3	D

Intersection ID	Study Intersection	Signal Control Type	Existing				2015 No Project				2015 With Project			
			AM		PM		AM		PM		AM		PM	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
20	Columbus Pkwy at Ascot Pkwy	Signalized	11.5	B	8.2	A	13.2	B	11.4	B	9.4	A	12	B
21	Fairground Dr at Redwood St										6.9	A	9.2	A
22	Redwood St at I-80 WB Ramps										17.7	B	17.9	B
23	Redwood St at I-80 EB Ramps <sup>3</sup>													
24	Admiral Callaghan N at Redwood <sup>3</sup>													

Source: Department, 2012j.

Note: **Bold** indicated unacceptable LOS

1 Two-way-stop-control intersection: delay and LOS of the worst movement is reported

2. Signalized intersection in Build scenario

3. I-80 EB ramps will be constructed after the completion of the proposed I-80 HOV lane project (anticipated to be operational in year 2035)

As previously discussed, the intersection analysis was first conducted under year 2035 conditions to determine the minimum improvements that would be needed to provide an acceptable LOS. The proposed Build Alternative encompasses the best possible intersection designs, based on the predicted 2035 traffic conditions. The intersection operations under 2035 conditions are evaluated further below, and illustrate that the Build Alternative would comply with the City's traffic impact thresholds. Because the 2035 conditions represent a worst-case scenario in terms of traffic volumes, an evaluation of intersection operation under the City of Vallejo capacity-based LOS thresholds (V/C ratio) was not warranted for the 2015 condition.

#### *Pedestrian and Bicycle Facilities*

Fairgrounds Drive has sidewalks on both sides of the roadway from Redwood Street to just north of the intersection with Sereno Drive. The sidewalk on the west side of Fairgrounds Drive is discontinued north of Sereno Drive, while the sidewalk on the east side of the roadway continues all the way to SR 37. North of Sereno Drive to the signalized intersection at the Solano County Fairgrounds Gate, a bicycle lane is present on the east side of Fairgrounds Drive. Sidewalks exist on the north side of Redwood Street/Redwood Parkway. Bike lanes/shoulders are present on both sides of Redwood Street/Redwood Parkway, approaching Fairgrounds Drive, and end just west of the intersection of Redwood Street and Fairgrounds Drive.

## Environmental Consequences

### **Opening Year 2015**

The improvements proposed under the Build Alternative would have little to no impact on the distribution of traffic within the study area. Based on the 2015 model forecasts, during the morning peak commute hours, there would be a maximum of five additional vehicles attracted to southbound Fairgrounds Drive, and no change in the northbound volume. During the evening peak commute hours, there would be no change in the southbound Fairgrounds Drive volume, an additional four northbound vehicles from Redwood Parkway, and an additional ten northbound vehicles north of Sereno Drive. There would be no impact on the traffic volumes using I-80 or SR 37. Traffic volumes entering and leaving the land use development within the study area would be the same, with or without the Build Alternative. There would be no change in the volumes on Redwood Parkway between the freeway ramp intersections.

#### *Freeway Mainline Analysis*

When compared to the existing conditions, I-80 and SR 37 freeway mainline operations would generally operate with little to no traffic congestion, at the current LOS ratings. Eastbound I-80 segment between the Tennessee Street on ramp and Redwood Parkway off-ramp would slightly degrade from an LOS C in the morning and LOS D in the evening, to an LOS D and E, respectively. The only improvement in this area that would affect freeway operations is the consolidation of the existing two eastbound I-80 off-ramps. This improvement was accounted for in the operations analysis by manually reassigning traffic counts at this location.

For the westbound direction of I-80 and both directions of SR 37, there would be no difference in the geometry of the freeway, or the associated ramps.<sup>9</sup> As such, there would be no difference in the operation of these sections of freeways with or without the Build Alternative. While the Build Alternative would change the intersection and ramp configurations at Redwood Parkway, the overall capacity of the ramps would not change. It is therefore assumed that the volumes entering and leaving I-80 at this interchange would be the same, under either the Build or No-Build Alternative. **Tables 2.1.3-5** through **Table 2.1.3-8** summarize the overall performance of the study area freeways under the 2015 conditions.

#### *Merge, Diverge, and Weaving Analysis*

As previously stated, evening peak commute conditions are expected to slightly deteriorate along eastbound I-80 by the year 2015. During the evening peak commute hours, under the No-Build scenario, traffic congestion is expected to occur on the approach to the eastbound I-80/Tennessee Street on-ramp, as the traffic volumes entering the merge area would exceed capacity. This bottleneck is not unexpected, since the existing condition currently shows some localized slowing in the right lanes at this location. Between the eastbound I-80/Tennessee Street on-ramp and the first Redwood Parkway off-ramp, travel speeds would decrease and travel times would increase. Similar traffic congestion is expected to occur under the Build Alternative. The bottleneck would appear at the same location, and the slow traffic beyond the bottleneck to the proposed consolidated Redwood Parkway off-ramp would be the same. There would be little to no difference in the operation of westbound I-80 and both directions of SR 37, between the existing conditions, No-Build, and Build Alternatives. The analysis of localized conditions at the merge, diverge and weaving locations is summarized in **Table 2.1.3-9**.

#### *Intersection Analysis*

**Table 2.1.3-9** summarizes the study intersection operating conditions for the year 2015 under both the Build and No-Build Alternatives. Under existing conditions, the majority of the study intersections currently operate at LOS C or better during the morning and evening peak commute hours. Four study intersections currently operate at unacceptable LOS D or worse during the evening peak period. With the exception of this improvement, operations under the 2015 No-Build Alternative would generally deteriorate at the majority of the study intersections.

---

<sup>9</sup> Changes to the intersection geometry (i.e., reconfiguration of the turning lanes) at the westbound I-80 and SR 37 ramp termini would occur, as described in **Section 1.3, Project Description**. However, these intersection improvements are not considered part of the ramp geometry that connects directly to the freeway, and do not have an effect on the freeway mainline operations.

The intersection improvements proposed under the Build Alternative would improve intersection operations under 2015 conditions. With the exception of the following, the majority of the study intersections would operate at LOS C or better during the morning and evening peak commute hours:

- Admiral Callaghan Lane/Columbus Parkway (LOS D-evening peak hours)- Signalized
- Tuolumne Street/Redwood Street (LOS E-evening peak hours)-Signalized
- Redwood Parkway/Foothill Drive (LOS D -morning and evening peak hours) - Unsignalized

There is no difference in operations between the Build and No-Build Alternatives for these intersections. The proposed improvements do not degrade operations over the no build condition.

Because the Build Alternative would improve intersection operations under 2015 conditions, an analysis using the City of Vallejo traffic impact guidelines (V/C ratio) was not required.

#### *Pedestrian and Bicycle Improvements*

Class II bike lanes<sup>10</sup> and sidewalks would be constructed to fill the gaps along Fairgrounds Drive, and would provide continuous bicycle and pedestrian access from the Redwood Street/Fairgrounds Drive intersection to the Fairgrounds Drive/SR 37 interchange. Pedestrian and bicycle facilities along Redwood Street/Redwood Parkway would remain the same as the existing condition.

The existing sidewalks on both eastbound and westbound Fairgrounds Drive under SR-37 would be relocated to be between the piers and the abutments of the freeway overcrossing. Placing the sidewalks behind the existing overcrossing piers would increase the separation between the people using the sidewalks and the vehicular traffic along Fairgrounds Drive, and should improve pedestrian safety.

In December, 2011, STA published the Final Bicycle Transportation Plan (Bicycle Plan) for Solano County.<sup>11</sup> The Bicycle Plan serves as a guide to planning and engineering professionals in Solano County's jurisdictions, to encourage the development of a unified bicycle system throughout the County. The system consists of the physical bikeway routes, wayfinding signage, and associated amenities such as bicycle lockers, showers, etc. The Bicycle Plan focuses on a bikeway network that will provide origin and destination connections in Solano County as well as to surrounding counties. It is important to note that each city and the County can adopt the Bicycle Plan and meet the state and federal requirements for grant funding sources to develop the projects contained within. However, each jurisdiction can also develop and approve its own bicycle plan, or use some portion of the Bicycle Plan to do so.

---

<sup>10</sup> Class II bike lanes are areas within paved streets that are identified with striping, stencils, and signs for preferential (semi-exclusive) bicycle use.

<sup>11</sup> Solano Transportation Authority, 2011.

The Bicycle Plan includes the potential construction of a Class I bike path<sup>12</sup> along Fairgrounds Drive, from Marine World Parkway to Redwood Street. Under the Build Alternative, this bike path would be reduced to a Class II bike lane facility. Although the Build Alternative does not propose the construction of a separated bike path, such as the one proposed in the Bicycle Plan, the proposed improvements would establish the bicycle network connectivity the Bicycle Plan intended to establish along Fairgrounds Drive. As such, the proposed Build Alternative is not considered to be in conflict with the Bicycle Plan.

### *Safety Improvements*

The Build Alternative would eliminate the five-way non-standard intersection of westbound I-80/Redwood Street Interchange on- and off-ramps and Fairgrounds Drive. The Build Alternative would improve the angle at which the freeway on and off ramps intersect with Redwood road and separate and move the intersection of Fairgrounds Drive and Redwood Parkway 200 feet to the west. In doing so, the corner sight distance at the peak of the roadway curve on Fairgrounds Drive near Redwood Street would be improved from 55 feet to 300 feet. Eliminating the unconventional five legged intersection should reduce the potential for conflicts due to driver error. Improving the angle of the ramps and the sight distance before the Fairgrounds Drive/Redwood Parkway intersection would aid in improving drivers' ability to avoid crashes, and the maneuverability of turning vehicles through the intersections.

Historic data shows that hook off-ramps have accident rates that are higher than traditional diamond type ramps.<sup>13</sup> The short deceleration and acceleration hook ramps on eastbound I-80 to and from Admiral Callaghan Lane would be eliminated, resulting in increased deceleration length, weaving length and improved sight distance.

### **Design Year 2035**

An HOV/Express lane will be in place in both eastbound and westbound directions of I-80 by 2035, between Carquinez Strait and Fairfield. No HOV lanes are programmed for SR 37 at this time, and the number of freeway lanes would not change from the current conditions. When comparing year 2015 with design year 2035 conditions, there would be no change in the traffic volumes travelling southbound on Fairgrounds Drive or on westbound I-80. Similarly, There would be no change in the forecast volumes on Redwood Parkway between the I-80 ramp intersections, when comparing 2015 with 2035 conditions.

### *Merge, Diverge, and Weaving Analysis*

The analysis of the merge and diverge locations along eastbound I-80 is summarized in **Table 2.1.3-5**. During the morning peak commute period, the merge and diverge locations along eastbound I-80 would operate at an acceptable LOS, while majority of

---

<sup>12</sup> Class I off-street bike paths are facilities for use exclusively by bicycles and pedestrians, with minimal cross-flow by motor vehicles. They are often located in a separate right-of-way.

<sup>13</sup> Federal Highway Administration. 1997. Statistical models of accidents on interchange ramps and speed-change lanes. Report Number FHWA-RD-97-106. Available online at: <http://www.fhwa.dot.gov/publications/research/safety/97106/index.cfm>. Last accessed: January 11, 2012.

these same locations would experience LOS E or LOS F during the evening peak commute hours. No congestion is expected in the westbound direction of I-80 or SR 37 under the 2035 condition. Along eastbound SR 37, the weaving section between Fairgrounds Drive and the westbound I-80 off-ramp is expected to continue to have a poor LOS.

#### *Intersection Analysis*

**Table 2.1.3-10** summarizes the study intersection operating conditions for the year 2035 under both the Build and No-Build Alternatives. Under existing conditions, the majority of the study intersections currently operate at LOS C or better during the morning and evening peak commute hours. Four study intersections currently operate at unacceptable LOS D or worse during the evening peak period. Under 2035 No-Build Alternative evening conditions, the vehicle delay at the majority of the study intersections would deteriorate.

The improvements proposed under the Build Alternative would improve intersection operations under 2035 conditions. With the exception of the following, the majority of the study intersections would operate at LOS C or better:

- Fairgrounds Drive/Coach Lane (LOS F-evening peak hours)-Stop controlled
- Fairgrounds Drive/Valle Vista Ave (LOS F-evening peak hours)-Stop controlled
- Tuolumne Street/Sereno Drive (LOS D-evening peak hours)-Signalized
- Tuolumne Street/Redwood Street (LOS E-morning peak hours, LOS F-evening peak hours)-Signalized
- Redwood Parkway/Foothill Drive (LOS E-morning peak hours, LOS F-evening peak hours)-Stop controlled
- Admiral Callaghan Lane/Columbus Parkway (LOS D-morning peak hours, LOS D-evening peak hours)-Signalized
- Columbus Parkway/Ascot Parkway (LOS F-morning peak hours, LOS D-evening peak hours)-Signalized
- Redwood Street/I-80 eastbound Ramps (LOS D-evening peak hours)-

There are three existing unsignalized intersections within the project limits on Fairgrounds Drive: Sage Street, Coach Lane and Valle Vista Avenue. It is proposed to signalize the Sage Street intersection, and it will operate satisfactorily. As discussed in section 7.1, the low-volume left turn movements at Coach Lane and Valle Vista Avenue, that would experience long delays according to this analysis, are not likely to materialize in practice. Drivers wishing to make these movements are likely to either turn right instead (experiencing much less delay), or (in the case of Valle Vista) choose an alternative route.

The proposed project will not add traffic to any of these intersections, and the project will significantly improve the expected operation in 2035. There is little or no chance that the volumes will exceed the thresholds required to meet a traffic signal warrant during the analysis period at Coach Lane or Valle Vista Avenue, and there are no project impacts that require mitigation.

Table 2.1.3-10 Intersection LOS under Existing and 2035 Conditions (Build and No-Build)

Intersection ID	Study Intersection	Signal Control Type	Existing Conditions				2035 No Project				2035 With Project			
			AM		PM		AM		PM		AM		PM	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1	Fairgrounds Dr at Taper Ave	Signalized	19.9	B	21.3	C	28.9	C	25.6	C	28.9	C	25.6	C
2	Fairgrounds Dr at Gateway Dr	Signalized	7	A	7.3	A	9.2	A	9.9	A	9.2	A	10	A
3	Fairgrounds Dr at WB 37 Ramps	Signalized	20.4	C	33.1	C	60.9	E	87.6	F	17.4	B	23.8	C
4	Fairgrounds Dr at EB 37 Ramps	Signalized	15.6	B	22.4	C	38.4	D	110.3	F	16.7	B	27.4	C
5	Fairgrounds Dr at Sage St	Stop controlled <sup>1,2</sup>	24.7	C	59.2	F	72.1	F	2248	F	10.1	B	12.7	B
6	Fairgrounds Dr at Fairground Gate	Signalized	3.3	A	9	A	22.7	C	68.5	E	15.5	B	24.7	C
7	Fairgrounds Dr at Six Flags Gate	Signalized	8.7	A	9.3	A	16	B	201.7	F	9.3	A	20.2	C
8	Fairgrounds Dr at Coach Lane	Stop controlled <sup>1</sup>	11.6	B	16.4	C	21.1	C	799.1	F	24.6	C	121.2	F
9	Fairgrounds Dr at Sereno Dr	Signalized	12.4	B	17.9	B	15	B	60.6	E	13	B	21.9	C
10	Fairgrounds Dr at Valle Vista Ave	Stop controlled <sup>1</sup>	11.6	B	13.3	B	28.3	D	1571.3	F	16.2	C	196.3	F
11	Fairgrounds Dr at Redwood St/WB I-80 Ramps	Signalized	33.7	C	38.7	D	78.2	E	142	F				
12	Tuolumne St at Sereno Dr	Signalized	27.2	C	31.6	C	33.6	C	46.9	D	33.6	C	46.9	D
13	Tuolumne St at Redwood St	Signalized	32.4	C	59.8	E	64.5	E	110.9	F	64.5	E	110.9	F
14	Redwood Pkwy at EB I-80 Ramps	Signalized	27.7	C	32.8	C	29	C	57.5	E	NA		NA	
15	Redwood Pkwy at Foothill Dr	Stop controlled <sup>1</sup>	23.8	C	26.9	D	42.5	E	61.6	F	42.5	E	61.6	F
16	Admiral Callaghan S at Redwood	Signalized	16.3	B	24.1	C	25.8	C	41.6	D	14	B	26.7	C
17	Admiral Callaghan Ln at EB I-80 Ramps	Stop controlled <sup>1</sup>	9.5	A	14.7	B	10.5	A	31.6	D				
18	Admiral Callaghan Ln at Turner Pkwy	Signalized	9.9	A	14	B	9.5	A	15	B	9.5	A	15	B
19	Admiral Callaghan Ln at Columbus Pkwy	Signalized	10.5	B	26.7	C	50.1	D	50.5	D	50.1	D	50.5	D

Intersection ID	Study Intersection	Signal Control Type	Existing Conditions				2035 No Project				2035 With Project			
			AM		PM		AM		PM		AM		PM	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
20	Columbus Pkwy at Ascot Pkwy	Signalized	11.5	B	8.2	A	101.7	F	52.4	D	101.7	F	52.4	D
21	Fairground Dr at Redwood St										10.8	B	23	C
22	Redwood St at I-80 WB Ramps										18	B	16.8	B
23	Redwood St at I-80 EB Ramps										16.2	B	36.4	D
24	Admiral Callaghan N at Redwood										12.9	B	20.7	C

Source: Department, 2012j.

Note: 1 Two-way-stop-control intersection: delay and LOS of the worst movement is reported

2. Signalized intersection in Build scenario

For intersections that are studied, but are not within the construction footprint, the operation of the signal was optimized for the future traffic demand in order to calculate the expected LOS. These intersections were studied to verify that there are no impacts on those intersections as a consequence of the project. No geometric improvements are proposed for those intersections.

The study intersections outside the project limits were analyzed to determine whether the Build Alternative would comply with City of Vallejo's capacity-based traffic impact guidelines (V/C ratio), to show that the Build Alternative has no significant impact on those intersections. As shown in **Table 2.1.3-11**, in all cases except one, the expected change in V/C is below the City's thresholds. The exception is the Redwood Parkway/Admiral Callaghan Lane (south) intersection. This exceedance is due to a modeling assumption of independent signal timing at this location. Contrary to the modeling assumption, it is anticipated that this intersection would be synchronized with the other traffic signals to the west during the peak commute periods. The cycle length at this intersection during the peaks periods would be driven by the other, more heavily used intersections, which would result in shorter cycle lengths under the Build Alternative when compared to the No-Build Alternative. The operation of this intersection is anticipated to be more efficient under the Build Alternative, with a lower estimated delay and superior LOS, as shown in **Table 2.1.3-11**. However, the calculated V/C would be slightly higher simply because of the different cycle length. Therefore, no action is required.

#### *Temporary Construction Impacts*

As discussed in **Chapter 1.0, Proposed Project**, the Build Alternative would be constructed in multiple stages in order to minimize traffic delays and congestion caused by construction activities. The exact staging of the construction phases would be determined during the final design process. It is anticipated that the proposed construction would require temporary roadway and shoulder closures.

#### **No-Build Alternative**

Under the No-Build Alternative, Fairgrounds Drive would maintain its existing configuration. No realignment of the Fairgrounds Drive/Redwood Street intersection would occur. There would be no improvements to the SR 37/Fairgrounds Drive or I-80/Redwood Parkway/Admiral Callaghan Lane interchanges. The No-Build Alternative would include the planned and funded projects within the corridor, as described in **Chapter 1.0, Proposed Project**. As presented in the analyses above, the increased traffic volumes without capacity improvements would most likely worsen the congestion and slow traffic along Fairgrounds Drive. Without the realignment of the Fairgrounds Drive/Redwood Street intersection, the No-Build Alternative would not improve the current safety issues related to limited sight distance in this area.

For the westbound direction of I-80 and both directions of SR 37, there would be no difference in the geometry of the freeway, or the associated ramps. As such, there would be no difference in the operation of these sections of freeways with or without the Build Alternative. While the Build Alternative would change the intersection and ramp configurations at Redwood Parkway, the overall capacity of the ramps would not change. The forecasting model is not sufficiently sensitive to reliably estimate minor changes in volume that could result from changes in delays at the interchange intersections. It is therefore assumed that the volumes entering and leaving

Table 2.1.3-11 Change in Intersection v/c Under 2035 Conditions (Build and No-Build)

Intersection ID	Study Intersection	Signal Control Type	2035 No-Build				2035 Build							
			AM		PM		AM		V/C Change	Exceeds Thresholds	PM		V/C Change	Exceeds Thresholds
1	Fairgrounds Dr at Taper Ave	Signalized	0.88	C	0.83	C	0.88	C	0.00	No	0.83	C	0.00	No
2	Fairgrounds Dr at Gateway Dr	Signalized	0.66	A	0.72	A	0.66	A	0.00	No	0.72	A	0.00	No
3	Fairgrounds Dr at WB 37 Ramps	Signalized	1.04	E	0.98	F	0.64	B	-0.40	No	0.62	C	-0.36	No
4	Fairgrounds Dr at EB 37 Ramps	Signalized	0.75	D	1.05	F	0.71	B	-0.04	No	0.83	C	-0.22	No
5	Fairgrounds Dr at Sage St	Stop controlled <sup>1,2</sup>	0.57	F	4.85	F	0.34	B	-0.23	No	0.53	B	-4.32	No
6	Fairgrounds Dr at Fairground Gate	Signalized	0.58	C	1.02	E	0.36	B	-0.22	No	0.64	C	-.038	No
7	Fairgrounds Dr at Six Flags Gate	Signalized	0.65	B	1.48	F	0.26	A	-.039	No	0.80	C	-0.68	No
8	Fairgrounds Dr at Coach Lane	Stop controlled <sup>1</sup>	.48	C	1.70	F	0.32	C	-0.16	No	0.56	F	-1.14	No
9	Fairgrounds Dr at Sereno Dr	Signalized	0.58	B	0.99	E	0.50	B	-0.08	No	0.82	C	-0.17	No
10	Fairgrounds Dr at Valle Vista Ave	Stop controlled <sup>1</sup>	0.43	D	5.42	F	0.23	C	-0.20	No	1.29	F	-4.13	No
11	Fairgrounds Dr at Redwood St/WB I-80 Ramps	Signalized												
12	Tuolumne St at Sereno Dr	Signalized	0.71	C	0.91	D	0.71	C	0.00	No	0.91	D	0.00	No
13	Tuolumne St at Redwood St	Signalized	0.79	E	1.15	F	0.73	E	0.00	No	1.15	F	0.00	No
14	Redwood Pkwy at EB I-80 Ramps	Signalized												
15	Redwood Pkwy at Foothill Dr	Stop controlled <sup>1</sup>	0.47	E	0.63	F	0.45	E	-0.02	No	0.63	F	0.00	No
16	Admiral Callaghan S Ln at Redwood	Signalized	0.48	C	0.79	D	0.48	B	0.00	No	0.84	C	0.05	Yes

Intersection ID	Study Intersection	Signal Control Type	2035 No-Build				2035 Build							
			AM		PM		AM		V/C Change	Exceeds Thresholds	PM		V/C Change	Exceeds Thresholds
17	Admiral Callaghan at EB I-80 Ramps	Stop controlled <sup>1</sup>	0.24	A	0.79	D	0.24		0.00	No	0.39		-0.40	No
18	Admiral Callaghan Ln at Turner Pk	Signalized	0.23	A	0.61	B	0.23	A	0.00	No	0.61	B	0.00	No
19	Admiral Callaghan Ln at Columbus	Signalized	0.98	D	0.92	D	0.98	D	0.00	No	0.92	D	0.00	No
20	Columbus Pkwy at Ascot Pkwy	Signalized	1.06	<b>F</b>	0.93	D	1.06	<b>F</b>	0.00	No	0.93	D	0.00	No
21	Fairground Dr at Redwood St						0.60	B			0.92	C		
22	Redwood St at I-80 WB Ramps						0.74	B			0.80	B		
23	Redwood St at I-80 EB Ramps						0.63	B			1.01	D		
24	Admiral Callaghan N Ln at Redwood Pkwy						0.53	B			0.83	C		

Source: Department, 2012j.

Note: **Bold** indicates unacceptable LOS

1. Two-way-stop-control intersection: delay and LOS of the worst movement is reported

2. Signalized intersection under Build Alternative

I-80 at this interchange would be the same, under either the Build or No-Build Alternative. The only improvement proposed under the Build Alternative that would affect freeway operations is the consolidation of the existing two eastbound I-80 off-ramps. Under the No-Build Alternative, eastbound I-80 freeway operations would experience a slight decrease in travel speeds and a minor degradation of LOS ratings in some locations.

In December, 2011, STA published the Final Bicycle Transportation Plan (Bicycle Plan) for Solano County. The Bicycle Plan includes the potential construction of a Class I bike path along Fairgrounds Drive, from Marine World Parkway to Redwood Street. Assuming that the City of Vallejo adopts the County's Bicycle Plan, this bike path would potentially be constructed under the No-Build Alternative. Under the Build Alternative, this bike path would be reduced to a Class II bike lane facility.

### Avoidance, Minimization, and/or Mitigation Measures

As described in **Chapter 1.0**, a preliminary Transportation Management Plan (TMP) has been developed in order to minimize traffic delays while maintaining worker safety during the construction of the Build Alternative. During the final design phase of the project, a detailed TMP would be developed to minimize delays during construction. The objective of the TMP would be to minimize the impacts that construction activities would have on the traveling public. The plan would include press releases to notify and inform motorists, business community groups, local entities, emergency services, and elected officials of upcoming road closures and detours. Traffic management strategies that require action by the construction contractor would be presented in detail in the Build Alternative's technical specifications of the bid contract, and are considered part of the project.

#### 2.1.4 VISUAL/AESTHETICS

##### Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 as amended establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically (emphasis added) and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)]. To further emphasize this point, the Federal Highway administration in its implementation of NEPA [23 U.S.C. 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act (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])

## Affected Environment

Information in this section is based on the *Visual Impact Assessment* prepared for the project (Department, 2012k). The visual impact assessment was prepared in accordance with the guidelines in the Federal Highway Administration's *Visual Impact Assessment for Highway Projects* (FHWA, 1981). The study area for visual resources (visual study area) encompasses the project's viewshed which is defined as the immediate areas in which proposed improvements would occur as well as areas visible from the project area and views from off-site locations toward the project area. The viewshed is limited to the south and west by existing development and topography. The viewshed is more expansive to the east, especially in the northern portion of the project limits. The project site is located along portions of Fairgrounds Drive and Redwood Parkway/Redwood Street within the City of Vallejo and extends from the Fairgrounds Drive/ SR 37 interchange to the Redwood Parkway/ I-80 interchange.

### Local Policies and Guidelines

Local city and county land use plans were reviewed to identify goals and policies concerning visual resources in the visual study area.

The City of Vallejo Department of Public Works' *Regulations and Standard Specifications for Public Improvements* (1992) includes polices geared toward the design of streets (Section 3) and landscaping (Section 5). These regulations identify design standards for street width, pavement type, and the type and size of roadside landscaping that would ensure visual consistency in the visual study area.

The Solano County General Plan Resources Element (2008) lists roadways considered scenic by the County. The County considers the portions of I-80 and SR 37 in the project vicinity as scenic roadways.

The Department has a scenic highway program. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. No officially designated State scenic highways, or highways eligible for such designation, are within the visual study area.

### Visual Setting

The regional area surrounding the visual study area consists of urban development immediately surrounding Vallejo, with open land areas in the northeast portions of Vallejo and throughout much of Benicia's sphere of influence area. Urban development in this region consists mainly of shopping and service areas, commercial, and residential development. Rolling hillsides and Sulphur Springs Mountain are located to the northeast portion of Vallejo. According to the Vallejo General Plan, Sulphur Springs Mountain provides an important visual amenity to both residents and visitors passing through the city.

The local setting of the visual study area consists of residential and commercial development, moderately trafficked arterials, and heavily trafficked highways. There are views of the hillsides and Sulphur Springs Mountain from a number of locations within the project limits. From the intersection of Fairgrounds Drive and Redwood Parkway, traveling in the northbound direction on Fairgrounds Drive, motorists, pedestrians and

residents have views of residential and commercial development immediately adjacent to the roadway. As travelers continue north along Fairgrounds Drive to SR 37, views of the hillsides and Sulphur Springs Mountain appear and remain visible. Lake Chabot is located on the east side of Fairgrounds Drive; however, because of dense vegetation, the Lake is not visible to motorists and pedestrians travelling on Fairgrounds Drive. There are highly visible views of Six Flags Discovery Kingdom, on the west side of Fairgrounds Drive, which include colorful signage and large roller coasters. On the east side of Fairgrounds Drive, the Solano County Fairgrounds, with its large parking area, stadium and race track, and golf course are visible.

Views at the SR 37/Fairgrounds Drive intersections include some newer commercial development such as fast-food establishments and a hotel complex. North of SR 37 are single-family residential subdivisions.

### **Existing Visual Quality**

The visual setting and visual quality of the study area can be described by five distinct landscape units. Landscape units are geographically discreet areas that are often separated by natural features such as bodies of water, ridges, or changes in vegetation. Each landscape unit has a certain visual character based upon the land uses and features that comprise it. **Figure 2-12** depicts the location of these landscape units.

#### *Landscape Unit A*

This landscape unit is characterized as a transportation corridor surrounded by a suburban neighborhood with moderate density residential development, and a Best Western Inn & Suites located on the east side of Fairgrounds Drive. There is ornamental landscaping along the sides of the Fairgrounds Drive and along the median (see **Figure 2-13**). Motorists' and pedestrians/bicyclists' views are generally restricted to the roadway itself. The landscape elements do not combine to create a striking and distinctive pattern, resulting in low vividness. There is man-made development interspersed with natural elements of the landscape such as trees, hills, and grass, resulting in high intactness. The landscape unit as a whole provides a visually coherent arrangement of man-made and natural elements resulting in moderate unity. Therefore, this landscape unit can be classified as having moderate visual quality.

#### *Landscape Unit B*

This landscape unit is characterized as generally rural, open land with limited structures and some ornamental landscaping (see **Figure 2-14**). Many of the structures (including signage and an ornamental wall) in this landscape unit are associated with Six Flags Discovery Kingdom, which is located on the west side of Fairgrounds Drive. There are also views of some commercial development and a hotel on the east side of Fairgrounds Drive and views of the hillsides to the northeast.

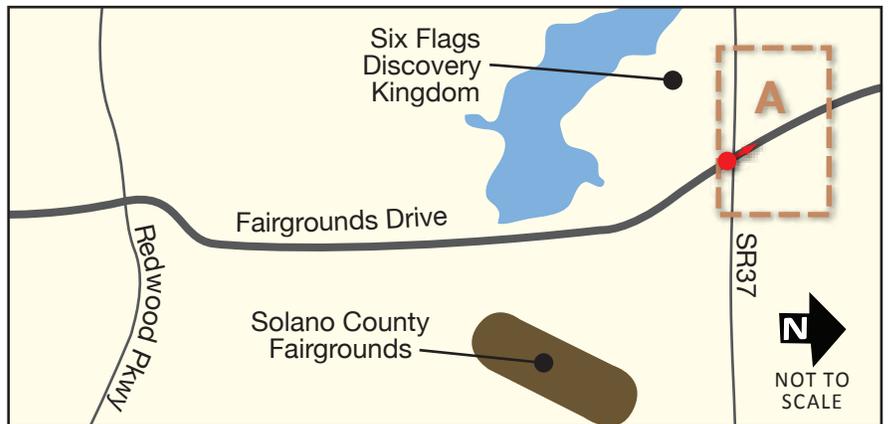


Landscape Units

Figure



South of Fairgrounds Drive/State Route 37 Interchange looking north



Landscape Unit A: Existing Conditions

Figure



South of Fairgrounds Drive/State Route 37 Interchange looking south



Fairgrounds Drive looking north towards Six Flags Discovery Kingdom



Landscape Unit B: Existing Conditions

Figure

The landscape elements in this landscape unit do not combine to create a striking and distinctive pattern, resulting in low vividness. The integration of man-made and natural landscape in this landscape unit can be described as having moderate intactness and low unity. This landscape unit can be classified as having low visual quality.

#### *Landscape Unit C*

This landscape unit is characterized as a flat valley with heavy vegetation and includes surface parking to both the east and west associated with Six Flags Discovery Kingdom and the Solano County Fairgrounds. Within this landscape unit, there are views of the hillsides to the northeast and of Six Flags Discovery Kingdom to the west (see **Figure 2-15**). There are sporadic views of the hillsides to the east, through some open spaces in vegetation. This landscape unit also includes Rindler Creek and a riparian area on the west side of Fairgrounds Drive. There is moderate vividness, visual intactness, and unity in this landscape unit as the dense vegetation along both sides of Fairgrounds Drive provides integrity and cohesiveness to the visual pattern. This landscape unit can be classified as having moderate visual quality.

#### *Landscape Unit D*

This landscape unit is characterized as a suburban area with moderate residential density and some commercial development (see **Figure 2-16**). The area includes one-story single-family housing, a gas station, restaurant, and some small businesses. The area to the west of Fairgrounds Drive and north of Lee's Market Gas Station located at the Sereno Drive and Fairgrounds Drive intersection is steeply-sloped with light vegetation. There are views of the hillsides to the north and east from within this landscape unit. This landscape unit can be described as having moderate vividness as the man-made development contrasts visually somewhat in form, line and color for the setting. There is high intactness due to the distinction between the man-made environment and natural environment. There is low visual unity as there is no coherent visual pattern. The landscape unit can be classified as having moderate visual quality.

#### *Landscape Unit E*

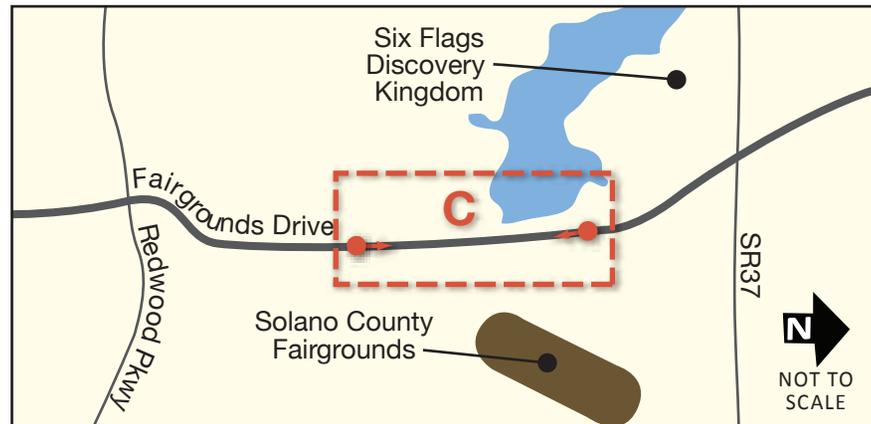
This landscape unit is characterized as a transportation corridor with one-story single family housing and some commercial development (see **Figure 2-17**). This is a heavily trafficked area with motorists traveling east and west on Redwood Parkway and north and south on Fairgrounds Drive and Admiral Callaghan Lane (on the east side of I-80). The commercial development in the area includes gas stations, fast-food restaurants, and strip malls. There are some views of the hillsides to the northeast. This landscape unit can be described as having low vividness as the man-made development is only minimally visually contrasting in form, line, or color. There is low visual intactness as the man-made development appears to be encroaching on the natural environment. As the landscape elements do not join together to form a cohesive visual pattern, the visual unity is low. This landscape unit can be classified as having low visual quality.



Fairgrounds Drive at Solano County Fairgrounds entrance looking south



Fairgrounds Drive at Coach Lane looking north



Landscape Unit C: Existing Conditions

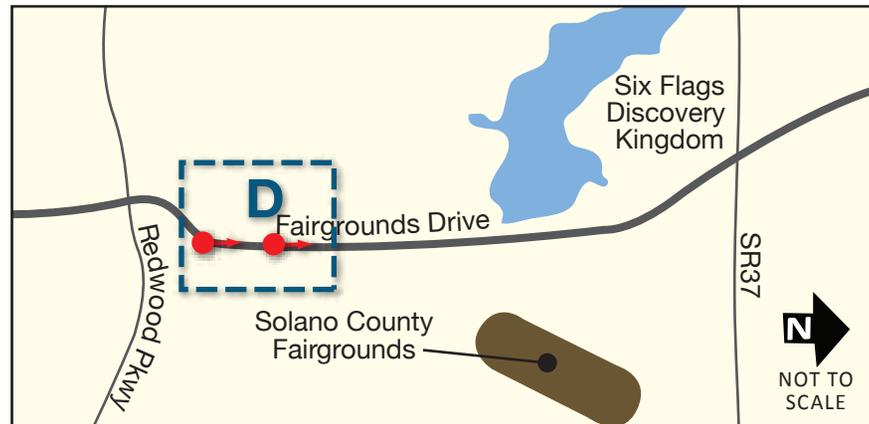
Figure



Fairgrounds Drive north of Sereno Drive looking north



Fairgrounds Drive at Valle Vista Avenue looking north



Landscape Unit D: Existing Conditions

Figure



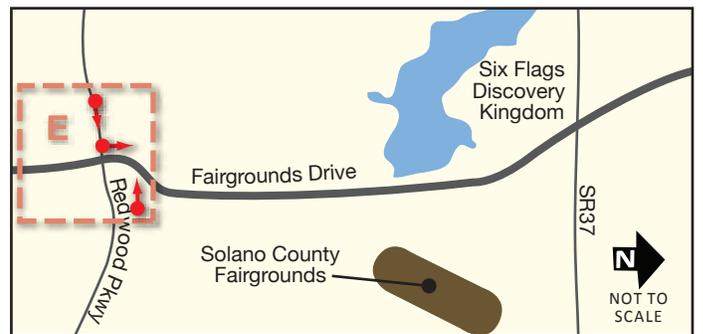
Looking north towards Fairgrounds Drive from Redwood Parkway



Redwood Street at Moorland Street looking east



Admiral Callaghan Lane looking west



## **Viewer Groups**

Viewer groups within the visual study area include motorists, bicyclists/pedestrians, residents in the surrounding homes, and employees and patrons of the commercial businesses along the project limits. Viewer sensitivity is defined both as the viewers' concern for scenic quality and the viewers' response to change in the visual resources that make up the view.

### *Motorists*

Motorists include both drivers and passengers traveling along Fairgrounds Drive within in the project area and through the SR 37/Fairgrounds Drive interchange, Redwood Street/Fairgrounds Drive intersections, and the I-80/Redwood Parkway interchange. Motorists drive through the project area daily. These viewers experience a short and constantly changing sequence of views as they travel through the project limits.

Drivers traveling along at normal speeds typically focus their attention on long-range, non-peripheral views while maintaining focus on the roadways and traffic in front of them.<sup>14</sup> Passengers would likely have a heightened awareness of a wide range of views while traveling since they are not focused on the task of driving. Motorist sensitivity to visual change within the project limits would be considered moderate to low because there are few to no substantial visual resources within the project limits and project viewshed and the high levels of traffic that occur on a daily basis along project roadways.

### *Bicyclist and Pedestrians*

Fairgrounds Drive has sidewalks on both sides of the road from the southern end of Fairgrounds Drive until just north of the intersection with Sereno Drive. North of Sereno Drive, there is a sidewalk and a bicycle lane on both sides of the road. A bike lane/shoulder exists on both sides of Redwood Street and a sidewalk on the north side of Redwood Street, approaching Fairgrounds Drive.<sup>15</sup> Pedestrians and bicyclists generally have a heightened awareness of a wide range of views as they are slow-moving and can look at views for a greater length of time. Bicyclists and pedestrian sensitivity to visual change within the project limits would be considered moderate to low because there are few to no substantial visual resources within the project limits and project viewshed and the high levels of traffic that occur on a daily basis along project roadways.

### *Residents*

There are several residential neighborhoods and multi-family apartment buildings along and near the visual study area. The majority of residences are located at the south end of the project limits, on the west side of Fairgrounds Drive and north and south of Redwood Street and on Moorland Street. These residents' sensitivity to visual change within the visual study area would be considered moderate because of their immediate and direct views of the project area.

---

<sup>14</sup> *Visual Impact Assessment for Highway Projects*, Federal Highway Administration (FHWA), March 1981

<sup>15</sup> The bike lanes end at the intersection of Fairgrounds Drive and Redwood Street.

Residences are also located in the south-east quadrant of the I-80/Redwood Parkway interchange and north of the SR 37/Fairgrounds Drive interchange. These residents sensitivity to visual change is considered low because views of the project would be blocked by intervening structures (e.g., SR 37), topography or orientation of the residences. Furthermore, these residents are located on a hill and so have primarily unobstructed views. These residents sensitivity to visual change is considered low.

#### *Commercial Area Employees and Customers*

There are a number of commercial uses, ranging from restaurants to hotels and businesses, along portions of Fairgrounds Drive, Admiral Callaghan Lane, and Redwood Parkway. Because these viewers would have relatively short-duration views of the project site their sensitivity to visual change is considered low.

## Environmental Consequences

### **Build Alternative**

#### *Landscape Unit A*

The Build Alternative would not alter the overall aesthetic character of Landscape Unit A. The Build Alternative would only modify the existing roadway by widening the existing roadway and restriping the pavement. The Build Alternative would not add or remove any elements that would impact views (see **Table 2.1.4-1**). The Build Alternative would include two 3-foot (maximum) retaining walls, one on either side of Fairgrounds Drive, underneath the SR 37 overcrossing. As these retaining walls would be located below the overcrossing and views to the retaining walls would be limited, their installation would not affect visual quality nor block any existing views. These retaining walls would be designed such that they match the Six Flags Discovery Kingdom ornamental walls with decorative waves.

Table 2.1.4-1 Visual Quality Change from Landscape Unit A

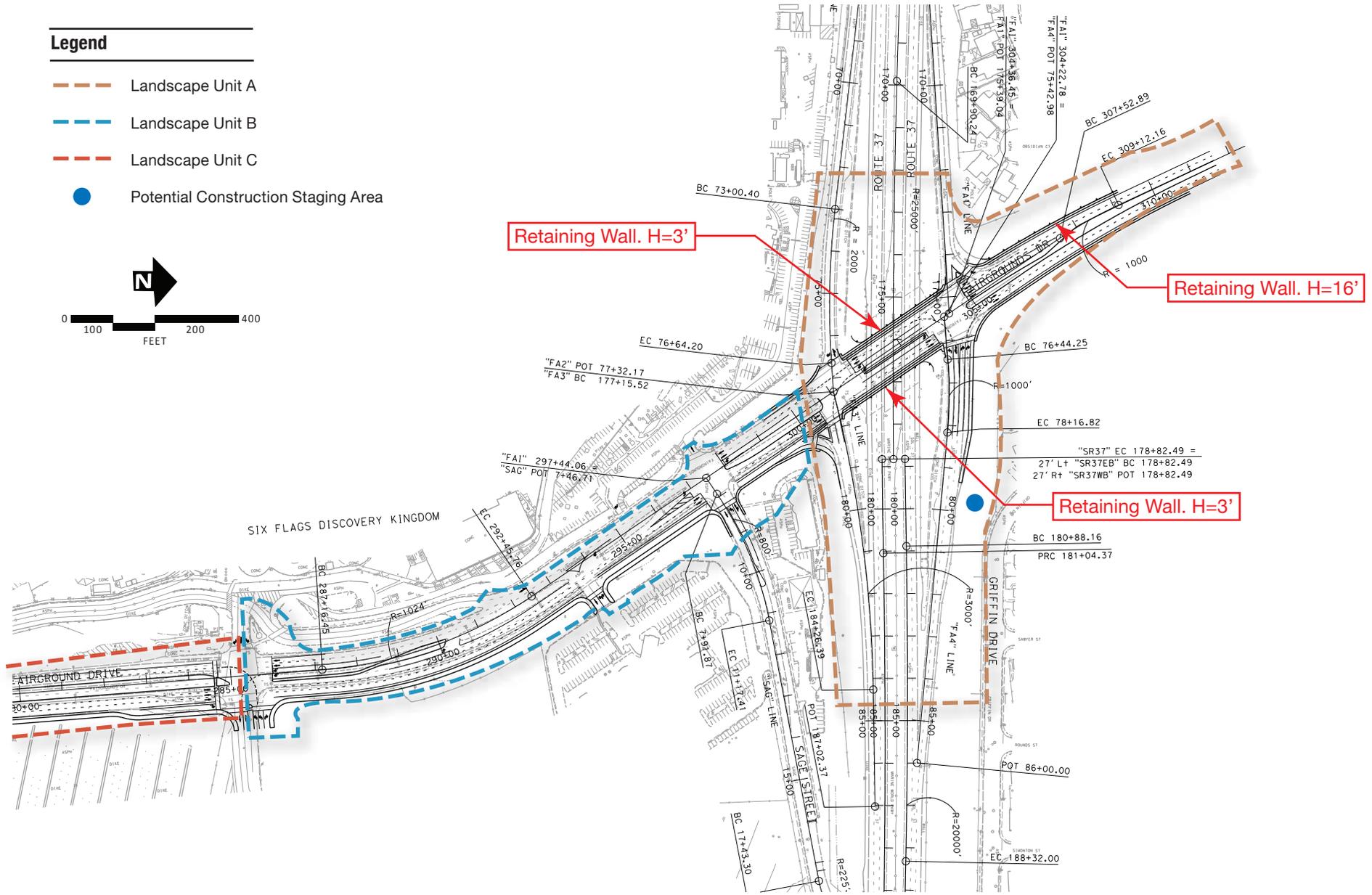
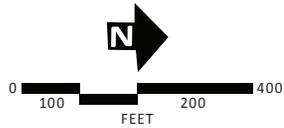
Alternative	Vividness	Intactness	Unity	Overall Visual Quality
Existing Conditions	Low	High	Moderate	Moderate
No-Build Alternative	No Change	No Change	No Change	No Change
Build Alternative	Negligible	Negligible	Negligible	Negligible

Source: Department, 2012k.

The Build Alternative would also include a 16-foot retaining wall (at its highest point) on the west side of Fairgrounds Drive, just north of SR 37. The location of all of the retaining walls is shown in **Figure 2-18**. There is an existing retaining wall at this location with landscaping and existing residences above it. The Build Alternative would rebuild and raise this wall by a maximum of 3 feet taller than the existing wall. This would occur where the existing wall is approximately 10 to 11 feet.

**Legend**

- Landscape Unit A
- Landscape Unit B
- Landscape Unit C
- Potential Construction Staging Area



Landscape Unit A CSA and Retaining Walls

Figure

At this area, the proposed wall would be approximately 13 to 14 feet. This retaining wall would be designed such it would match the Six Flags Discovery Kingdom ornamental walls with decorative waves. Motorists traveling through the SR 37/Fairgrounds Drive interchange would see a similar aesthetic, although a slightly higher and more massive retaining wall. This addition would not result in a substantial change from the existing aesthetic, and the main elements of the view and visual quality in this area would not change. Views to the west from Fairgrounds Drive would not be affected.

The Build Alternative would result in negligible changes to the vividness, intactness, and unity within Landscape Unit A. The vividness would continue to be low as the Build Alternative would not combine landscape elements to create a striking and distinctive pattern. The intactness would remain high as the man-made development within this Landscape Unit would remain interspersed with natural elements of the landscape. The landscape unit would continue to have moderate unity as the arrangement of man-made and natural elements would continue to be visually coherent. Therefore, the change in overall visual quality would be negligible and the resulting visual quality would be moderate.

#### *Landscape Unit B*

The project would result in the widening of Fairgrounds Drive to the east to provide additional through lanes and turn lanes. The median of the roadway, sidewalk, and entry drives along the east-side of the roadway would be re-built. The horizontal and vertical alignment of the roadway would not change. The widening would primarily affect existing landscaped areas along the east side of Fairgrounds Drive associated with commercial development. The overall aesthetic of the roadway would not change substantially but would appear to be slightly larger due to the additional lane in the northbound direction. The southbound direction and west side of the Fairgrounds Drive would not change within Landscape Unit B. As a result, the Build Alternative would not alter views from or within this landscape unit. Views of the hillsides to the east would remain intact.

The Build Alternative would result in negligible changes to the vividness, intactness, and unity within Landscape Unit B. The vividness would continue to be low as the Build Alternative would not combine landscape elements to create a striking and distinctive pattern. The intactness would remain moderate and the unity would remain low as the integration of man-made features and the natural landscape in this landscape unit would not be altered. Therefore, the change to overall visual quality would be negligible and the resulting visual quality would be low (see **Table 2.1.4-2**).

Table 2.1.4-2 Visual Quality Change from Landscape Unit B

Alternative	Vividness	Intactness	Unity	Overall Visual Quality
Existing Conditions	Low	Moderate	Low	Low
No-Build Alternative	No Change	No Change	No Change	No Change
Build Alternative	Negligible	Negligible	Negligible	Negligible

Source: Department, 2012k.

### *Landscape Unit C*

The Build Alternative would widen Fairgrounds Drive from a two-lane roadway (one lane in each direction) to a four-lane roadway (two lanes in each direction) within Landscape Unit C.<sup>16</sup> The vertical alignment of the roadway would not change. The widening would occur to the east onto the Solano Fairgrounds property and require the relocation of Rindler Creek which would be relocated to parallel the east side of the widened roadway. The project would not widen the roadway to the west and the existing drainage feature and associated vegetation on the west side of Fairgrounds Drive would not be affected by the project.

As a result, the overall visual character of Landscape Unit C would not change dramatically. Fairgrounds Drive would appear as a much larger and wider roadway. However, the primary elements that comprise the visual quality in this area would remain; Fairgrounds Drive lined by vegetation and drainage features on both the east and west sides. Views of the hillsides and of Six Flags Discovery Kingdom would also remain intact. Mitigation measures listed in **Avoidance, Minimization, and/or Mitigation Measures** below would require trees that are removed to realign Rindler Creek be replanted. With this mitigation, there would be not substantial change in the aesthetic quality of Rindler Creek and existing views within Landscape Unit C would be restored.

The Build Alternative would result in negligible changes to the vividness, intactness, and unity within Landscape Unit C. Although the Build Alternative would include the realignment of Rindler Creek, the vividness, intactness, and unity within the landscape unit would continue to be moderate as the Build Alternative would replant the removed vegetation. Therefore, the change to overall visual quality would be negligible and the resulting visual quality would be moderate (see **Table 2.1.4-3**).

The Build Alternative would result in negligible changes to the vividness, intactness, and unity within Landscape Unit C. Although the Build Alternative would include the realignment of Rindler Creek, the vividness, intactness, and unity within the landscape unit would continue to be moderate as the Build Alternative would replant the removed vegetation. Therefore, the change to overall visual quality would be negligible and the resulting visual quality would be moderate (see **Table 2.1.4-3**).

Table 2.1.4-3 Visual Quality Change from Landscape Unit C

Alternative	Vividness	Intactness	Unity	Overall Visual Quality
Existing Conditions	Moderate	Moderate	Moderate	Moderate
No-Build Alternative	No Change	No Change	No Change	No Change
Build Alternative	Negligible	Negligible	Negligible	Negligible

Source: Department, 2012k.

<sup>16</sup> Fairgrounds Drive is a two-lane road south of the Six Flags Discovery Kingdom parking lot exit and a four-lane road north of the exit.

### *Landscape Unit D*

The Build Alternative would widen Fairgrounds Drive from a 2-lane roadway with a median turn lane to a 4-lane roadway with a median turn lane. The vertical alignment of the roadway would not change. Fairgrounds Drive would be widened to both the east and west which would affect landscaped areas, private property and result in the displacement of the Lee's Market Gas Station located at 501 Fairgrounds Drive, and JJ's Fish and Chicken located at 515 Fairgrounds Drive. A maximum 20-foot retaining wall would be installed on the west side of Fairgrounds Drive, just south of Coach Lane. **Figure 2-19** shows the location of the retaining wall. As there is an existing steep slope adjacent to the road which currently blocks views to the west, the installation of the retaining wall would not change existing views (see **Figure 2-20**). Viewer groups would experience a noticeable visual change due to the removal of the commercial developments and road-widening, however the main elements of visual character of the area would remain intact. Motorists and residents would continue to experience views of the roadway and surrounding development with long-distance views of the hillsides. Therefore, while the addition of the retaining wall and the removal of buildings would change the visual appearance of the Landscape Unit, viewer response is not expected to be adverse and the overall visual quality would not be affected (see **Table 2.1.4-4**).

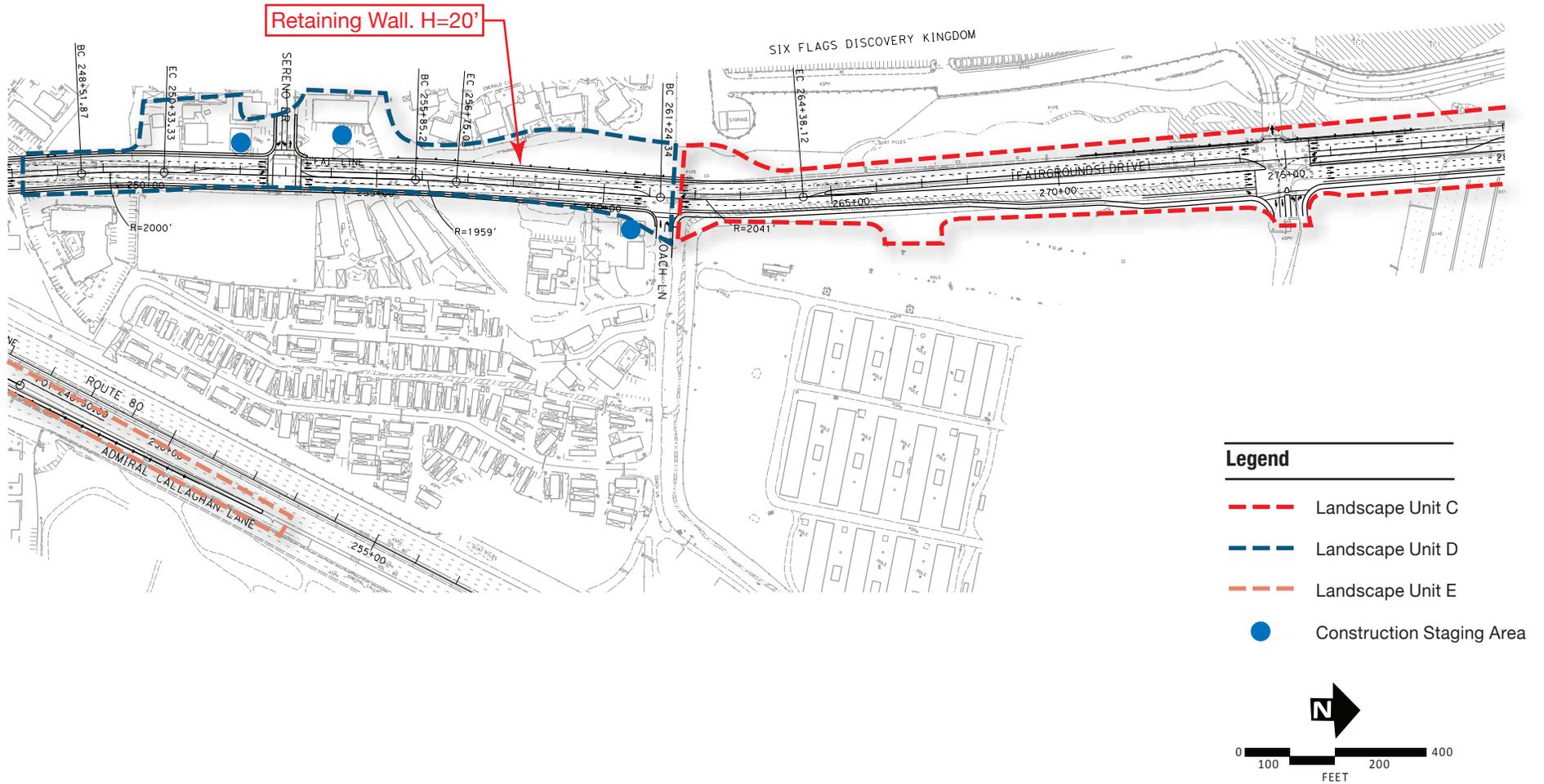
Table 2.1.4-4 Visual Quality Change from Landscape Unit D

Alternative	Vividness	Intactness	Unity	Overall Visual Quality
Existing Conditions	Moderate	High	Low	Moderate
No-Build Alternative	No Change	No Change	No Change	No Change
Build Alternative	Negligible	Negligible	Negligible	Negligible

Source: Department, 2012k.

### *Landscape Unit E*

On the west side of I-80, the Build Alternative would realign Fairgrounds Drive to connect with Redwood Street farther to the west. In doing so, Moorland Street, on the north side of Redwood Street, would no longer connect to Redwood Street and would end in a cul-de-sac. These improvements would result in the displacement of several residences to accommodate the realigned Fairgrounds Drive and cul-de-sacing of Moorland Street. The westbound on- and off-ramps to I-80 at Redwood Parkway would also be realigned to form a tight-diamond configuration. Several retaining walls would be constructed along Fairgrounds Drive (a maximum of 6 to 8 feet high) and one retaining wall would be constructed along Redwood Street (a maximum of 10 feet high) (see **Figure 2-21**).



Landscape Unit D Retaining Wall

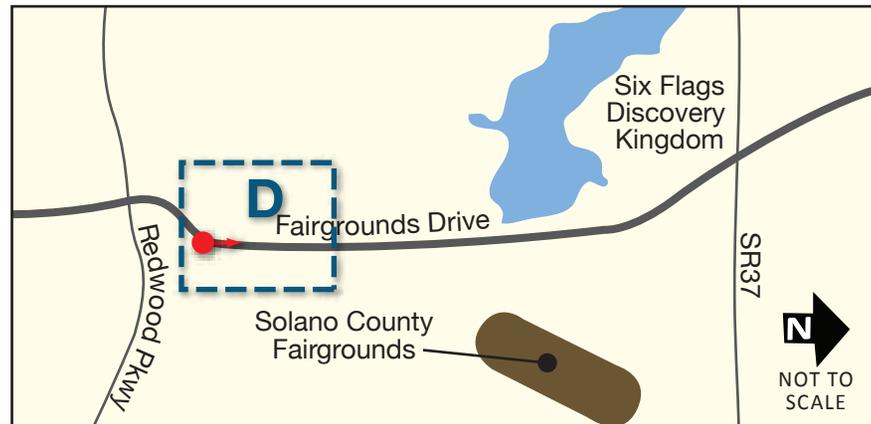
Figure



Fairgrounds Drive at Sereno Drive looking north

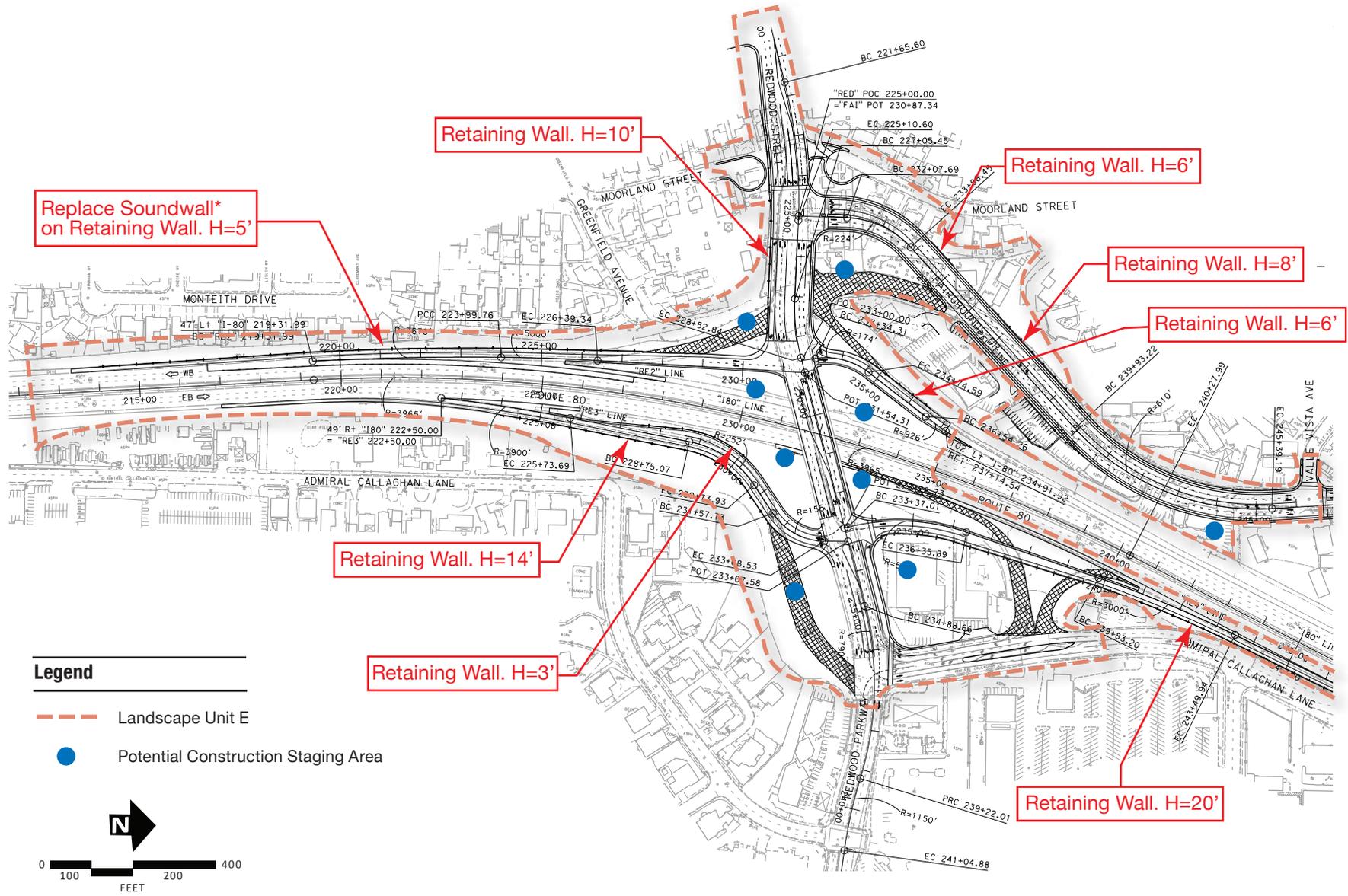


Visual Simulation of Build Alternative



Landscape Unit D: Visual Simulation

Figure



\*Note: The total height for this retaining wall would be 5 feet.

Landscape Unit E CSA and Retaining Walls

Figure

Fairgrounds Drive would be widened which would result in the displacement of multi-family residences, located at 251 Fairgrounds Drive; the 76 gas station, located at 223 Fairgrounds Drive, America's Best Inn, located at 300 Fairgrounds Drive; and Annie's Panda Garden, located at 320 Fairgrounds Drive.

There are five potential noise barriers located within Landscape Unit E (see **Figure 2-22** and **Table 2.1.4-5**). These walls could range in height from 6 to 16 feet tall. The Project Development Team will make the final decision regarding noise abatement to be included in the project and will incorporate that decision into the final environmental documentation. Any proposed changes to the noise abatement subsequent to adoption of the final environmental document must be reviewed with the Caltrans noise specialists to ensure adequate acoustic performance.

Table 2.1.4-5 Potential Noise Barrier Locations

Noise Barrier ID	Location
1	Eastbound I-80 ("C6 Line 210+00 to 225+00)
2	Westbound Redwood Street Right-of-Way ("Red" Line 221+00 to 227+00)
3	Southbound Fairgrounds Drive ROW ("FAI" Line 231+00 to 236+00)
4	Southbound Fairgrounds Drive ("FAI" Line 236+50 to 239+30)
5	Southbound Fairgrounds Drive Right-of-Way ("FAI" Line 241+00 to 246+00)

Source: Department, 2012k.

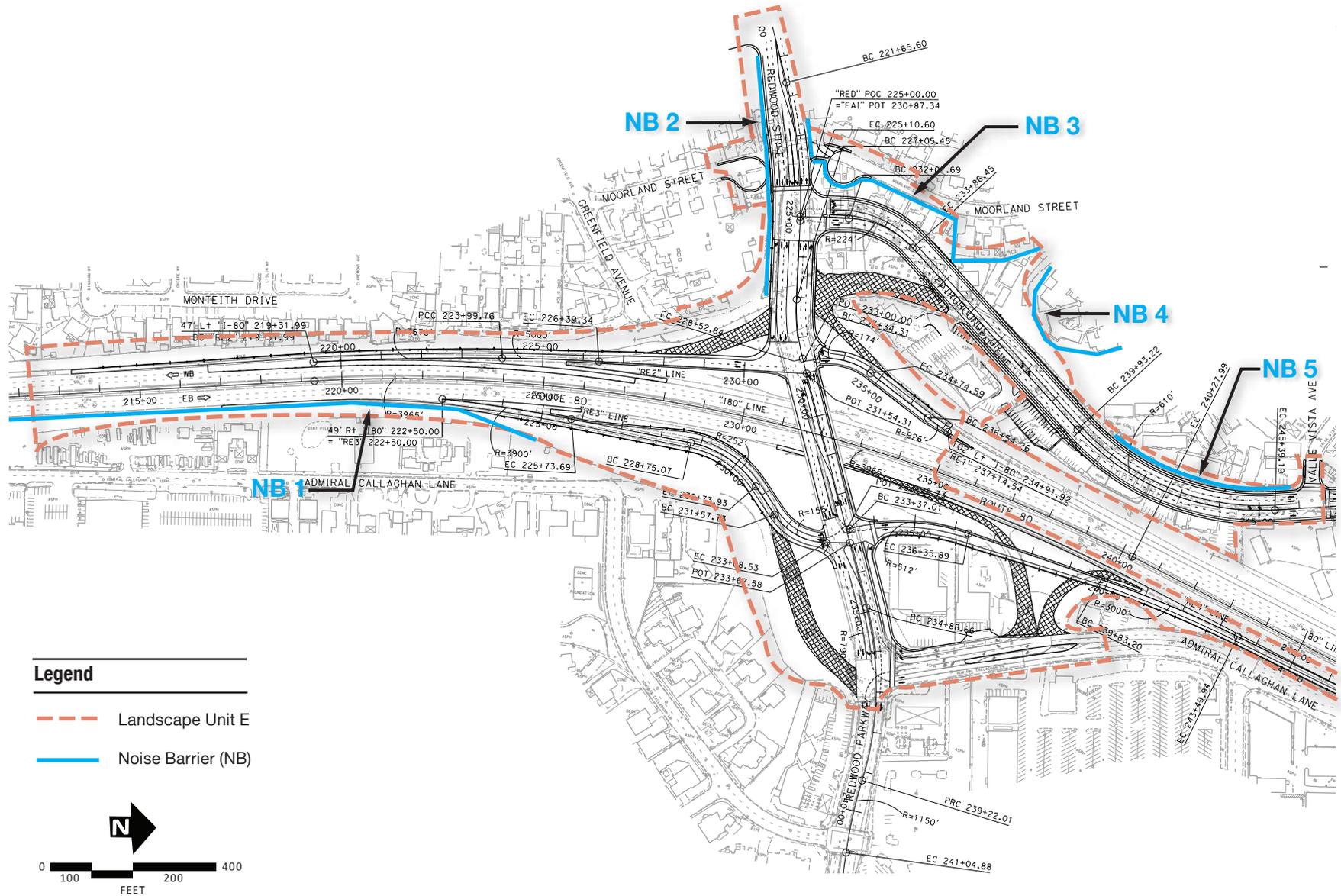
Noise barrier 1 would be visible to motorists travelling along I-80, but would not be visible to residents in the surrounding area. There would not be a substantial change in views.

Noise barrier 2 would be located in an area dominated by existing roadway and a commercial building. This noise barrier could potentially block views from residences of surrounding roadways and commercial development which could potentially be a beneficial effect on views.

Noise barrier 3 could block views to the east from residences located on Moorland Street (see **Figure 2-23**).

Noise barrier 4 would be located behind residences on the top of a hill adjacent to Fairgrounds Drive. This noise barrier could block views to the east from residences in this area.

Noise barrier 5 would be located along existing apartment buildings on Fairground Drive. This wall would block views from lower levels of the apartment buildings. However, lower units do not have significant views beyond the immediate street due to intervening topography. The upper units have views to the east. And typically, the height of the noise barrier would not be high enough to block views from these units.



Landscape Unit E Potential Noise Barrier Locations

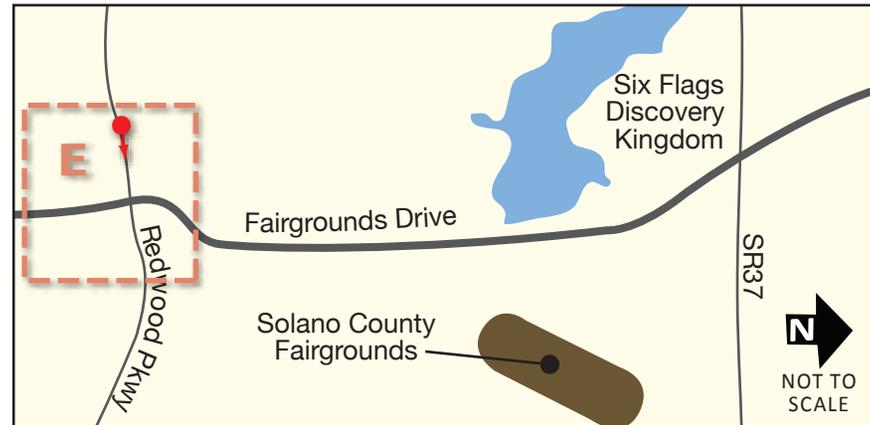
Figure



Redwood Street at Moorland Street looking east



Visual Simulation of Build Alternative



Landscape Unit E: Visual Simulation

Figure

As shown in **Figure 2-23**, the Build Alternative would result in substantial visual change on the west side of I-80 as a result of the potential residential and commercial displacement, realigned roadways and noise barrier location.<sup>17</sup> This change however would not result in a substantial effect on visual quality. The existing visual quality of this area is low with low vividness, intactness, and unity (see **Table 2.1.4-6**). There are no scenic resources or substantial scenic views in this area. The predominate viewer groups consist of motorists and residents who currently have views of busy streets and I-80. As a result, while the visual changes will be noticeable to motorists, residents and employees in the area, viewer response is expected to be minimal.

On the eastside of I-80, the Build Alternative would include realigning the eastbound off- and on-ramps from I-80 to Redwood Parkway. These improvements would result in the potential displacement of the American Furniture Gallery commercial building, located at 709 Admiral Callaghan Lane. A large retaining wall (up to 14 feet high) would be constructed along the eastbound off-ramp to Redwood Parkway at the bottom of a large slope (See **Figure 2-22**). Minor widening and restriping would also occur on Admiral Callaghan Lane and Redwood Parkway. The visual changes in this area would be less dramatic than on the west side of I-80. The realigned roadway and business displacement would be noticeable, but would occur in close proximity to the existing freeway in an area with low visual quality and no scenic resources. While viewer groups would notice the visual change, their response to this change is expected to be minimal (see **Table 2.1.4-6**).

Table 2.1.4-6 Visual Quality Change from Landscape Unit E

Alternative	Vividness	Intactness	Unity	Overall Visual Quality
Existing Conditions	Low	Low	Low	Low
No-Build Alternative	No Change	No Change	No Change	No Change
Build Alternative	Negligible	Negligible	Negligible	Negligible

Source: Department, 2012k.

### Temporary Construction Impacts

During project construction, equipment would be present to widen and realign the roadways and the visual study area would appear as a large construction zone. Construction would result in the removal of residences, commercial buildings, vegetation, grading for the widened and realigned roadways, and utility relocations which would be highly visible and distinct.

<sup>17</sup> **Figure 2-23** depicts noise barrier 3 as a 10-foot-high wall. Ten feet is the minimum wall height required to achieve the noise abatement threshold established by Caltrans (noise reduction of at least 5 dBA).

Nighttime construction activities may temporarily add new sources of light and glare for residents, businesses and local motorists in Landscape Units A, D, and E. One construction staging area (CSA) would potentially be located within Landscape Unit A as shown in **Figure 2-18**. The CSA would be located on a plot of land between Griffin Drive and SR37, on the northeast side of the Fairgrounds Drive/SR37 Interchange. There would be potentially three CSAs located within Landscape Unit D as shown in **Figure 2-19**. As shown in **Figure 2-21**, there would be potentially nine CSAs located within Landscape Unit E. As construction equipment and machinery would potentially be stationed at any of the potential CSAs, temporary sources of light and glare would be added to these landscape units during the construction phase. However, temporary visual effects from the construction of the Build Alternative would be typical of any major corridor improvement project, and are not considered to be significant.

### **No-Build Alternative**

The No-Build Alternative would make no physical or operational improvements to Fairgrounds Drive or the connecting roadways and interchanges. Under the No-Build Alternative, Fairgrounds Drive would not be widened, there would be no intersection modifications, and several intersections would not be signalized. Transportation projects planned and funded within Solano County would not be in the same viewshed as the Build Alternative and would avoid potential aesthetic and visual effects. The visual quality of the study area would remain the same.

### **Avoidance, Minimization, and/or Mitigation Measures**

The Department and the FHWA mandates that a qualitative/aesthetic approach should be taken to mitigate for visual quality loss in the project area. Visual mitigation for adverse project impacts addressed in landscape unit assessments and summarized in the previous section will consist of adhering to the following design requirements in cooperation with the Caltrans District Landscape Architect. The requirements are arranged by project feature and include design options in order of effectiveness. All visual mitigation will be designed and implemented with the concurrence of the Caltrans District Landscape Architect.

Aesthetic treatments for retaining walls will help integrate roadway elements into the urban design of adjacent local streets. Aesthetic treatments will include adding texture and architectural detailing to retaining walls. The final decision regarding the types of aesthetic treatments on retaining walls will be made during the final design process, and include coordination with the local jurisdiction.

The project applicant shall implement the following mitigation measures to increase visual quality of the project site during construction and operation:

- The design of the roadways outside of the State right-of-way shall adhere to the City of Vallejo Standard Specifications.
- As directed by the Department, appropriate light and glare screening measures shall be used at the Construction Staging Areas including the use of downward cast lighting and motion-sensored lighting.

- As directed by the Department, all landscaping removed by the project shall be replaced along Fairgrounds Drive, I-80, Redwood Parkway, and Redwood Street within the project limits. Landscape plans shall be developed and approved by the Department during the final design phases. Landscape plans for areas outside of the State right-of-way shall also adhere to the City of Vallejo Standard Specifications.

### 2.1.5 CULTURAL RESOURCES

#### Regulatory Setting

“Cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, the Federal Highway Administration (FHWA), State Historic Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the Advisory Council’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA’s responsibilities under the PA have been assigned to the Department as part of the Surface Transportation Project Delivery Pilot Program (23 CFR 327) (July 1, 2007).

Historical resources are considered under the California Environmental Quality Act (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 the Department to inventory state-owned structures in its rights-of-way.

#### Affected Environment

The analysis in this section is based on the Historic Property Survey Report (HPSR) completed in January 2012 (Department, 2012e). The HPSR incorporates the results of the Archaeological Survey Report (ASR), Extended Phase I Geoarchaeological Explorations, and the Historic Resources Evaluation Report (HRER). An area of potential effect (APE) for a project encompasses all areas that fall within the physical footprint of the proposed improvements (i.e. the Build Alternative), and areas that may either be directly or indirectly affected by project-related construction activities. The APE includes the

horizontal extent of the proposed realignment of Fairgrounds Drive, the Redwood Parkway intersection, and I-80 and SR 37 freeway ramps, totaling 70.5 acres. The vertical APE varies greatly within the project APE, with excavations ranging from three to 25 feet throughout.

### **Archaeological Resources**

An archival records search and an archaeological field survey of the APE were conducted as part of the Archaeological Survey Report. No archaeological material was observed within the APE during the field survey. No known archaeological resources were identified within the APE.

One previously identified archaeological site was identified just west of the APE. This site is reported as a redeposit of flaked stone, shell fragments and a few possibly fire-affected rocks. While this site is not located within any portion of the APE, SHPO has recommended that the area be monitored during adjacent construction of the Build Alternative. Consequently, an Archaeological Monitoring and Discovery Plan that specifies the appropriate construction monitoring locations and protocols has been prepared.

The soil and geology of the APE consists primarily of sandstone and shale of the Great Valley Sequence and alluvial fan and fluvial deposits from the Holocene Epoch. Approximately 10 percent of the APE is identified as having a high potential for buried archaeological resources in two specific areas. Both areas are situated along the margins of the former Blue Rock Springs Creek. The first area is located on the east side of Fairgrounds Drive, between Fairgrounds Drive and Lake Chabot. The second area is located off of Admiral Callaghan Lane, where the proposed I-80/Redwood Parkway eastbound entrance ramp would be located. An Extended Phase I Geoarchaeological Investigation was conducted at these two areas of high sensitivity. Eleven trenches were excavated, in addition to one hand auger, and no archaeological materials were uncovered. The lack of discovery from the excavations determined that the likelihood of encountering significant archaeological material in these areas and other parts of the APE during construction is considered low.

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.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact

District 4 Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

---

## Historic Resources

A records search, review of historic and current maps, and a field surveys were conducted to determine the presence of historical architectural resources within the APE. Sixteen historic-era properties were identified and evaluated for their eligibility to the National Register of Historic Places (NRHP) within the APE located at:

- 67 Emerald Circle, Vallejo (APN 0052-311-170)
- 501-515 Fairgrounds Drive, Vallejo (APN 0052-302-080; 0052-302-090)
- 510-534 Fairgrounds Drive, Vallejo (APN 0052-320-040)
- 437 Fairgrounds Drive, Vallejo (APN 0052-303-210)
- 435 Fairgrounds Drive, Vallejo (APN 0052-303-220)
- 444 Moorland Street, Vallejo (APN 0053-232-320)
- 436 Moorland Street, Vallejo (APN 0053-232-340)
- 424 Moorland Street Vallejo (APN 0053-232-100)
- 2612 Redwood Street, Vallejo (APN 0053-232-060)
- 2618 Redwood Street, Vallejo (APN 0053-232-050)
- 2624 Redwood Street, Vallejo (APN 0053-232-040)
- 20 Howard Avenue, Vallejo (APN 0054-082-180)
- 18 Howard Avenue, Vallejo (APN 0054-082-170)
- 337 Moorland Street, Vallejo (APN 0054-082-020)
- 328 Moorland Street, Vallejo (APN 0054-083-100)
- 711 Admiral Callaghan Lane, Vallejo (APN 0081-030-150)

In a letter dated March 1, 2012, the SHPO concurred with the Department's determination that none of the architectural resources listed above were eligible to the NRHP and that a finding of "No Historic Properties Affected" was appropriate for the Build Alternative, due to the absence of any identified historic properties within the APE. Please see **Appendix D** for SHPO's letter of concurrence.

## Environmental Consequences

### Build Alternative

Based on the investigations conducted, there are no archaeological or historical resources within the Build Alternative's APE. The Historic Property Survey Report determined a CEQA finding of no impact to historic properties and a Section 106 determination of no historic properties affected was filed with the California SHPO. The Build Alternative would therefore not result in the use (direct or indirect) of a historic property qualifying for protection under Section 4(f).

Although no known archaeological resources exist within the APE, construction activities could potentially unearth previously unidentified resources. Provisions to address these circumstances are included in the Avoidance, Minimization, and/or Mitigation Measures section below. In addition, an Archaeological Monitoring and Discovery Plan has been

prepared that specifies the appropriate construction monitoring locations and protocols recommended for an area near the known redeposit of archaeological materials outside of the APE.

#### *Native American Consultation*

In February 2011, a Sacred Lands File search was conducted by the Native American Heritage Commission (NAHC) to determine if there were known cultural sites within or near the APE. Following the records search, the NAHC stated that the file search showed no recorded resources within the APE.

The NAHC also provided a list of interested Native American groups and individuals in the study area. Letters requesting input from interested parties were sent to the Native American groups and individuals in April 2011. Mr. Reno Keoni Franklin, Director of Cultural Resources and Tribal Historic Preservation Officer for the Yocha Dehe Wintun Nation, requested more specific information about the project, including a more detailed project description, which was provided. Mr. Marshall McKay, Yocha Dehe Wintun Tribal Chairman, stated that the Yocha Dehe have a cultural interest in the proposed project area and stated their intention to initiate consultation with the Department and STA. Mr. McKay requested a project timeline and the latest cultural study. The Department provided Mr. McKay with the ASR. In response to the request for formal consultation, the project was discussed at the quarterly meeting of the Department's Office of Cultural Resource Studies and the Yocha Dehe Wintun Nation. Discussion of the project focused on the ASR, post mile 317, and the potential for archaeological testing for buried resources in the APE.

Mr. Kesner Flores of the Cortina Band of Indians responded, stating that they would like to monitor construction activities at the location of P-48-000152/CA-SOL-315, noting that there is a potential that more material could be encountered. Mr. Flores also requested that Patwin Wintun Cultural Management Response Plan be followed if unexpected cultural resources are encountered, and if cultural resources are discovered during project activities that he be notified. The Department responded with a letter that discussed the procedures for monitoring, and how the Department ensures the dignified treatment and disposition of Native American Human remains and associated grave artifacts.

Mr. Dave Jones of the Wintun Environmental Protection Agency stated that the project area is on the south edge of their ancestral territory, and that they have little information of the area. He asked that if cultural materials are encountered during the project, that they be notified.

#### **No-Build Alternative**

The No-Build Alternative would make no physical or operational improvements to Fairgrounds Drive, Redwood Parkway, or the connecting freeways. Implementation of the currently planned and funded transportation projects outside the project limits but within Solano County could result in similar effects to archaeological and historic resources as the Build Alternative, since they would occur in the same region. These projects would be required to comply with local, State and Federal law protecting cultural resources as well as the Department's standard design and construction guidelines regarding cultural resources.

## Avoidance, Minimization, and/or Mitigation Measures

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.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact District 4 Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

In addition, an Archaeological Monitoring and Discovery Plan has been prepared that specifies the appropriate construction monitoring locations and protocols recommended for an area near the known redeposit of archaeological materials outside of the APE. During the construction of the Build Alternative, a professional archaeologist will be assigned to monitor construction work in the vicinity of the known archaeological site for the purpose of identifying and evaluating any newly discovered materials. Implementation of the provisions outlined in the Archaeological Monitoring and Discovery Plan would ensure that no adverse effects to the nearby archaeological materials occur as a result of the Build Alternative.