

## 2.1 HUMAN ENVIRONMENT

### 2.1.1 PARKS AND RECREATIONAL FACILITIES

#### AFFECTED ENVIRONMENT

Information in this section is based on the Community Impact Assessment (CIA) (Caltrans, 2015c) approved in July 2015.

#### Public Parks

Concord has an extensive park system offering a diverse range of outdoor facilities (i.e., playgrounds, ball fields, group picnic area, swimming pools, tennis courts, and scenic hiking trails) to meet the needs of the communities. **Table 2.1-1** lists the three public parks within 0.5 miles of the project limits: Ellis Lake Park, Meadow Homes Park, and Todos Santos Plaza. These three parks in closest proximity to the project limits are all located within Concord. **Figure 2.1-1** illustrates the location of the public parks closest to the project limits.

**Table 2.1-1 Public Parks in Close Proximity to the Project Limits**

Name of Park	Address	Size	Distance from Project Limits
Ellis Lake Park	Cowell Road and Galindo Street	9.6 acres	0.5 mile, east
Meadow Homes Park	2199 Sunshine Drive	12.0 acres	0.5 mile, east
Todos Santos Plaza	Willow Pass Road and Grant Street	2.5 acres	0.5 mile, east

Sources:

1. City of Concord General Plan, 2012. Parks and Recreation Element
2. City of Concord Parks & Recreation, 2014. *List of Concord Parks*. Available at <http://www.cityofconcord.org/recreation/parks/parks.htm>; last accessed: June 17, 2014.
3. Google Earth Pro, 2014

#### Trails and Bikeways

Bicycle facilities fall into the following categories:

- Bike paths (Class I) – Paved trails that are separated from roadways
- Bike lanes (Class II) – Lanes on roadways designated for use by bicycles through striping, pavement legends, and signs
- Bike routes (Class III) – Designated roadways for bicycle use by signs only; may or may not include additional pavement width for cyclists

The existing trail system (Class I, off-street bikeways or multi-use paths) within Concord is mostly regional trails that were constructed by the East Bay Regional Park District. The system consists of the Iron Horse Trail, the Monument Corridor Trail (formerly planned as the Mayette Hanson Connector), the Contra Costa Canal Trail, the California Riding and Hiking Trail, and the Delta-De

Anza Trail. Iron Horse Trail and Monument Corridor Trail are the only facilities within 0.5-mile of the project limits. The Iron Horse Trail provides a continuous path along the west side of Walnut Creek, approximately 0.3-miles from the project limits. Monument Corridor Trail is currently under phased construction and, when completed, will run along an abandoned railroad line on the east side of SR 242 from Monument Boulevard to Willow Pass Road. The trail segment from Monument Boulevard to the Market Street (just east of Meadow Lane) was recently constructed and is open to the public. Concord is now in the final design phase for the extension of the trail along the abandoned Market Street right-of-way and under SR 242 through the existing pedestrian undercrossing tunnel. Once on the west side of the freeway, the planned trail extension will change to sidewalks and shared bike routes along Franquette Avenue, at which point it would join the Iron Horse Trail at Willow Pass Road. The SR 242 pedestrian undercrossing is frequently used by the patrons of the constructed segment of the Monument Corridor Trail and is a publically-owned facility by Caltrans.

In 2003, Concord developed a comprehensive Trails Master Plan to provide the framework for future planning of trails and bikeways to serve as both a recreational and an alternate transportation mode within Concord. The 2003 Trails Master Plan focuses on a trails and bikeway network that will provide origin and destination connections in and around Concord. While the Trails Master Plan primarily focuses on trails, several on-street bike routes are presented that would cross through the study area. Such streets are primarily residential streets and are referred to as Class IIIA.<sup>1</sup> Since the adoption of the 2003 Trails Master Plan, Concord has implemented many of the bike routes that pass through the study area. In addition, Concord has constructed segments of striped (Class II) bike lanes on several major arterial/collector roadways. The existing and planned bike routes in the study area are shown in **Figure 2.1-1** and listed in **Table 2.1-2**.

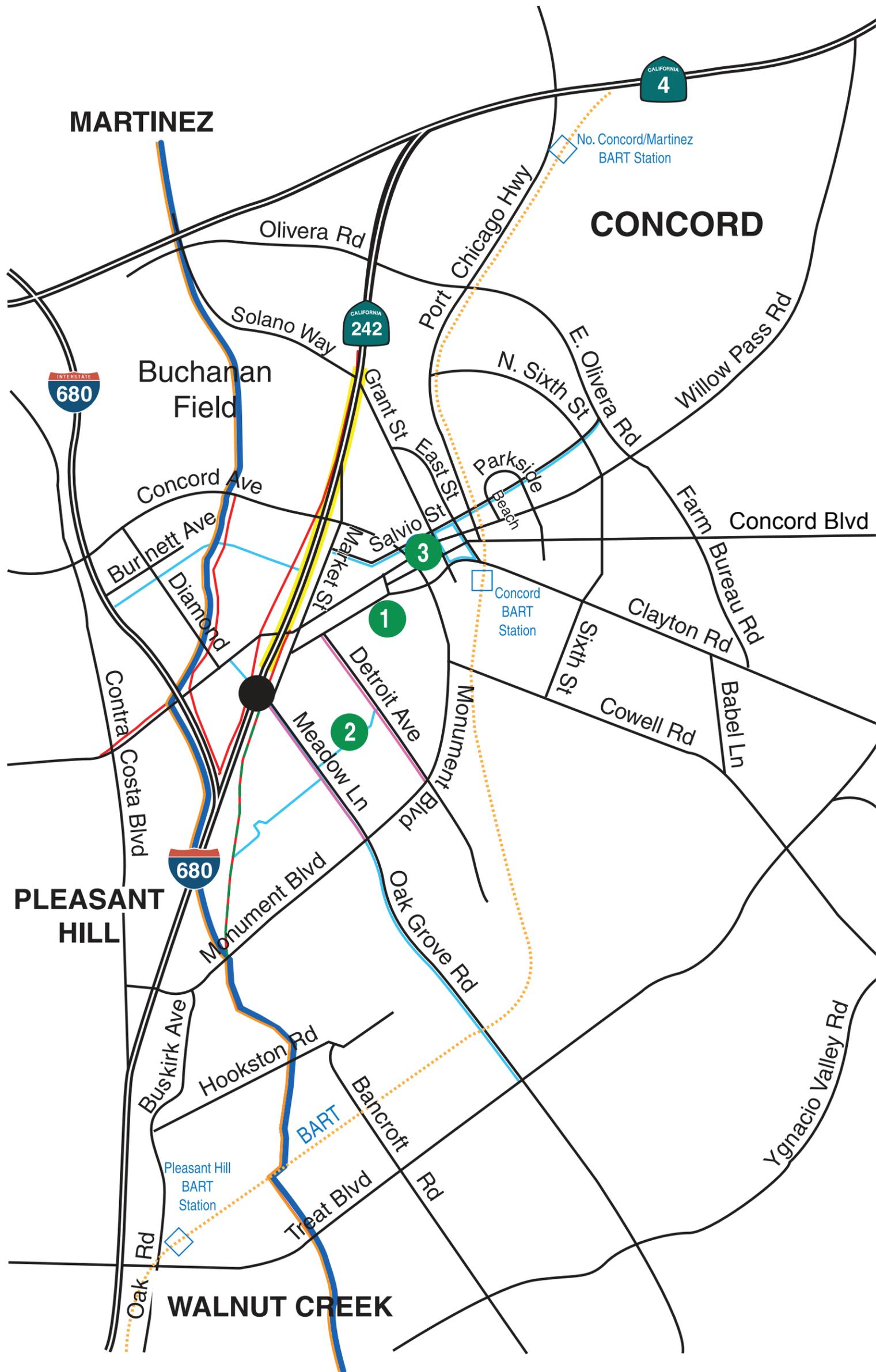
Concord has recently initiated the preparation of a *Bicycle, Pedestrian and Safe Routes to Transit Plan* that will serve as a blueprint to help develop a transportation network. As part of the plan, Concord will examine safety issues such as bicycle injuries, pedestrian injuries, and collisions, in order to identify locations in need of safety improvements. This information will be used to identify future improvements to Concord's non-motorized transportation infrastructure and position Concord for necessary grant funding. At this time, no additional information is available regarding updates to the planned bike routes described in this section.

## ENVIRONMENTAL CONSEQUENCES

The Build Alternatives are located in the same area with respect to public parks and recreational facilities; therefore, project effects discussed in this section apply to both Build Alternatives. There are no effects specific to one of the individual Build Alternatives.

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<sup>1</sup> Class IIIA trails are bicycle routes on residential streets.



**Legend**

- |                            |  |                       |
|----------------------------|--|-----------------------|
| Project Limits             | Proposed Class I trails - Collector        | Walnut Creek          |
| Park                       | Newly Constructed Mayette Hanson Connector | 1. Ellis Lake Park    |
| Pedestrian Undercrossing   | Iron Horse Trail                           | 2. Meadow Homes Park  |
| Existing bike routes/lanes | BART route                                 | 3. Todos Santos Plaza |
| Planned bike routes/lanes  |  |                       |



Public Parks and Bikeways

Figure 2.1-1

Source: City of Concord Trails Master Plan (2003); City of Concord Parks and Recreation, List of Concord Parks (2014); City of Pleasant Hill Parks and Recreation, Parks and Facilities (2013).

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**Table 2.1-2 Existing and Planned Bike Routes/Lanes in the Study Area**

<b>Bikeway</b>	<b>Status</b>
Franquette Avenue/Waterworld Parkway	Bike route planned on Franquette Avenue between SR 242 pedestrian undercrossing to Willow Pass Road
Sunshine/Tilson/Rae Anne/Victory	Bike routes planned in Cambridge Park neighborhood
Salvio Street	Bike lanes planned on Salvio Street between Broadway Street and Galindo Street Bike route planned on Salvio Street between Galindo Street and Grant Street/East Street
Galaxy Way	Bike route planned
Meadow Lane	Bike lanes constructed on Meadow Lane between Johnson Drive and Monument Boulevard Bike route established on Meadow Lane between Market Street and John Drive
Detroit Avenue	Bike lanes constructed on Detroit Avenue between Monument Boulevard and Clayton Road
Oak Grove Road	Bike route planned on Oak Grove Road between Monument Boulevard and Whitman Drive
Sunshine Drive	Bike route constructed on Sunshine Drive between Linden Drive and Detroit Avenue
Linden Drive	Bike route constructed on Linden Drive between Victory Lane and Sunshine Drive
Walters Way	Bike route constructed on Walter's Way between Detroit Avenue and Galindo Street
Meadow Lane/Market Street	Bike shared-use path extension planned from Meadow Lane/Market Street to Franquette Avenue (through an existing tunnel underneath Hwy 242)
Grant Street	Bike route planned on Grant Street from Willow Pass Road to Salvio Street Bike lanes planned on Grant Street between Willow Pass Road and Oak Street
Concord Blvd	Bike lanes planned on Concord Blvd from Grant Street to Sutter Street
Clayton Road	Bike lanes planned on Clayton Road from Sutter Street to Grant Street

Source: City of Concord Trails Master Plan, 2003; Kuzbari, Ray, Transportation Manager Community & Economic Development Department, City of Concord. Email correspondence January 10, 2016

**Build Alternatives 1 and 2**

Property of the nearby parks and recreational facilities identified in **Table 2.1-2** and **Figure 2.1-1** would not be acquired as part of the proposed Build Alternatives, thereby avoiding direct effects. Since the project would not alter the location of SR 242, the distance between the parks and recreational facilities listed in **Table 2.1-1** and the freeway corridor would not change when

compared to existing conditions; access to these facilities would not be hindered as result of construction of the Build Alternatives. Potential increases in ambient noise levels at the parks closest to SR 242 (Ellis Lake Park, Meadow Homes Park, and Todos Santos Plaza) were evaluated for the Build Alternatives and found to be zero at these locations (see **Section 2.2.7, Noise**).

### *Trails and Bikeways*

The Build Alternatives would be developed to provide safer mobility conditions for pedestrians, where feasible. The following improvements are proposed:

- construct a new pedestrian bridge over Pine Creek on the south side of eastbound Willow Pass Road in order to provide opportunity for unilateral and direct pedestrian access
- upgrade existing pedestrian facilities to incorporate appropriate ADA elements such as directional curb ramps, pedestrian refuge islands, and audible pedestrian signals
- incorporate pavement delineation with enhanced crosswalk markings
- install pedestrian countdown signals
- realign ramp termini square to the cross street, where feasible
- add pedestrian-scale lighting upgrades at the SR 242 pedestrian undercrossing and new pedestrian bridge over Pine Creek
- widen sidewalks to 10 feet minimum

Where feasible, sidewalks would be widened to 10 feet. For Build Alternative 1, sidewalks would be widened on Franquette Avenue (between the SR 242 pedestrian undercrossing and the new on-ramp), on Market Street (from the SR 242 pedestrian undercrossing to Willow Pass Road), and on the easterly side of Willow Pass Road (from Market Street to the EBMUD aqueduct). For Build Alternative 2, sidewalks would be widened on Market Street (from the SR 242 pedestrian undercrossing to Willow Pass Road), and on the easterly side of Willow Pass Road (from Market Street to the SB SR 242 on-ramp). Existing pedestrian facilities would be upgraded to incorporate directional curb ramps, pedestrian refuge islands, and audible pedestrian signals, and refuge islands would be added at intersections within the study limits in compliance with ADA requirements. Both Build Alternatives propose four pedestrian refuge islands.

Access to the Iron Horse Trail and the Monument Corridor Trail would be maintained at all times during the construction of the project. None of the proposed improvements would require the acquisition of the trail alignments and would not preclude the completion of the planned Monument Corridor Trail extension to Franquette Avenue and Willow Pass Road.

The SR 242 pedestrian undercrossing would need to be lengthened by approximately 40 feet on either side of the freeway in order to accommodate the proposed northbound and southbound SR 242 ramp modifications. Both the pavement and the undercrossing concrete box structure would be lengthened in order to construct the ramps. Closures required for the construction of the

pedestrian undercrossing would largely be limited to nighttime only, and the Contractor would be required to keep the undercrossing open during the day. The only exception to this requirement would be when the Contractor is installing or removing the falsework/ framework, which could require closures up to one week at a time. When the pedestrian undercrossing is closed for construction, a temporary detour plan would be provided with appropriate signage to direct users toward alternative access routes across SR 242 and to the Monument Corridor Trail. Users traveling from Franquette Avenue on the west side of SR 242 would be detoured approximately 3,733 feet north along the Willow Pass Road undercrossing, and then south along Market Street, to meet the Monument Corridor Trail at Meadow Lane. The project also includes lighting upgrades within the pedestrian undercrossing to improve the visibility and safety of the facility. The pedestrian undercrossing would continue to be a publicly-owned facility after project construction. The temporary closures of the Monument Corridor Trail would be less than the duration of construction for the project.

A Transportation Management Plan (TMP) would be developed as part of the standard contract specifications of the project to address impacts to motor vehicle, bicycle, and pedestrian access during construction. The TMP would include briefing local public officials and developing a public information program to notify the public of upcoming closures and detours. The public information program would include outreach to ridesharing agencies, transit operators, and neighborhood and special interest groups. As part of the TMP, detour signage would be posted at the Monument Corridor Trail and Monument Corridor Trail access points, where appropriate.

#### *Resources Evaluated Relative to the Requirements of Section 4(f)*

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.” Therefore, Section 4(f) specifies requirements for when Caltrans can approve a project that would require a “use” of a publicly-owned public park, recreation area, or wildlife and waterfowl refuge, or land of an historic site. **Appendix B** discusses Section 4(f) in more detail and the types of “uses” that trigger particular statutory requirements. Use occurs when 1) the property is acquired for a transportation project, 2) there is an occupancy of land that is adverse to the preservationist purpose of Section 4(f), or 3) there is (are) proximity impact(s) that substantially impair(s) the purpose of the land (this is called constructive use). An example of constructive use would be excessive noise near an amphitheater.

#### Public Parks

All public parks listed in **Table 2.1-1** are considered Section 4(f) resources. No property of parks would be acquired as part of the proposed Build Alternatives, thereby avoiding any permanent use. No temporary construction work would occur on park properties. Since the proposed project would not alter the location of SR 242, the distance between the parks and the freeway corridor will not change when compared to existing conditions. As such, construction of the Build Alternatives

will not disturb wildlife, vegetation, facilities, functions, or accessibility of the parks. Additionally, due to the relative distance to the project limits, the construction of the Build Alternatives will not result in any aesthetic, air quality, noise, or water quality impacts to the nearby parks. The project would therefore not result in any permanent, temporary, or constructive use of the parks.

### Recreational Trails

Iron Horse Trail and Monument Corridor Trail, including the SR 242 pedestrian undercrossing, are publically-owned recreational facilities that qualify as Section 4(f) resources. The Build Alternatives would not “use” either of these trails. The Iron Horse Trail would not be impacted by the project and, as such, would not be a use of the Section 4(f) resource. The impacts to the Monument Corridor Trail meet the temporary occupancy requirements under Section 4(f); therefore, do not constitute a use of the Section 4(f) resource.

A temporary use of a Section 4(f) resource would occur if there was a temporary occupancy of property that is considered adverse in terms of the preservationist purposes of the Section 4(f) statute. A temporary occupancy of property does not constitute a “use” of a Section 4(f) resource when the following conditions are satisfied:

- Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land;
- Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
- There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
- The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project; and
- There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.

The SR 242 pedestrian undercrossing closures would primarily be limited to nighttime; however, the structure could be closed for up to one week at a time. Accordingly, access to the Monument Corridor Trail, on either side of SR 242 from the pedestrian undercrossing would remain open during construction, except for the installation and removal of falsework/formwork. However, when the pedestrian undercrossing is closed, a temporary detour plan would be provided with appropriate signage to direct users toward alternative access routes across SR 242 and to the Monument Corridor Trail so that access would be maintained at all times. A TMP would be developed as part of the standard contract specifications of the project to address impacts to motor vehicle, bicycle, and pedestrian access during construction.

None of the proposed improvements would require the acquisition of the trail alignments, and would not preclude the completion of the planned Monument Corridor Trail extension to Franquette Avenue and Willow Pass Road.

The SR 242 pedestrian undercrossing would be lengthened by approximately 40 feet on either side of the freeway in order to accommodate the proposed Clayton Road northbound and southbound SR 242 ramps. The project also includes adding lighting in the underpass to improve the safety and operation of the facility. Overall, such changes would be minimal and minor. None of the proposed construction activities would substantially impair the purpose or the functionality of the facility. No substantial long-term noise, aesthetic, water quality or air quality effects to the trails would occur. Additionally, construction of the project would not involve the temporary use of Monument Corridor trail, and would not result in any effects to the vegetation or wildlife on the recreational trails. The pedestrian undercrossing would continue to be a publically-owned and operated by Caltrans after project construction. As documented in **Appendix B**, Caltrans concurs that the project would not result in a temporary use of this Section 4(f) resource, and would qualify as a Temporary Occupancy as set forth in 23 CFR 774.13(d).

### **No-Build Alternative**

Under the No-Build Alternative, no changes would be made to SR 242 and local roadways within the overall project limits. The No-Build Alternative would have no effect on public parks or recreational facilities.

### **AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES**

**Measure COM-1:** A Transportation Management Plan (TMP) will be developed during the final design phase and incorporated into the construction of the project to minimize impacts to motor vehicles, emergency vehicles, bicycles, and pedestrians during construction. The major objectives of the TMP are to maintain efficient and safe movement of vehicles, emergency vehicles, bicyclists, and pedestrians through a construction zone, and to provide public awareness of potential impacts on SR 242 and adjacent local streets. The TMP may include briefing local public officials and developing a public information program to notify the public regarding upcoming closures and detours (i.e., construction signs, portable changeable message signs, press releases and other documents). The public information program would include outreach to adjacent businesses, ridesharing agencies; transit operators; and neighborhood and special interest groups.

As part of the TMP, detour signage would be posted at the Iron Horse Trail and Monument Corridor Trail access points (including the SR 242 pedestrian undercrossing) to direct pedestrians and bicyclists to alternative routes during temporary closures of the pedestrian undercrossing.

### **CUMULATIVE ANALYSIS**

The Build Alternatives would not result in an impact to parks, recreational resources, or Section 4(f) resources. The project would therefore not contribute to any potential cumulative effects to these resources.

## 2.1.2 COMMUNITY IMPACTS

### RELOCATIONS AND REAL PROPERTY ACQUISITION

#### Regulatory Setting

Caltrans' Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the 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 D** for a summary of the RAP (as amended per MAP-21).

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 United States Code [USC] 2000d, et seq.). Please see **Appendix C** for a copy of Caltrans' Title VI Policy Statement.

#### Affected Environment

Information in this section is based on the CIA (Caltrans, 2015c) approved in July 2015. The CIA considered and analyzed impacts to the community within a half-mile radius of the project limits; the relocations and acquisition analysis mostly considered potential impacts of the project to the community located adjacent to the project footprint along Willow Pass Road, Clayton Road, and Market Street (see **Appendix G**).

The majority of the study area is developed with commercial land uses, particularly east and west of SR 242, between Clayton Road and Concord Avenue. Land uses immediately adjacent and to the east of SR 242 in this area include car dealerships, grocery stores, and shopping centers. Some residences are located south of Clayton Road to the east of SR 242. Land uses immediately adjacent and to the west of SR 242 are mostly offices, industrial businesses, and associated parking lots. Concord's local downtown area is located east of SR 242 and south of Mt. Diablo High School, but not immediately adjacent to SR 242. The downtown area includes restaurants, movie theaters, stores, and the Todos Santos Plaza that attracts members of the local community.

#### Environmental Consequences

Implementation of either of the Build Alternatives would require various easements and permanent fee acquisitions, as summarized in **Tables 2.1-3** and **2.1-4** and correspond to maps in **Appendix G**. Both of the Build Alternatives have ramp structures that would require "roadway easements" from East Bay Municipal Utility District (EBMUD) aqueduct system alignment. EBMUD would continue to own the land, but Caltrans would have an easement over the property. Concord's right-of-way would be incorporated into the SR 242 State right-of-way pursuant to Section 83 of the California Streets and Highways Code. Proposed "roadway easements" and transfer of right-of-way through "Section 83" are shown in **Tables 2.1-3** and **2.1-4**. Roadway easements and transfer of right-of-way through Section 83 are considered permanent, but would be located immediately

adjacent to roadway rights-of-way and are not currently occupied by residential, commercial, or other structures. A fee acquisition purchase transfers ownership of part or all of a property, including the underlying title, to another party.

Temporary Construction Easements (TCEs) would also be necessary to accommodate construction activities, and their duration would depend on the nature, size, and duration of related construction activities. Affected areas within the TCEs would be restored to their original use after the project is constructed. **Appendix G** includes maps that cross-reference the locations of the easements and proposed acquisitions from **Tables 2.1-3** and **2.1-4**.

### *Build Alternative 1*

#### Easements

Build Alternative 1 would require TCEs that would affect several parcels. Build Alternative 1 would require roadway easements where they encroach onto EBMUD property. EBMUD would continue to own the land, but Caltrans would have an easement for portions of the State highway within EBMUD property. Such easement areas would be located immediately adjacent to State right-of-way and are not currently occupied by residential, commercial, or other structures. Portions of Concord's right-of-way would be transferred to State right-of-way under Build Alternative 1 at the SR 242 ramps/Clayton Road/Market Street intersection.

#### Acquisitions

Build Alternative 1 would require the permanent acquisition of a portion of a parking lot located east of Franquette Avenue and south of Willow Pass Road (APN 126-380-007 at 1410 Danzig Plaza). The parking lot serves an office building, which is leased by a nonprofit organization called "Stand!" The proposed project would not affect the building structure, access to the building, and would not displace the business. Approximately four parking spaces would be removed under Build Alternative 1. Replacement parking spaces would be provided by restriping the remaining parking areas to the rear of this structure.

The acquisition and displacement of several businesses at 1440 through 1476 Franquette Avenue (APN 126-380-003) would be required under Build Alternative 1. The building at 1440 Franquette Avenue currently houses "NCE Home Décor Kitchen and Bath" and "All Glass", while 1476 Franquette Avenue is currently vacant. However, all three businesses are under lease from a single property owner.

Build Alternative 1 would widen the north side of Clayton Road, between Pine Street and Market Street. Acquisitions from this property may result in the displacement of the commercial tenant at 1585 Clayton Road (APN 126-291-016). This property is currently occupied by a barber shop, beauty salon ("First Class Barbershop" and "Da Beauty Salon & Spa"), and a vacant building.

**Table 2.1-3 Proposed Right-of-Way Acquisitions - Build Alternative 1**

No.	Assessor Parcel Number (APN)	Property Owner	Permanent Fee Acquisition <sup>2</sup>		Temporary Construction Easements		Section 83 and Roadway Easements <sup>3</sup>		Displacement
			SQ.FT.	ACRE	SQ.FT.	ACRE	SQ.FT.	ACRE	Yes/No
1	127-190-005	East Bay Municipal Utility District			12,572	0.29	24,440	0.56	No
2	126-350-008	East Bay Municipal Utility District			1,242	0.03	24,918	0.57	No
3	126-350-007	East Bay Municipal Utility District					53,923	1.24	No
4	126-380-007	Private Owner	5,764	0.13					No
5	126-380-003	Private Owner	57,322	1.32					Yes (commercial)
6	126-380-002	Private Owner	2,237	0.05	4,876	0.11			No
7	126-380-001	Private Owner	2,825	0.06	2,308	0.05			No
8	126-300-048	City of Concord					16,302	0.37	No
9	126-292-010	East Bay Municipal Utility District					7,232	0.17	No
10	126-291-010	City of Concord					11,088	0.25	No
11	126-291-016	Private Owner	17,015	0.39					Yes (commercial)
12	126-030-036	East Bay Municipal Utility District			334	0.01			No
<b>Total Alternative 1</b>			<b>85,163</b>	<b>1.96</b>	<b>21,333</b>	<b>0.49</b>	<b>137,903</b>	<b>3.17</b>	<b>2 parcels</b>

Note: SQ.FT= square feet; EBMUD = East Bay Municipal Utility District.

<sup>1</sup>Number references correspond to maps of proposed easements and acquisitions (Appendix G)

<sup>2</sup>A fee acquisition purchase transfers ownership of part or all of a property, including the underlying title, to another party.

<sup>3</sup>The column "Section 83 and Roadway Easements" include areas that would require a new roadway easement or a transfer of right-of-way between City of Concord and State under "Section 83" of the California Streets and Highway Code

**Table 2.1-4 Proposed Right-of-Way Acquisitions – Build Alternative 2**

No. <sup>1</sup>	Assessor Parcel Number (APN)	Property Owner	Fee Acquisition <sup>2</sup>		Temporary Construction Easements		Section 83 and Roadway Easement <sup>3</sup>		Displacement
			SQ.FT.	ACRE	SQ.FT.	ACRE	SQ.FT.	ACRE	Yes/No
1	127-190-005	East Bay Municipal Utility District			5,259	0.12	9,593	0.22	No
2	126-350-008	East Bay Municipal Utility District			3,604	0.08	821	0.02	No
3	126-350-007	East Bay Municipal Utility District			6,865	0.16	2,015	0.05	No
4	126-300-048	City of Concord					16,302	0.37	No
5	126-292-010	East Bay Municipal Utility District					7,232	0.17	No
6	126-291-010	City of Concord					10,563	0.24	No
7	126-350-010	East Bay Municipal Utility District			4,471	0.10	5,964	0.14	No
8	126-350-009	East Bay Municipal Utility District			8,361	0.19	14,369	0.33	No
9	126-030-036	East Bay Municipal Utility District	16,592	0.38	7,384	0.17			No
10	126-281-047	Contra Costa County Harvest Church	6,246	0.14					No
<b>Total Alternative 2</b>			<b>22,838</b>	<b>0.52</b>	<b>35,944</b>	<b>0.83</b>	<b>66,860</b>	<b>1.53</b>	<b>0 parcels</b>

Note: SQ.FT. = square feet; EBMUD = East Bay Municipal Utility District.

<sup>1</sup>Number references correspond to maps of proposed easements and acquisitions (Appendix G)

<sup>2</sup>A fee acquisition purchase transfers ownership of part or all of a property, including the underlying title, to another party.

<sup>3</sup> The column “Section 83 and Roadway Easements” include areas that would require a new roadway easement or a transfer of right-of-way between City of Concord and State under “Section 83” of the California Streets and Highway Code

## *Build Alternative 2*

### Easements

Build Alternative 2 would require TCEs and other easements mostly associated with the new southbound off-ramp onto Willow Pass Road. Similar to Build Alternative 1, Build Alternative 2 would have ramp improvements that would require roadway easements where they encroach onto EBMUD property. EBMUD would continue to own the land, but Caltrans would have an easement for portions of the State highway within EBMUD property.

### Acquisitions

Under Build Alternative 2, construction of the new northbound on-ramp at Willow Pass Road would require acquisition of a portion of an auto dealership sales lot. Additionally, Build Alternative 2 would require acquisition of a portion of the property located in the northeast corner of the Willow Pass Road/Market Street intersection (1601 Willow Pass Road) associated with the Chuck E. Cheese restaurant. The acquisition would affect a landscaped area but would not alter the functionality nor require displacement of the business. Additionally, there would be a temporary loss of six parking spaces in order to install the new sidewalk along Willow Pass Road. Although implementation of Build Alternative 2 may require temporary closure of six parking spaces to the rear of the Chuck E. Cheese restaurant, access to the business and remaining parking areas would not be affected. This business is located within a large shopping center with an abundance of available parking spaces, thus temporarily occupied parking spaces could be accommodated within the shopping center. Parking would be restored after the construction of the sidewalk.

### *Relocation Summary*

**Table 2.1-5** summarizes the impacted parcels as a result of the proposed project. Under Build Alternative 1, four existing businesses would be potentially displaced and require relocation assistance: 1) NCE Home Décor Kitchen and Bath, 2) All Glass, 3) Da Beauty Salon & Spa, and 4) First Class Barbershop. NCE Home Décor Kitchen and Bath provides professional home improvement design services to homeowners and other design professionals, and also provides a showroom for kitchen and bathroom products. The characteristics of All Glass include the retail sale of glass products, on-site replacement of automobile glass, and off-site glass replacement for residential and commercial users. The All Glass facility located at 1440A Franquette Avenue is an extension of the businesses' main office space located in Dublin, California, where the businesses' primary client base is located.<sup>2</sup> First Class Barbershop and Da Beauty Salon & Spa provide hair styling services for the local community.

CCTA and Caltrans would work closely with any displaced businesses, per Federal and State relocation laws and policies, to provide relocation assistance. Relocation efforts may include providing current lists of properties offered for sale or rent, suitable for a particular business's

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<sup>2</sup> All Global. [http://allglass1.com/?page\\_id=32](http://allglass1.com/?page_id=32). Accessed October 15, 2014

specific relocation needs. The types of compensatory payments available may include: searching and moving expenses, and possibly business reestablishment expenses; or a fixed in lieu payment instead of any moving, searching, and business reestablishment expenses.

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. Caltrans CIA guidance states, "The physical removal of a city's major employer could well be a significant impact under CEQA, and it could result in multiplier effects to related businesses. The loss of a small business, however, is likely to have a lesser effect on employment in the community because of the fewer numbers of households affected." The businesses displaced by the project would be considered small businesses. None of the businesses that would be potentially relocated require specialized equipment or use hazardous substances that would make it difficult to relocate due to their particular needs and the inability to find a location where such business types are allowed.

The Concord Planning Department indicated that other commercial spaces are available to lease within the city limits that are comparable in size to the affected businesses. In general, Concord and the market area provide ample opportunity for personal service/retail, automotive service, and showroom type uses to locate and grow. In particular, Concord offers more than 1.8 million square feet of retail space, with some limitations, where salon/personal service type uses could locate. Showroom uses that display and sell cabinetry, fixtures, flooring and other custom made products, with some limitations, could be permitted in service commercial, business park, and industrial zoning districts in Concord. There is currently more than 6 million square feet of industrial space located in Concord. Automotive service (depending on the level and intensity of the service being provided) could be a permitted use in Service Commercial areas with some additional opportunities in more traditional retail locations.<sup>3</sup>

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. Relocation efforts may include current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs.

#### *No-Build Alternative*

Under the No-Build Alternative, no changes would be made to SR 242 and local roadways within the overall project limits. No relocations or real property acquisitions would occur.

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

Caltrans would implement a TMP with **Measure COM-1**, as previously described in **Section 2.1.1, Parks and Recreational Facilities**. The following measure only applies to Build Alternative 1, which would displace up to four businesses.

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<sup>3</sup> Montagh, White. Economic Development & Housing Manager. City of Concord, CA. Email communication – May 20, 2015

**Table 2.1-5 Summary of Impacted Parcels by Build Alternative**

Build Alternative	Temporary Construction Easement	Section 83 and Roadway Easements <sup>1</sup>	Permanent Fee Acquisition <sup>2</sup>	Displacements
1	5 parcels	6 parcels	1) APN 126-380-007; "Stand!" Office Building at 1410 Danzig Plaza	1) APN 126-380-003; "NCE Home Décor Kitchen and Bath" 1440 Franquette Avenue, All Glass" at 1440A Franquette Avenue and vacant building
			2) APN 126-380-002; portion of sidewalk on northbound side of Franquette Avenue	2) APN 126-291-016; "First Class Barbershop" and "Da Beauty Salon & Spa" at 1585 Clayton Road and vacant building
			3) APN 126-380-001; portion of sidewalk on northbound side of Franquette Avenue	
			4) APN 126-380-003; 1440 through 1476 Franquette Avenue	
			5) APN126-291-016; 1585 Clayton Road	
2	6 parcels	8 parcels	1) APN 126-030-036; Auto Dealership	0 Displacements
			2) APN 126-281-047; "Chuck E. Cheese's" at 1601 Willow Pass Road	

Note: TCE – Temporary Construction Easement; ROW – Right-of-Way. This table identifies the number of parcels that would have easements, acquisitions, etc. An identified parcel may experience multiple easements or acquisitions, etc.

<sup>1</sup> The column "Section 83 and Roadway Easements" include areas that would require a new roadway easement or a transfer of right-of-way between City of Concord and State under "Section 83" of the California Streets and Highway Code

<sup>2</sup>A fee acquisition purchase transfers ownership of part or all of a property, including the underlying title, to another party.

**Measure COM-2:** As part of the final design phase, Caltrans will comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act to any commercial businesses displaced as a result of the project. Relocation efforts may include provision of current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs.

The types of payments available may include: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses.

## 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 William J. Clinton on February 11, 1994. This EO 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 2015, this was \$24,250 for a family of four.<sup>4</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 demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in **Appendix C** of this document.

### **Affected Environment**

Information in this section is based on the CIA (Caltrans, 2015c) approved in July 2015. The environmental justice analysis used available statistical and demographic data describing the study area in comparison to Concord, Pleasanton, and Contra Costa County. The study area is defined by the U.S. census block group boundaries that are within a 0.5-mile radius of the project footprint. The study area for the project encompasses 24 block groups and 6 census tracts, as shown in **Table 2.1-6**. **Figure 2.1-2** shows the boundaries of each block group within the vicinity of the study area.

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
- A low-income and/or minority population that is more than 10 percentage points higher than the City or County average

#### *Demographic Profile*

The demographic profile describes the races, ethnicities, and populations existing within the study area. Characteristics of the community, including population, housing, age, ethnicity, employment, and income were primarily derived from the 2010 U.S. Census, which does not publish house-by-house data, but instead compiles the information into larger geographic units. The U.S. Census Bureau collects race and Hispanic origin information following the guidance of the U.S. Office of Management and Budget's (OMB) 1997 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Although some 2010 U.S. Census data was available, data for poverty on smaller geographic levels including census tracts and block groups were not available at the time this environmental document was prepared. As such, the 2000 U.S. Census data was the best available data and therefore used for the poverty analysis. The 2006 – 2010 American Community Survey (ACS), which provides data based on a portion of the U.S. population, is also used to analyze

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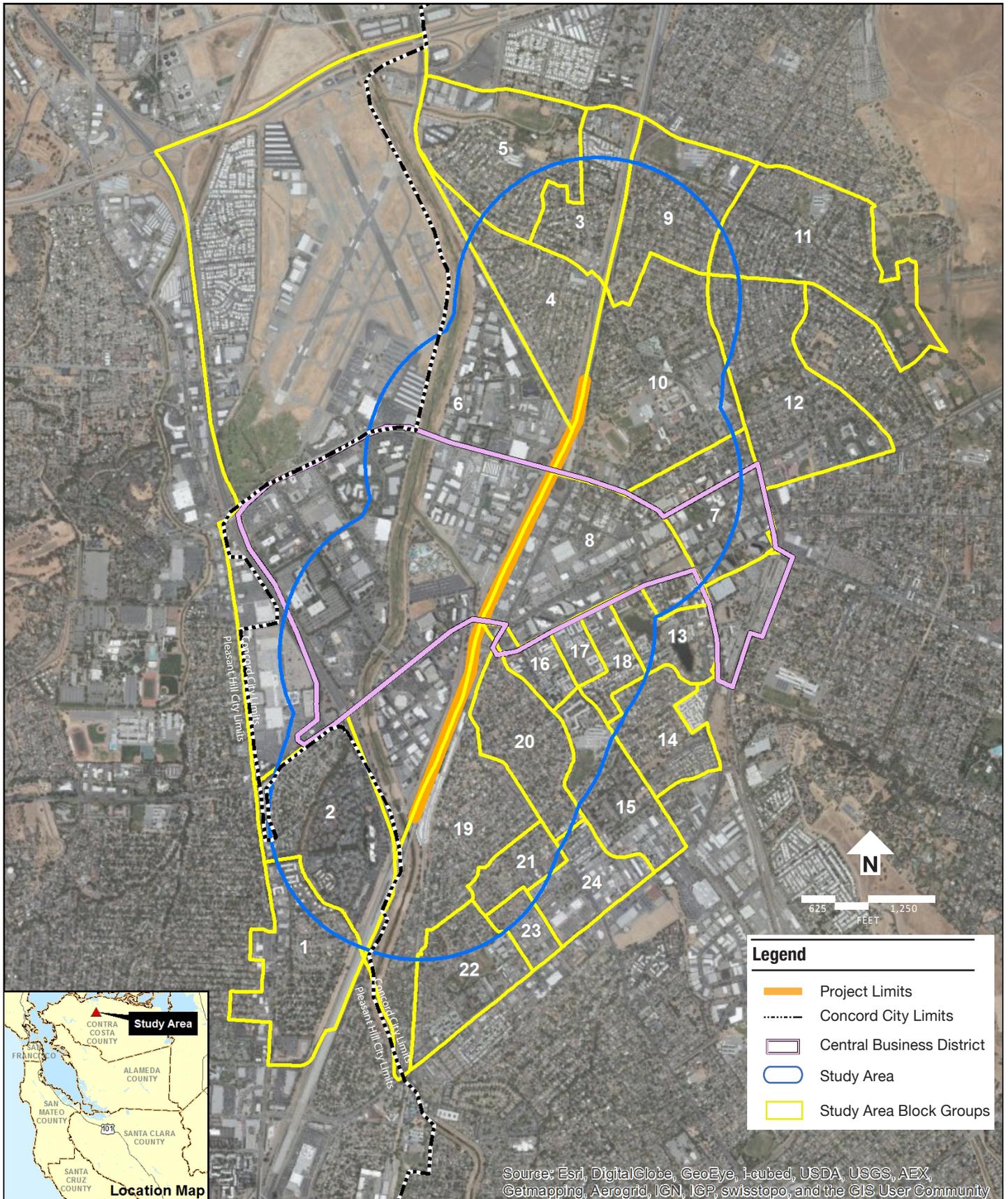
<sup>4</sup> U.S. Department of Health & Human Services, 2015 HHS Poverty Guidelines. Accessed April 15, 2015 from <http://aspe.hhs.gov/poverty/15poverty.cfm>

regional poverty trends. The 2013 Association of Bay Area Government’s (ABAG) Projections, which is the basis for regional planning activities by Caltrans, was used for projecting future demographic conditions.

**Table 2.1-6 Study Area Census Tracts and Block Groups – 2010**

<b>Number</b>	<b>U.S. Census Tract</b>	<b>U.S. Census Block Group</b>
1	Census Tract 3240.02	Block Group 2
2	Census Tract 3240.02	Block Group 3
3	Census Tract 3270	Block Group 2
4	Census Tract 3270	Block Group 3
5	Census Tract 3270	Block Group 4
6	Census Tract 3270	Block Group 5
7	Census Tract 3280	Block Group 1
8	Census Tract 3280	Block Group 2
9	Census Tract 3290	Block Group 3
10	Census Tract 3290	Block Group 4
11	Census Tract 3300	Block Group 2
12	Census Tract 3300	Block Group 4
13	Census Tract 3361.01	Block Group 1
14	Census Tract 3361.01	Block Group 2
15	Census Tract 3361.02	Block Group 1
16	Census Tract 3361.02	Block Group 2
17	Census Tract 3361.02	Block Group 3
18	Census Tract 3361.02	Block Group 4
19	Census Tract 3362.01	Block Group 1
20	Census Tract 3362.01	Block Group 2
21	Census Tract 3362.01	Block Group 3
22	Census Tract 3362.02	Block Group 1
23	Census Tract 3362.02	Block Group 2
24	Census Tract 3362.02	Block Group 3

Note: <sup>1</sup> Number references correspond to Figure 2.1-2



Study Area Census Block Groups

Figure

2.1-2

Source: Caltrans, 2015c

Race

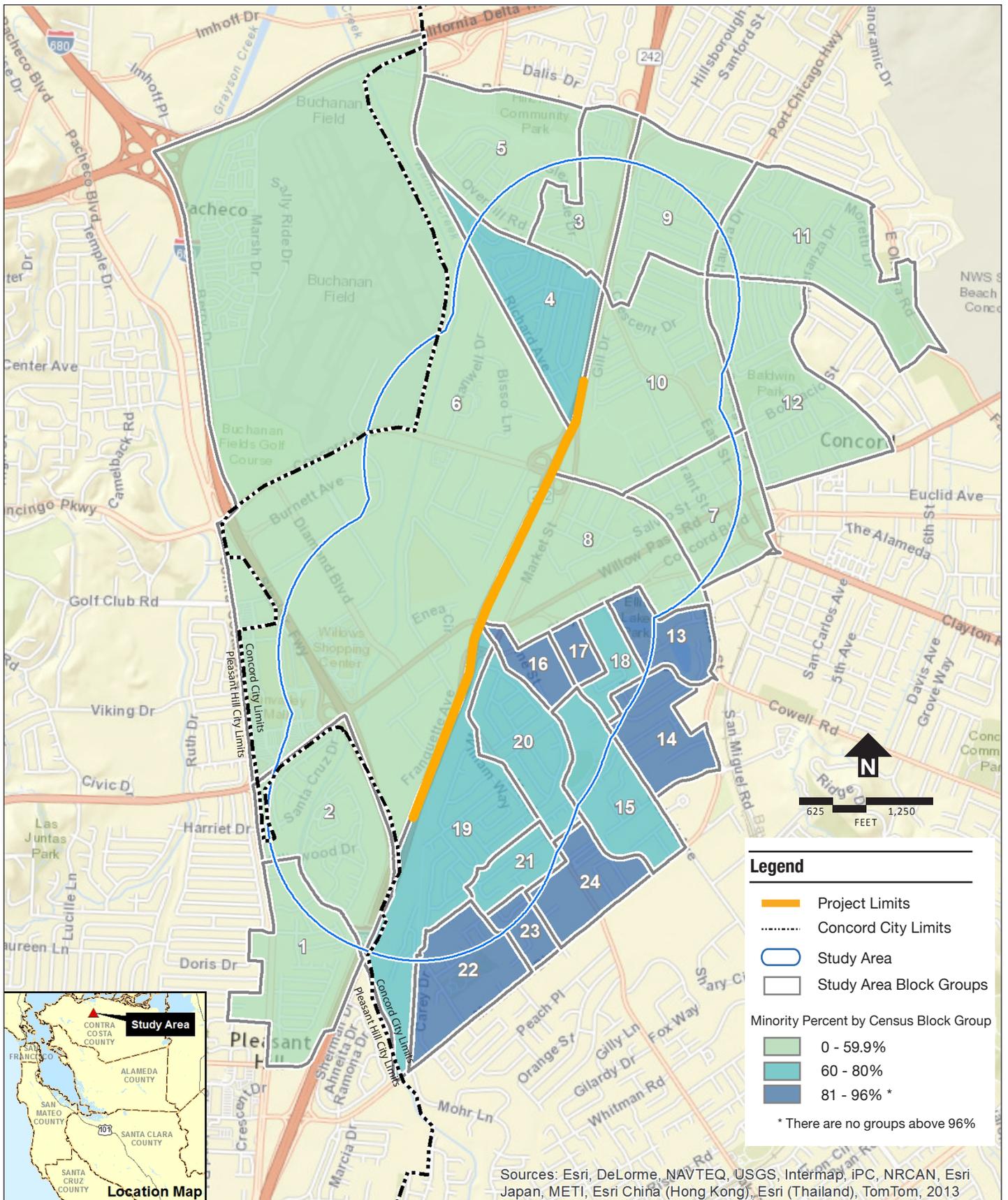
Concord is a diverse community, representing many races and ethnicities. Minority groups comprise 52 and 50 percent of the Contra Costa County and Concord populations, respectively, and 67 percent of the study area population as shown in **Figure 2.1-3**. Pleasant Hill has the lowest percentage of minority populations at 32 percent. **Table 2.1-7** summarizes the population demographics for Contra Costa County, Concord, Pleasant Hill, and the study area.

**Table 2.1-7 Population Distribution**

<b>Population</b>	<b>Contra Costa County</b>	<b>Concord</b>	<b>Pleasant Hill</b>	<b>Study Area</b>
<b>Total Population</b>	<b>1,049,025</b>	<b>122,067</b>	<b>33,152</b>	<b>37,164</b>
<i>Hispanic or Latino (of any race)</i>	255,560	37,311	4,009	18,606
<i>Not Hispanic or Latino</i>	793,465	84,756	29,143	18,558
White	500,923	61,416	22,498	12,351
Black or African American	93,604	3,991	656	1,505
American Indian and Alaska Native	2,984	366	68	114
Asian	148,881	13,219	4,447	3,147
Native Hawaiian and Other Pacific Islander	4,382	744	62	338
Some Other Race	3,122	325	46	87
Two or More Races	39,569	4,695	1,366	1,016
<b>Minority Percent</b>	<b>52%</b>	<b>50%</b>	<b>32%</b>	<b>67%</b>

Income

**Table 2.1-8** summarizes per capita and median household income levels for Contra Costa County, Concord, Pleasant Hill, and the study area. The table compares income and median household income levels from the 2000 decennial census and the 2008-2012 ACS estimates. Both the per capita and median household income of the study area is lower than Contra Costa County, Concord, and Pleasant Hill. Pleasant Hill has the highest average median income and lowest percent of households in poverty compared to Contra Costa County, Concord and the study area. The study area has a slightly higher percent of households in poverty when compared to Contra Costa County and Concord.



Minority Percent Distribution

Figure

2.1-3

**Table 2.1-8 Income Levels**

Area	Per Capita Income (Census 2000)	Per Capita Income (ACS 2008-2012)	Median Household Income (Census 2000)	Median Household Income (ACS 2008-2012)	Percent Population Below Poverty Level
Contra Costa County	\$30,615	\$38,106	\$63,675	\$78,187	7.6%
Concord	\$24,727	\$31,500	\$55,597	\$65,850	7.6%
Pleasant Hill	\$33,076	\$41,990	\$67,489	\$76,750	5.0%
Study Area	\$19,234	\$22,975	\$43,418	\$52,811	13%

**Environmental Consequences**

*Build Alternative 1*

A total of seventeen block groups within the study area would be considered environmental justice communities. Thirteen block groups within the study area would be considered environmental justice communities based on race and are located immediately adjacent, and up to 0.5 miles from, the project limits. Twelve of these block groups are located towards the southern extent of the project limits, south of Clayton Road and east of SR 242. The remaining environmental justice block group is located at the northern extent of the project limits at Solano Way, on the west side of SR 242 (see **Figure 2.1-3**). The environmental justice communities located adjacent to the south of Clayton Road would be most directly affected by the construction of the southbound SR 242 on- and off-ramps, particularly the roadway widening and restriping to accommodate the westbound Clayton Road extended left-turn pocket to southbound Market Street. However, these same impacts would be equally borne by the non-environmental justice communities located adjacent to the project limits as further described below. No work is proposed near the northernmost environmental justice community. The environmental justice communities that are not located directly adjacent to proposed project improvements would not be impacted by the project owing to the distance from proposed improvements.

Four block groups would be considered environmental justice communities based on income, but are located between approximately 0.3 to 0.5 miles from the project limits. Three of these block groups are located near the southern project limits on the east side of SR 242. One remaining block group is located near the northern project limits on the west side of SR 242 (see **Figure 2.1-4**).

Implementation of Build Alternative 1 would have direct and indirect effects on all adjacent communities as the proposed improvements would involve construction and improvements along the majority of the SR 242 corridor within the study area.

However, project effects, such as increases in noise levels and temporary construction impacts (e.g., dust and noise impacts), would be borne by both environmental justice communities and non-environmental justice communities. Although environmental justice communities exist adjacent to the project limits, they would not be subject to an adverse impact greater than experienced by the non-environmental justice communities, as further summarized below.

#### Relocations/Businesses

Build Alternative 1 would result in several TCEs and permanent acquisitions, as identified in the *Relocations and Property Acquisitions* discussion above. No acquisitions or easements would require displacement of residences or businesses in block groups within environmental justice communities.

#### Noise

Proposed improvements on Clayton Road and Market Street would be located adjacent to an environmental justice community. Work in this area includes roadway widening, retaining wall construction, extension of the SR 242 pedestrian undercrossing, grading, drainage improvements, and replacement landscaping. **Section 2.2.7, Noise**, evaluates the potential noise effects from implementation of such roadway improvements on residents adjacent to Clayton Road and Market Street.

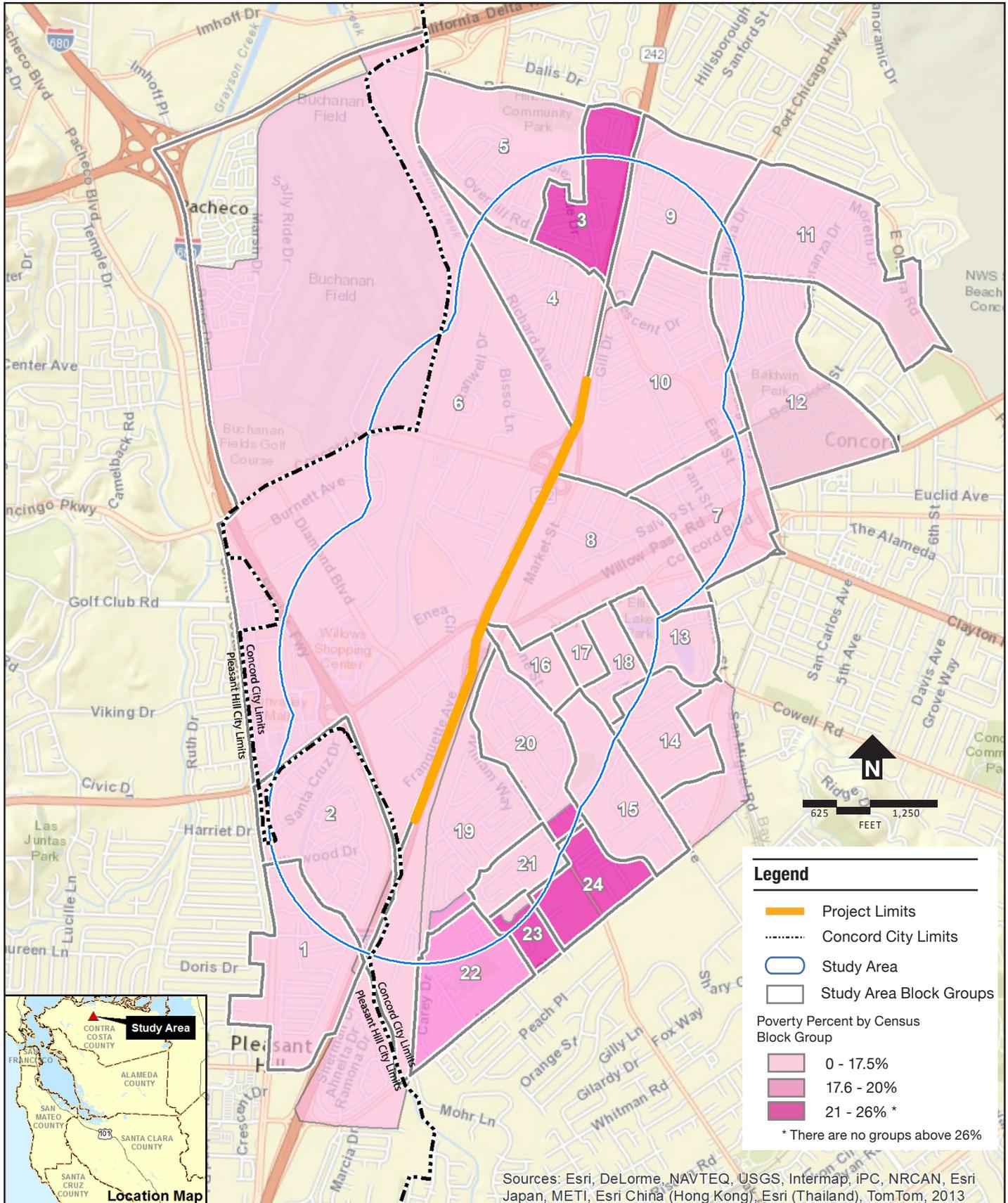
Noise increases for Build Alternative 1 were calculated to be 0 to 1 dBA higher than existing noise levels and thus does not represent substantial increases (i.e., an increase of 12 dBA or more). However, because predicted noise levels would exceed noise abatement criteria standard for residential land uses, noise barriers were evaluated to potentially reduce noise for the adjacent Environmental Justice community. None of these noise barriers were recommended for construction because of the reasonableness and feasibility constraints outlined in the Noise Abatement Decision Report (NADR) for the proposed project.<sup>5</sup> See **Section 2.2.7, Noise**, for a complete discussion of the noise abatement considerations made for this project.

Construction noise would primarily result from operation of heavy equipment and trucks for a temporary period of time. Construction noise would temporarily affect both environmental justice communities and non-environmental justice communities. As a result, there would be no disproportionate impact between environmental justice and non-environmental justice communities. **Section 2.2.7, Noise**, includes avoidance and minimization measures for construction noise, as appropriate.<sup>6</sup>

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<sup>5</sup> Caltrans, 2015h. SR 242/Clayton Road Interchange Project, Noise Abatement Decision Report

<sup>6</sup> Caltrans, 2015h. SR 242/Clayton Road Interchange Project, Noise Study Report. (Original work October 2014; Revised March 2015)



Poverty Percent Distribution

Figure

2.1-4

### Air Quality

Implementation of the proposed project would not produce any potential adverse effects to air quality. Construction emissions would not be significant with the implementation of feasible control measures as specified in Caltrans guidelines, and would minimize any potential effects the project may have during construction. Caltrans special provisions and standard specifications will include the requirement to minimize or eliminate dust through application of water or dust controls.<sup>7</sup>

### Aesthetic Character

Implementation of Build Alternative 1 would result in changes to the existing visual environment. The changes would be more evident in some parts of the study area than in others, where limited views of the proposed overhead ramp structures would be constructed. A separate Visual Impact Assessment (VIA) was prepared to evaluate the visual effects of the project, discussed in **Section 2.1.5, Visual/Aesthetics**. Widening existing-ramps and constructing new ramps would produce moderately noticeable visual changes by extending the paved surfaces and removing vegetation. In certain areas within the study area, removal of trees or vegetation exposes less visually appealing suburban development.

The quantity of roadside vegetation that would be removed by the project would be determined during final project design and serve as the basis for determining the amount of replacement landscape planting to be provided by the project. Existing landscaping and other roadside vegetation removed by Build Alternative 1 would be replaced where proper setback exists and where feasible per Caltrans policy. Replacement landscaping and roadside vegetation, per Caltrans policy, would reduce the potential for the substantial deterioration of visual quality as a result of vegetation removal.

Under Build Alternative 1, the northbound off-ramp to Clayton Road would be visible by environmental justice communities located east of SR 242 and south of Clayton Road. **Section 2.1.5, Visual/Aesthetics**, includes a visual simulation (viewpoint 2) of proposed improvements visible from environmental justice communities located at Meadow Lane and Belmont Road. Proposed conditions visible at this location would result in little change to existing views. While improvements would result in increased man-made land cover, views of SR 242 would continue to be partially screened by trees and shrubs. The changes would be consistent with the urban character of the existing roadway and have little effect on visual quality for nearby receptors, environmental justice and non-environmental justice communities alike.

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<sup>7</sup> Caltrans, 2015a. SR 242/Clayton Road Interchange Project, Air Quality Report; Caltrans, 2010. Standard Specifications 14-9.03A

Overall, the magnitude of change would be notable but would not substantially alter scenic vistas, scenic resources, or degrade the existing character and quality of the overall study area or in both environmental justice communities and non-environmental justice communities. The overall visual impact under Build Alternative 1 would be moderate-low.<sup>8</sup>

### *Build Alternative 2*

Similar to Build Alternative 1, the environmental justice communities located adjacent to the south of Clayton Road would be most directly affected by the construction of the southbound SR 242 off-ramp proposed under Build Alternative 2. However, much less roadwork is proposed along Clayton Road under Build Alternative 2. No work is proposed near the northernmost environmental justice community at Solano Way. The environmental justice communities that are not located directly adjacent to proposed project improvements would not be impacted by the project owing to the distance from proposed improvements. As discussed above, no low income environmental justice communities are located adjacent to the project limits.

Implementation of Build Alternative 2 would have direct and indirect effects on all adjacent communities as the proposed improvements would involve construction and improvements along the majority of the SR 242 corridor within the study area. However, project effects, such as increases in noise levels and temporary construction impacts (e.g., dust and noise impacts), would be borne by both environmental justice communities and non-environmental justice communities. Although environmental justice communities exist adjacent to the project limits, they would not be subject to an adverse impact greater than experienced by the non-environmental justice communities, as further summarized below.

### Relocations/Businesses

Build Alternative 2 would result in several TCEs and permanent acquisitions, as identified in the *Relocations and Property Acquisitions* discussion above. No acquisitions or easements under Build Alternative 2 would require the displacement of residences or businesses. No disproportionate land use effects to environmental justice communities are anticipated under Build Alternative 2.

### Noise

Proposed improvements on Clayton Road and west of Market Street would be located adjacent to an environmental justice community. Work in this area is less extensive under Build Alternative 2 when compared to Build Alternative 1, and mostly includes roadway widening within the roadway medians to accommodate extended left turn pockets. **Section 2.2.7, Noise**, evaluates the potential noise effects from implementation of such roadway improvements on residents adjacent to Clayton Road and Market Street. Noise levels at the receptor locations within environmental justice communities would not increase as a result of Build Alternative 2. While implementation of Build Alternative 2 would not cause significant noise level, predicted future noise levels (existing plus modeled noise conditions) would exceed the Activity Category noise abatement criteria by 2 to 3

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<sup>8</sup> Caltrans, 2015l. SR 242/Clayton Road Interchange Project, Visual Impact Assessment.

dBA. As such, the same noise barriers considered for Build Alternative 1 were also considered for Build Alternative 2 as a potential noise abatement options. None of the noise barriers were recommended for construction because of the reasonableness and feasibility constraints outlined in the NADR for the proposed project. See **Section 2.2.7, Noise**, for a complete discussion of the noise abatement considerations made for this project.

Construction noise would primarily result from operation of heavy equipment and trucks for a temporary period of time. Construction noise would temporarily affect environmental justice communities and non-environmental justice communities. As a result, there would be no disproportionate impact between environmental justice and non-environmental justice communities. **Section 2.2.7, Noise**, includes avoidance and minimization measures for construction noise, as appropriate.<sup>9</sup>

#### Air Quality

Implementation of the proposed project would not produce any potential adverse effects to air quality. Construction emissions would not be significant with the implementation of feasible control measures as specified in Caltrans guidelines, and would minimize any potential effects the project may have during construction. Caltrans special provisions and standard specifications will include the requirement to minimize or eliminate dust through application dust palliatives (i.e., water, dust suppressants, and dust control binders to control dust caused by vehicles and wind).<sup>10</sup>

#### Aesthetic Character

Implementation of Build Alternative 2 would result in changes to the existing visual environment. The changes would be more evident in some parts of the study area than in others, where limited views of the proposed ramp structures would be constructed. The visual effects of the project are discussed in detail in **Section 2.1.5, Visual/Aesthetics**. Widening existing-ramps and constructing new ramps would produce moderately noticeable visual changes by extending the paved surfaces and removing vegetation.

Under Build Alternative 2, the northbound off-ramp to Clayton Road would be visible by environmental justice communities located east of SR 242 and south of Clayton Road. There is no substantial difference between Build Alternatives 1 and 2 with regards to this design feature and, as such, the visual effects experienced by environmental justice communities would be the same. **Section 2.1.5, Visual/Aesthetics**, includes a visual simulation (viewpoint 2) of proposed improvements visible from environmental justice communities located at Meadow Lane and Belmont Road. The changes would be consistent with the urban character of the existing roadway and have little effect on visual quality for nearby receptors, environmental justice and non-environmental justice communities alike.

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<sup>9</sup> Caltrans, 2015h. SR 242/Clayton Road Interchange Project, Noise Study Report. (Original work October 2014; Revised March 2015)

<sup>10</sup> Caltrans, 2015a. SR 242/Clayton Road Interchange Project, Air Quality Report; Caltrans, 2010. Standard Specifications 14-9.03A

Overall, the magnitude of change would be notable but would not substantially alter scenic vistas, scenic resources, or degrade the existing character and quality of the overall study area or in both environmental justice communities and non-environmental justice communities. The overall visual impact under Build Alternative 2 would be moderate-low.<sup>11</sup>

#### *No-Build Alternative*

Under the No-Build Alternative, freeway travel along the SR 242 corridor and use of the existing on and off ramps would remain as it currently exists. There would be no displacement of minority or low-income residents, businesses or employees and therefore no direct effect on minority populations. Additionally, there would be no disruption of community facilities or existing land uses under the No-Build Alternative. Therefore, the No-Build Alternative would not result in disproportionate impacts to environmental justice communities in the surrounding areas as effects would not be more severe or greater in magnitude than that would be suffered by non-environmental justice populations.

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

Based on the above discussion and analysis, the Build Alternatives would 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.

Any avoidance and minimization measures specifically related to aesthetics, noise, air quality, and temporary construction effects are discussed in the appropriate sections of this chapter.

#### **Cumulative Impacts**

##### *Relocations*

With regard to relocation, four existing businesses would be potentially displaced: 1) NCE Home Décor Kitchen and Bath, 2) All Glass, 3) Da Beauty Salon & Spa, and 4) First Class Barbershop. These relocations, in combination with relocations from other proposed development projects within the Concord, would contribute to a cumulative effect.

Concord's Planning Department indicated that other commercial spaces are available to lease within the city limits that are comparable in size to the relocated businesses. Given the large amount of available commercial space within the area available for lease, businesses and/or properties to be relocated are not considered to be in poor or declining health. Therefore, the project would not make any contribution to cumulative effects from relocations.

Build Alternative 2 would not result in any residential or business displacement and therefore would not contribute toward a cumulative effect.

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<sup>11</sup> Caltrans, 2015l. SR 242/Clayton Road Interchange Project, Visual Impact Assessment.

*Environmental Justice*

Effects of the project would occur within both environmental justice and non-environmental justice communities along the corridor. Business displacement (associated with Build Alternative 1 only), noise impacts, air quality impacts, and visual intrusions were evaluated within both environmental justice and non-environmental justice communities.

The evaluations determined that no environmental justice community would be subject to an adverse effect greater than experienced by the non-environmental justice communities. Therefore, the project would not have a disproportionate impact to environmental justice communities and the project would not contribute to a cumulative effect.

### 2.1.3 UTILITIES/EMERGENCY SERVICES

#### AFFECTED ENVIRONMENT

**Table 2.1-9** summarizes the type of utility, the provider, and a brief description of its services.

**Table 2.1-9 Public Utility Providers**

Utility Type	Provider	Description
Water	Contra Costa Water District	Capacity to provide 16.5 million gallons per day
Wastewater	Central Contra Costa Sanitary District	Treats 45 million gallons of wastewater per day in a 146 square mile area of central Contra Costa County
Electricity	Pacific Gas and Electric (PG&E)	Provides electricity service and natural gas
Storm Water	City of Concord Public Works Department	Provide stormwater treatment and management services to eliminate stormwater pollution
Communication Services	Comcast and AT&T	Cable, high-speed internet, voice

Source: City of Concord Website, 2014. Available at; <http://www.cityofconcord.org/living/recycle/power-outages-you.aspx>), <http://www.concorddisposal.com/> and <http://www.cityofconcord.org/pw/> ; last accessed April 8, 2014

#### ENVIRONMENTAL CONSEQUENCES

##### **Build Alternative 1**

Excavation along the SR 242 corridor, modification of existing bridge structures, and the new construction of on- and off-ramps and an auxiliary lane all have the potential to impact existing utilities in the study area under Build Alternative 1.

Relocation of the Pacific Gas and Electric (PG&E) 21 kilovolt overhead electrical line along Franquette Avenue would be required. The electrical line would be relocated on the same general alignment, but the poles would be moved to the back of the proposed sidewalk improvements, outside of State right-of-way. The actual pole relocations would be agreed upon during final design,

should Build Alternative 1 be selected as the preferred alternative. Minor interruptions to PG&E electric services are anticipated during construction and will be coordinated by the affected utility owner who will be responsible for the design and installation of their relocated facilities. It is expected that any brief interruptions would be restricted to the switchover from the original services to the new services. The original services would remain in operation until the switchover would take place.

Permanent easements would also be required for Build Alternative 1 within EBMUD owned property occupied by the Mokelumne Aqueduct, located along the west side of SR 242. The aqueduct system would not be impacted through physical construction of the project.

Once construction is complete, there would be no impacts to utilities as the operation of Build Alternative 1, as a transportation facility would not generate a substantial demand for increased utility services.

No property owned or used by emergency service providers would be acquired or otherwise used as part of Build Alternative 1. Construction activities would have the potential to temporarily disrupt roadway access within the project limits, potentially affecting emergency response times.

### **Build Alternative 2**

Under Build Alternative 2, the Kinder Morgan oil pipeline along the east side of SR 242, just north of Willow Pass Road, would be relocated. The Kinder Morgan oil pipe-line would be relocated within a utility easement on the car dealership property outside of State right-of-way, adjacent to the proposed northbound SR 242 on-ramp from Willow Pass Road.

Other effects related to implementation of the project under Build Alternative 2 would be the same as Build Alternative 1, with the exception of the relocation of the Kinder Morgan oil pipe-line. Additionally, permanent easements would also be required for Build Alternative 2 within EBMUD owned property occupied by the Mokelumne Aqueduct, located along the west side of SR 242, but the aqueduct system would not be impacted. Once in operation, there would be no impacts to utilities.

### **No-Build Alternative**

The No-Build Alternative would not change existing conditions; therefore, it would have no effect on utilities within the study area.

## **AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES**

**Measure UTL-1:** Detailed utility coordination and verification will be required during the final design phase of the project. The locations of the utilities will not be positively identified until final design, and in coordination with the affected utility owners. Any potential utility conflicts identified during the design phase will be avoided if possible. If relocation is necessary, such utilities would

be relocated to locations not in conflict and not containing any sensitive environmental resources. Coordination with all utility owners within the footprint of the project will continue during the design and construction phases of the project.

Caltrans would implement a TMP with **Measure COM-1**, as previously described in **Section 2.1.1, Parks and Recreational Facilities**. A TMP that specifies all timeframes for all lane closures would be prepared.

**Measure UTL-2:** Emergency Services will be notified prior to construction, of any temporary road closures and/or detours as part of the TMP. Implementation of the TMP would reduce short-term operational effects to police, fire, and emergency service providers that may result from construction of the project.

## CUMULATIVE IMPACTS

As discussed, the Build Alternatives would not result in adverse effects to utilities or emergency services. Therefore, the project would not contribute to any potential cumulative effects to these resources.

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

#### REGULATORY SETTING

Caltrans, as assigned by 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.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR Part 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

## AFFECTED ENVIRONMENT

Information in this section is based on the Traffic Operations Analysis Study Report (Caltrans, 2015k) approved in March 2015.

The traffic study area was developed in consultation with CCTA, Concord, and Caltrans staff and is intended to capture the local and regional traffic effects of the Build Alternatives. The traffic study area encompasses the SR 242 corridor from I-680 to the Solano Way interchange, as well as approximately one mile to the east and west of the SR 242 corridor. A map of the traffic study area is shown on **Figure 2.1-5**.

The SR 242/Clayton Road and SR 242/Concord Avenue interchanges serve as key access points to important local destinations such as the Concord CBD and the Concord BART station to the east; Buchanan Field Airport and Waterworld to the west; and the arterial roadways of Concord Avenue, Clayton Road, and Willow Pass Road that connect Concord with adjacent cities.

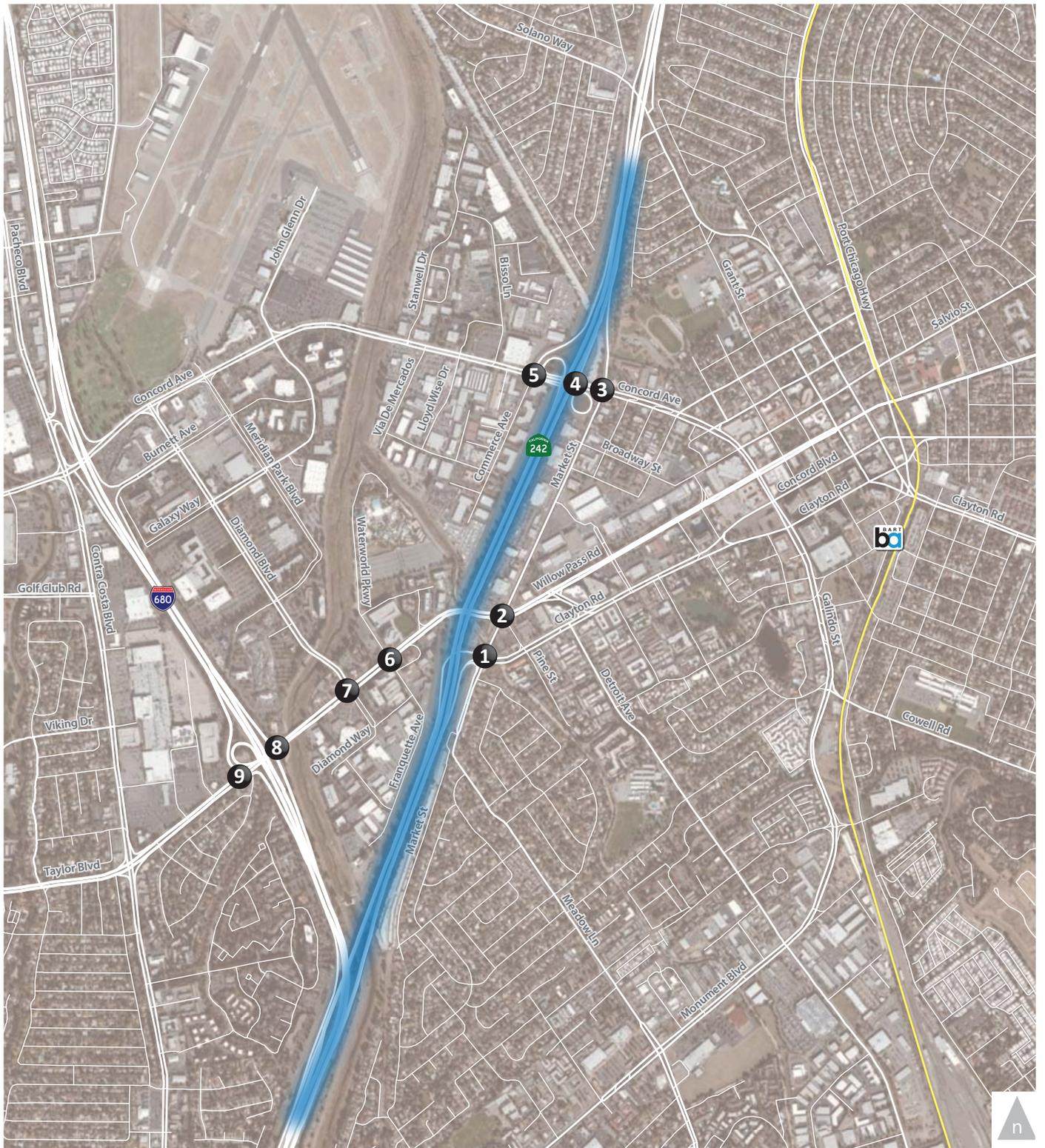
### **Current and Forecast Traffic Analysis**

Local street, ramp, and freeway mainline traffic counts were primarily collected in October 2013. Where 2013 traffic counts were lower compared to previous years, traffic data from May 2011 was used in order to provide a conservative evaluation of traffic operations within the study area. Based on the data collected, local street peak traffic hours are between 7:30 – 8:30 AM and 4:45 – 5:45 PM; SR 242 mainline peak hours are between 7:00 – 8:00 AM and 4:00 – 5:00 PM.

The traffic forecasts were generated using the latest version of the CCTA Travel Demand Forecasting Model (CCTA Model). The CCTA Model is a regional travel demand model that covers the entire Bay Area, with higher level of geographic detail within Contra Costa County. The base year CCTA Model was updated and validated to reflect 2013 conditions. The CCTA Model receives its demographic inputs from the ABAG regional land use projections, and produces estimates of future regional travel flows for the County. The future year model also reflects regional land use projections consistent with ABAG Projections 2011, as well as roadway network improvements contained in Plan Bay Area (the current Regional Transportation Plan for the Bay Area). An extensive model calibration and validation process was conducted to ensure that the modeled results were consistent with the observed conditions.

The traffic operations analysis evaluated three distinct timeframes:

- existing (2013)
- opening year (2020)
- design year (2040)



**Legend**

-  Study Freeway Segment
-  Study Intersection

Traffic Study Area

Figure **2.1-5**

Source: Caltrans, 2015k

### Level of Service and Measures of Effectiveness

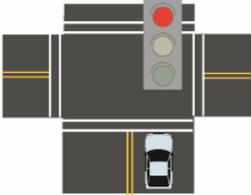
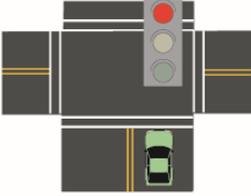
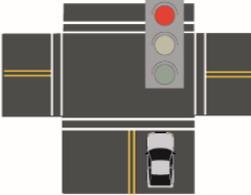
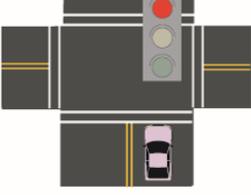
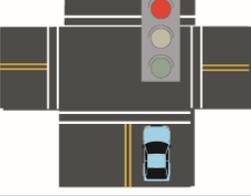
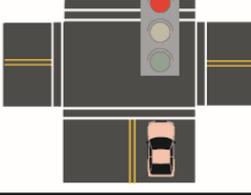
Level of Service (LOS) is a qualitative measure of operating conditions within a traffic stream. There are six LOS ratings, ranging from LOS A (free traffic flow with low traffic volumes and high speeds, resulting in low vehicle densities) to LOS F (traffic volumes exceeding the capacity of the facility, resulting in forced flow traffic operations, slow speeds, and high vehicle densities). This traffic analysis evaluates traffic operations based on the LOS criteria for intersections, basic and weave freeway segments, and freeway ramp junctions. See **Figures 2.1-6** and **2.1-7** for an overview of the LOS thresholds for signalized and unsignalized intersections. **Table 2.1-10** presents LOS criteria for freeway segments. Study intersections were evaluated for AM and PM peak hour conditions. Peak hour (as opposed to *peak period*) traffic volumes, lane configurations, and signal timing plans were used as inputs for the intersection LOS calculations. Study freeway segments were evaluated for peak period conditions.

**Table 2.1-10 Freeway LOS Criteria**

Level of Service	Description	Basic Mainline Segment Density Criteria <sup>1</sup>	Merge/Diverge Segment Density Criteria <sup>1</sup>
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≤ 11.0	≤ 10.0
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 11.0 to 18.0	> 10.0 to 20.0
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.	> 18.0 to 26.0	> 20.0 to 28.0
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.	> 26.0 to 35.0	> 28.0 to 35.0
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.	> 35.0 to 45.0	> 35.0 to 43.0
F	Represents a breakdown in flow.	> 45.0	> 43.0

Note:

1. Density is measured in passenger cars per mile per lane
2. For freeway weaving sections (e.g. auxiliary lanes), LOS is based on the service flow (passenger cars per hour per lane)

Level of Service	Delay per Vehicle (seconds)
	 $\leq 10$
	 11-20
	 21-35
	 36-55
	 56-80
	 >80

**Factors Affecting LOS of Signalized Intersections**

**Traffic Signal Conditions:**

- Signal Coordination
- Cycle Length
- Protected left turn
- Timing
- Pre-timed or traffic activated signal
- Etc.

**Geometric Conditions:**

- Left- and right-turn lanes
- Number of lanes
- Etc.

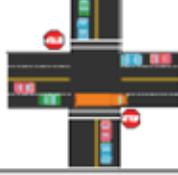
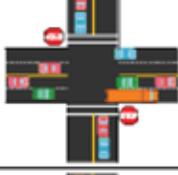
**Traffic Conditions:**

- Percent of truck traffic
- Number of pedestrians
- Etc.

Levels of Service for Intersections with Traffic Signals

Figure

2.1-6

Level of Service	Flow Conditions	Delay per Vehicle (seconds)	Technical Descriptions
<b>A</b>		<10	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. <b>Very short delay</b>
<b>B</b>		10-15	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. <b>No delays</b>
<b>C</b>		15-25	Stable traffic flow, but less freedom to select speed, change lanes or pass. <b>Minimal delays</b>
<b>D</b>		25-35	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. <b>Minimal delays</b>
<b>E</b>		35-50	Unstable traffic flow. Speeds change quickly and maneuverability is low. <b>Significant delays</b>
<b>F</b>		>50	Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. <b>Considerable delays</b>

Levels of Service for Unsignalized Intersections

Figure

It is often useful to supplement the individual freeway segment analyses with system-wide performance measures such as vehicle miles of travel, average travel time, average travel speed, and vehicle hours of delay to obtain a better understanding of overall traffic operations. This information can be particularly useful when comparing project alternatives. Several Measures of Effectiveness (MOEs) were used to quantify SR 242 study corridor traffic operations, including:

- **Vehicle Miles of Travel (VMT)** – is a measure used in trend analysis and forecasts. 1) On highways, a measurement of the total miles traveled in all vehicles in the area for a specific time period. It is calculated by the number of vehicles multiplied by the miles traveled in a given area or on a given highway during the time period. (2) In transit, the number of vehicle miles operated on a given router, line, or network during a specific time period.
- **Average Travel Time (ATT)** – is a measure of the time it takes (on average) to travel from one end of a corridor to the other during the peak period. The travel time calculation considers the average delay throughout the corridor, vehicle queues, and friction caused by merging vehicles.
- **Average Travel Speed (ATS)** – is directly related to average travel time and the corridor length.
- **Vehicle Hours of Delay (VHD)** – is the total amount of delay incurred during the peak period because of congestion and demand exceeding the capacity of the freeway.
- **Maximum Individual Vehicle Delay** – is the maximum delay in minutes experienced by an individual driver during the peak hour relative to driving the corridor under free-flow conditions.

### **Existing Traffic Operations**

#### Local Roadways and Ramp Termini

The following intersections in the traffic study area were evaluated:

1. Clayton Road/Market Street/SR 242 ramps
2. Willow Pass Road/Market Street
3. Concord Avenue/Market Street/SR 242 northbound on-ramp
4. Concord Avenue/SR 242 northbound loop on-ramp
5. Concord Avenue/Commerce Avenue/SR 242 southbound ramps
6. Willow Pass Road/Franquette Avenue
7. Willow Pass Road/Diamond Boulevard
8. Willow Pass Road/I-680 northbound ramps
9. Willow Pass Road/I-680 southbound ramps

The LOS at each of these intersections is presented for the No-Build and Build Alternatives under existing conditions, 2020, and 2040 in **Table 2.1-11**.

#### SR 242 Freeway Mainline Operations Analysis

The following SR 242 freeway mainline segments were analyzed:

1. SR 242 between I-680 and Clayton Road
2. SR 242 between Clayton Road and Concord Avenue
3. SR 242 between Concord Avenue and Solano Way/Grant Street

The peak hour LOS for northbound and southbound SR 242 highway mainline segments is presented in **Tables 2.1-12 through 2.1-15** for the No-Build and Build Alternatives under existing, 2020, and 2040 conditions.

During the existing AM and PM peak hours (7:00 AM to 8:00 AM and 4:00 PM to 5:00 PM) all study segments of northbound SR 242 operate at LOS D or better and no major congestion occurs. However, major traffic congestion occurs in the southbound direction during the existing AM peak hour, when the majority of SR 242 study segments operate at LOS F. A bottleneck develops along southbound SR 242 at the lane drop just north of the I-680 merge, resulting in upstream vehicle queues that extend as far as the freeway segment between the Solano Way/Grant Street and Concord Avenue interchanges.

All southbound SR 242 study segments operate at LOS C or better during the existing PM peak hour.

#### System-wide Performance

As shown in **Table 2.1-16** during the AM peak period, southbound SR 242 experiences the highest VMT and average travel time; has an average travel speed of 21 mph; and experiences over 1,000 hours of vehicle delay. Northbound SR 242 generally operates in free-flow conditions with an average travel speed of 65 mph.

During the PM peak period, SR 242 generally operates in free-flow conditions in both the northbound and the southbound directions. The average travel speeds for the northbound and southbound directions are 64 and 65 mph, respectively.

#### *Bicycle and Pedestrian Facilities*

The existing and planned bike routes in the study area are described in **Section 2.1.1, Parks and Recreational Facilities** (see **Figure 2.1-1** and **Table 2.1-2**). Since the adoption of the 2003 Trails Master Plan, Concord has implemented many of the bike routes that pass through the study area. In addition, Concord has constructed segments of striped (Class II) bike lanes on several major arterial/collector roadways.

**Table 2.1-11 Peak Hour Local Roadway and Ramp Termini LOS**

Intersection	Traffic Control <sup>2</sup>	Peak Hour <sup>1</sup>	Existing Conditions		2020 No-Build		2020 Alternative 1		2020 Alternative 2		2040 No-Build		2040 Alternative 1		2040 Alternative 2	
			Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS
Clayton Rd/Market St/SR 242 ramps	Signal	AM PM	27.7 35.8	C D	30 38	C D	33 37	C D	51 32	D C	<b>71</b> <b>55</b>	E E	51 44	D D	<b>80</b> 34	E C
Willow Pass Rd/Market St	Signal	AM PM	28.6 33.7	C C	32 38	C D	32 34	C C	45 44	D D	39 41	D D	39 38	D D	<b>102</b> <b>56</b>	F E
Concord Ave/Market St./SR 242 NB on-ramp	Signal	AM PM	15.0 28.7	B C	19 34	B C	14 26	B C	15 27	B C	24 43	C D	17 28	B C	19 29	B C
Concord Ave/SR 242 NB loop on-ramp <sup>4</sup>	Free	AM PM	Intersection Does Not Have Stop-Controlled Movements													
Concord Ave/Commerce Ave/SR 242 SB ramps	Signal	AM PM	29.1 51.5	C D	<b>38</b> <b>69</b>	D E	28 33	C C	28 34	C C	<b>59</b> <b>133</b>	E F	34 48	C D	35 45	D D
Willow Pass Rd/Franquette Ave	Signal	AM PM	15.1 20.7	B C	20 23	B C	26 26	C C	19 24	B C	33 26	C C	40 31	D C	23 29	C C
Willow Pass Rd/Diamond Boulevard	Signal	AM PM	16.1 32.9	B C	20 35	B D	23 30	C C	17 33	B C	26 45	C D	28 36	C D	19 40	B D
Willow Pass Rd/I-680 NB ramps	Signal	AM PM	23.5 25.7	C C	25 28	C C	24 29	C C	25 25	C C	28 33	C C	26 32	C C	27 31	C C
Willow Pass Rd/I-680 SB ramps	Signal	AM PM	15.6 15.7	B B	15 15	B B	15 17	B B	17 14	B B	16 19	B B	16 20	B B	18 24	B C

CHAPTER 2.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES,  
AND AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Intersection	Traffic Control <sup>2</sup>	Peak Hour <sup>1</sup>	Existing Conditions		2020 No-Build		2020 Alternative 1		2020 Alternative 2		2040 No-Build		2040 Alternative 1		2040 Alternative 2	
			Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS
Franquette Ave/SR 242 SB ramps <sup>5</sup>	Signal	AM PM	N/A		7 12		A B	N/A N/A	N/A N/A	N/A N/A	N/A N/A	11 14	B B	N/A N/A	N/A N/A	
Willow Pass Rd/SR 242 SB ramps <sup>5</sup>	Signal	AM PM	N/A		N/A N/A		N/A N/A	25 14	C B	N/A N/A	N/A N/A	N/A N/A	N/A N/A	30 22	C C	
Willow Pass Rd/SR 242 NB on-ramp <sup>5</sup>	Signal	AM PM	N/A		N/A N/A		N/A N/A	5 7	A A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	6 15	A B	

Notes: Bold text indicates unacceptable intersection operations (LOS E or LOS F). SB = Southbound; NB = Northbound

1. Results based on SimTraffic simulation of 10 runs. Intersection AM and PM peak hours occur between 7:30 to 8:30 AM and 4:45 to 5:45 PM respectively.
2. Signal = Signalized Intersection; Free = uncontrolled intersection
3. Signalized and unsignalized intersection LOS based on weighted average control delay (seconds) per vehicle, according to the *2010 Highway Capacity Manual*.
4. Intersection does not have stop-controlled movements; therefore LOS results are not calculated.
5. N/A represents intersections that do not exist under Existing Conditions or the No-Build Alternative.

**Table 2.1-12 Northbound SR 242 Peak Hour Level of Service - 2020**

Location	Type <sup>4</sup>	# of Lanes	Existing Conditions				2020 No-Build Alternative				2020 Alternative 1				2020 Alternative 2			
			Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
I-680 junction to Lane Add	Basic	3	15	29	B	D	16	31	B	D	16	31	B	D	16	31	B	D
Lane Add to Clayton Rd off-ramp	Weave	3 + Aux	11	20	B	C	12	21	B	C	12	21	B	C	12	21	B	C
Clayton Rd off-ramp to Concord Ave loop on-ramp	Basic	3	11	20	A	C	12	21	B	C	N/A <sup>3</sup>				N/A <sup>3</sup>			
Clayton Rd off-ramp to Clayton Rd on-ramp/Willow Pass Rd on-ramp <sup>2</sup>	Basic	3	N/A				12	21	B	C	12	21	B	C	12	21	B	C
Clayton Rd on-ramp/Willow Pass Rd on ramp <sup>2</sup> to Concord Ave loop on ramp	Merge	3	N/A				13	24	B	C	13	23	B	C	13	23	B	C
Concord Ave loop on-ramp to diagonal on-ramp	Weave	3 + Aux	8	17	A	B	9	18	A	B	11	20	A	C	11	20	A	C
Concord Ave loop on-ramp to diagonal on-ramp	Weave	3 + Aux	11	22	A	C	12	24	B	C	12	24	B	C	12	24	B	C

Notes: bold indicates **LOS E or LOS F** freeway operations. N/A = not applicable. AM peak hour = 7:00 AM to 8:00 AM. PM peak hour = 4:00 PM to 5:00 PM.

- Density presented in vehicles per mile per lane.
- Clayton Road on-ramp under Build Alternative 1 conditions, Willow Pass Road on-ramp under Build Alternative 2 conditions. These intersections do not exist under Existing Conditions or the No-Build Alternative.
- N/A represents mainline segment/ramp junction that does not exist, or would not exist under certain future conditions.
- Lane types include: "Merge" = on-ramp junction where an on-ramp merges with freeway to form a single traffic stream; "Diverge" = off-ramp junction where an off-ramp diverges from freeway to form two or more separate traffic streams; "Weave" = segment with provision of auxiliary lane where a diverge segment closely follows a merge segment; "Basic" = all segments that are not merge, diverge, or weaving segments.

**Table 2.1-13 Northbound SR 242 Peak Hour Level of Service - 2040**

Location	Type <sup>4</sup>	# of Lanes	Existing Conditions				2040 No-Build Alternative				2040 Alternative 1				2040 Alternative 2			
			Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
I-680 junction to Lane Add	Basic	3	15	29	B	D	20	<b>38</b>	C	E	20	<b>38</b>	C	E	20	<b>38</b>	C	E
Lane Add to Clayton Rd off-ramp	Weave	3 + Aux	11	20	B	C	15	24	B	C	15	24	B	C	15	24	B	C
Clayton Rd off-ramp to Concord Ave loop on-ramp	Basic	3	11	20	A	C	14	23	B	C	N/A <sup>3</sup>				N/A <sup>3</sup>			
Clayton Rd off-ramp to Clayton Rd on-ramp/Willow Pass Rd on-ramp <sup>2</sup>	Basic	3	N/A				14	23	B	C	14	23	B	C	14	23	B	C
Clayton Rd on-ramp/Willow Pass Rd on ramp <sup>2</sup> to Concord Ave loop on ramp	Merge	3	N/A				17	27	B	D	17	26	B	D	17	26	B	D
Concord Ave loop on-ramp to diagonal on-ramp	Weave	3 + Aux	8	17	A	B	12	20	B	C	14	22	B	C	14	22	B	C
Concord Ave loop on-ramp to diagonal on-ramp	Weave	3 + Aux	11	22	A	C	16	28	B	D	16	28	B	D	16	28	B	D

Notes: bold indicates **LOS E or LOS F** freeway operations. N/A = not applicable. AM peak hour = 7:00 AM to 8:00 AM. PM peak hour = 4:00 PM to 5:00 PM.

- Density presented in vehicles per mile per lane.
- Clayton Road on-ramp under Build Alternative 1 conditions, Willow Pass Road on-ramp under Build Alternative 2 conditions. These intersections do not exist under Existing Conditions or the No-Build Alternative.
- N/A represents mainline segment/ramp junction that does not exist, or would not exist under certain future conditions.
- Lane types include: "Merge" = on-ramp junction where an on-ramp merges with freeway to form a single traffic stream; "Diverge" = off-ramp junction where an off-ramp diverges from freeway to form two or more separate traffic streams; "Weave" = segment with provision of auxiliary lane where a diverge segment closely follows a merge segment; "Basic" = all segments that are not merge, diverge, or weaving segments.

**Table 2.1-14 Southbound SR 242 Peak Hour Level of Service - 2020**

Location	Type <sup>6</sup>	# of Lanes	Existing Conditions				2020 No-Build Alternative				2020 Alternative 1				2020 Alternative 2			
			Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Solano Way on-ramp to Concord Ave off-ramp	Weave	3 + Aux	45	14	F	B	104	16	F	B	106	16	F	B	106	16	F	B
Concord Ave off-ramp to on-ramp	Basic	3	53	13	F	B	129	14	F	B	140	17	F	B	140	17	F	B
Concord Ave on-ramp merge	Merge	3	80	14	F	B	126	15	F	B	N/A <sup>5</sup>				N/A <sup>5</sup>			
Concord Ave on-ramp to Clayton Rd on-ramp	Basic	3	118	14	F	B	126	15	F	B	N/A <sup>5</sup>				N/A <sup>5</sup>			
Concord Ave on-ramp to Franquette Ave/WPR off-ramp <sup>2</sup>	Weave	3 + Aux	N/A							106	13	F	B	106	13	F	B	
Franquette Ave/WPR off-ramp <sup>2</sup> to Clayton Rd on-ramp	Basic	3	N/A							141	15	F	B	141	15	F	B	
Clayton Rd on-ramp merge <sup>3</sup>	Merge	3	96	20	F	C	95	21	F	C	95	21	F	C	95	22	F	C
Clayton Rd on-ramp to Monument Blvd off-ramp <sup>4</sup>	Basic	3	96	20	F	C	95	21	F	C	95	22	F	C	95	22	F	C
Monument Blvd off-ramp diverge	Diverge	3	96	20	F	C	95	21	F	C	95	22	F	C	95	22	F	C

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Location	Type <sup>6</sup>	# of Lanes	Existing Conditions				2020 No-Build Alternative				2020 Alternative 1				2020 Alternative 2			
			Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Monument Blvd off-ramp to lane drop	Basic	3	<b>122</b>	16	<b>F</b>	B	<b>122</b>	17	<b>F</b>	B	<b>122</b>	17	<b>F</b>	B	<b>122</b>	17	<b>F</b>	B
Lane drop to I-680 junction	Basic	2	<b>40*</b>	24	<b>E*</b>	C	<b>40*</b>	26	<b>E*</b>	C	<b>40*</b>	27	<b>E*</b>	D	<b>40*</b>	27	<b>E*</b>	D

Notes: bold indicates **LOS E or LOS F** freeway operations. WPR= Willow Pass Road; N/A = not applicable. AM peak hour = 7:00 AM to 8:00 AM. PM peak hour = 4:00 PM to 5:00 PM. Locations marked with an asterisk (\*) are bottlenecks, which have LOS E conditions by definition

1. Density presented in vehicles per mile per lane.
2. Franquette Avenue Off-Ramp under Build Alternative 1 conditions, Willow Pass Road Off-Ramp under Alternative 2 conditions. These intersections do not exist under Existing Conditions or the No-Build Alternative.
3. Segment would be Clayton Road On-Ramp to Franquette Avenue On-Ramp under Build Alternative 1 conditions.
4. Segment would be Franquette Avenue on-ramp to Monument Blvd off-ramp under Build Alternative 1 conditions.
5. N/A represents mainline segment/ramp junction that would not exist for that specific Build Alternative.
6. Lane types include: "Merge" = on-ramp junction where an on-ramp merges with freeway to form a single traffic stream; "Diverge" = off-ramp junction where an off-ramp diverges from freeway to form two or more separate traffic streams; "Weave" = segment with provision of auxiliary lane where a diverge segment closely follows a merge segment; "Basic" = all segments that are not merge, diverge, or weaving segments.

**Table 2.1-15 Southbound SR 242 Peak Hour Level of Service - 2040**

Location	Type <sup>6</sup>	# of Lanes	Existing Conditions				2040 No-Build Alternative				2040 Alternative 1				2040 Alternative 2			
			Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Solano Way on-ramp to Concord Ave off-ramp	Weave	3 + Aux	<b>45</b>	14	<b>F</b>	B	<b>108</b>	20	<b>F</b>	C	<b>88</b>	20	<b>F</b>	C	<b>88</b>	20	<b>F</b>	C
Concord Ave off-ramp to on-ramp	Basic	3	<b>53</b>	13	<b>F</b>	B	<b>133</b>	18	<b>F</b>	B	<b>147</b>	21	<b>F</b>	C	<b>147</b>	21	<b>F</b>	C
Concord Ave on-ramp merge	Merge	3	<b>80</b>	14	<b>F</b>	B	<b>128</b>	19	<b>F</b>	C	N/A <sup>5</sup>				N/A <sup>5</sup>			
Concord Ave on-ramp to Clayton Rd on-	Basic	3	<b>118</b>	14	<b>F</b>	B	<b>128</b>	19	<b>F</b>	C	N/A <sup>5</sup>				N/A <sup>5</sup>			

CHAPTER 2.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES,  
AND AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Location	Type <sup>6</sup>	# of Lanes	Existing Conditions				2040 No-Build Alternative				2040 Alternative 1				2040 Alternative 2			
			Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS		Density <sup>1</sup>		LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
ramp																		
Concord Ave on-ramp to Franquette Ave/WPR off-ramp <sup>2</sup>	Weave	3 + Aux	N/A				N/A				111	17	F	B	111	17	F	B
Franquette Ave/WPR off-ramp <sup>2</sup> to Clayton Rd on-ramp	Basic	3	N/A				N/A				144	19	F	C	144	19	F	C
Clayton Rd on-ramp merge <sup>3</sup>	Merge	3	96	20	F	C	90	26	F	C	90	26	F	C	90	27	F	C
Clayton Rd on-ramp to Monument Blvd off-ramp <sup>4</sup>	Basic	3	96	20	F	C	90	26	F	C	90	27	F	D	90	27	F	D
Monument Blvd off-ramp diverge	Diverge	3	96	20	F	C	90	26	F	C	90	27	F	D	90	27	F	D
Monument Blvd off-ramp to lane drop	Basic	3	122	16	F	B	122	20	F	C	122	21	F	C	122	21	F	C
Lane drop to I-680 junction	Basic	2	40*	24	E*	C	40*	34	E*	D	40*	37	E*	E	40*	37	E*	E

Notes: bold indicates **LOS E or LOS F** freeway operations. WPR= Willow Pass Road; N/A = not applicable. AM peak hour = 7:00 AM to 8:00 AM. PM peak hour = 4:00 PM to 5:00 PM. Locations marked with an asterisk (\*) are bottlenecks, which have LOS E conditions by definition

1. Density presented in vehicles per mile per lane.
2. Franquette Avenue Off-Ramp under Build Alternative 1 conditions, Willow Pass Road Off-Ramp under Alternative 2 conditions. These intersections do not exist under Existing Conditions or the No-Build Alternative.
3. Segment would be Clayton Road On-Ramp to Franquette Avenue On-Ramp under Build Alternative 1 conditions.
4. Segment would be Franquette Avenue on-ramp to Monument Blvd off-ramp under Build Alternative 1 conditions.
5. N/A represents mainline segment/ramp junction that would not exist for that specific Build Alternative.
6. Lane types include: "Merge" = on-ramp junction where an on-ramp merges with freeway to form a single traffic stream; "Diverge" = off-ramp junction where an off-ramp diverges from freeway to form two or more separate traffic streams; "Weave" = segment with provision of auxiliary lane where a diverge segment closely follows a merge segment; "Basic" = all segments that are not merge, diverge, or weaving segments.

**Table 2.1-16 SR 242 Freeway Mainline Peak Period Measures of Effectiveness**

Scenario	Measures of Effectiveness	Existing Conditions	2020 No-Build Alternative	2020 Build Alternative 1		2020 Build Alternative 2		2040 No-Build Alternative	2040 Build Alternative 1		2040 Build Alternative 2	
				Results	Net Change <sup>3</sup> from 2020	Results	Net Change <sup>3</sup> from 2020		Results	Net Change <sup>3</sup> from 2040	Results	Net Change <sup>3</sup> from 2040
North-bound AM <sup>1</sup>	Vehicle Miles of Travel (vehicle-miles)	13,240	14,440	15,350	910	15,150	710	17,790	19,060	1,270	18,750	960
	Average Travel Time (min:sec)	1:55	1:55	1:55	0	1:55	0	1:55	1:55	0	1:55	0
	Average Travel Speed (mph)	65	65	65	0	65	0	65	65	0	65	0
	Mainline Vehicle Delay (vehicle-hours)	0	0	0	0	0	0	0	0	0	0	0
	Maximum Individual Vehicle Delay (min:sec)	0	0:00	0:00	0	0:00	0	0:00	0:00	0	0:00	0
South-bound AM <sup>2</sup>	Vehicle Miles of Travel (vehicle-miles)	30,530	31,510	33,140	1,630	32,020	510	33,520	35,120	1,600	33,780	260
	Average Travel Time (min:sec)	7:16	9:19	9:54	0:35	9:57	0:38	11:19	11:21	0:02	11:28	0:09
	Average Travel Speed (mph)	21	16	15	-1	15	-1	13	13	0	13	0
	Mainline Vehicle Delay (vehicle-hours)	1,030	1,440	1,670	230	1,600	160	1,960	2,070	110	2,000	40
	Maximum Individual Vehicle Delay (min:sec)	6:37	9:11	9:17	0:06	9:16	0:05	9:21	9:39	0:18	9:49	0:28

CHAPTER 2.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES,  
AND AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Scenario	Measures of Effectiveness	Existing Conditions	2020 No-Build Alternative	2020 Build Alternative 1		2020 Build Alternative 2		2040 No-Build Alternative	2040 Build Alternative 1		2040 Build Alternative 2	
				Results	Net Change <sup>3</sup> from 2020	Results	Net Change <sup>3</sup> from 2020		Results	Net Change <sup>3</sup> from 2040	Results	Net Change <sup>3</sup> from 2040
North-bound PM <sup>1</sup>	Vehicle Miles of Travel (vehicle-miles)	27,270	28,680	30,190	1,510	29,860	1,180	31,940	33,530	1,590	33,200	1,260
	Average Travel Time (min:sec)	1:57	1:59	1:59	0	1:59	0	2:16	2:16	0	2:16	0
	Average Travel Speed (mph)	64	63	63	0	63	0	55	55	0	55	0
	Mainline Vehicle Delay (vehicle-hours)	7	20	20	0	20	0	100	100	0	100	0
	Maximum Individual Vehicle Delay (min:sec)	0:02	0:05	0:05	0	0:05	0	0:45	0:45	0	0:45	0
South-bound PM <sup>2</sup>	Vehicle Miles of Travel (vehicle-miles)	22,690	24,530	25,860	1,330	24,720	190	29,830	31,470	1,640	30,280	450
	Average Travel Time (min:sec)	2:19	2:19	2:19	0	2:19	0	2:19	2:19	0%	2:19	0%
	Average Travel Speed (mph)	65	65	65	0	65	0	65	65	0%	65	0%
	Mainline Vehicle Delay (vehicle-hours)	0	0	0	0	0	0	0	0	0%	0	0%
	Maximum Individual Vehicle Delay (min:sec)	0	0:00	0:00	0	0:00	0	0:00	0:00	0%	0:00	0%

Notes:

1. The Northbound SR 242 study segment extends between the I-680 junction and Solano Way/Grant Street off-ramp.
2. The Southbound SR 242 study segment extends between the Solano Way/Grant Street on-ramp and I-680 merge.
3. Net change is the difference between the No-Build Alternative to the Build Alternatives.

Existing pedestrian facilities within the study area include sidewalks, crosswalks, and pedestrian signals at signalized intersections. Sidewalks are generally provided on both sides of study area roadways, and intersections provide crosswalks with pedestrian-activated signals on at least one approach. Existing sidewalk width generally ranges between 6 and 8 feet within the study area. Average crosswalk spacing along Clayton Road, Willow Pass Road, Concord Avenue, and Market Street is typically over 800 feet, which provides limited crossing opportunities along the major study area arterials. Pedestrian access across SR 242 is limited to the formal pedestrian undercrossing at Market Street and Meadow Lane (the Monument Corridor Trail), and the sidewalks along Concord Avenue and Willow Pass Road.

Channelized right-turn lanes exist at all study intersections, except the intersection of Concord Avenue/Market Street/SR 242 northbound on-ramp. Providing channelized right-turn lanes encourages higher vehicle turn speeds and lengthens the pedestrian crossing distances at intersections, which decreases pedestrian comfort levels and safety.

## ENVIRONMENTAL CONSEQUENCES

### Opening Year 2020

#### *Local Roadway and Ramp Termini Operations*

#### No-Build Alternative

As shown in **Table 2.1-11**, the Concord Avenue/Commerce Avenue/SR 242 southbound ramps intersection is expected to degrade to LOS D during AM peak hour and LOS E during the PM peak hour under 2020 No-Build conditions, resulting in increased vehicle delay. The southbound SR 242 off-ramp to Concord Avenue is also expected to experience long vehicle queue length during the PM peak hour, but would be contained within the provided off-ramp queue storage capacity. The intersections at Clayton Road/Market Street/SR 242 ramps and Willow Pass Road/Market Street would operate at LOS C during the AM peak hour, and LOS D during the PM peak hour. The Willow Pass Road/Market Street intersection would degrade to LOS D during the PM peak hour when compared to existing conditions. All other study intersections are expected to operate at LOS D or better under 2020 No-Build conditions.

#### Build Alternative 1

Build Alternative 1 proposes new southbound SR 242 on- and off-ramps at Franquette Avenue, and a new northbound SR 242 on-ramp from Clayton Road. Overall, these additional ramps would shift approximately 800 vehicles away from the Concord Ave/Commerce Ave/SR 242 southbound ramps intersection.<sup>12</sup> As shown in **Table 2.1-11**, this shift in vehicles under Build Alternative 1 is

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<sup>12</sup> The volume redistribution (for both 2020 and 2040) between the existing southbound SR 242 off-ramp to Concord Avenue and the proposed southbound SR 242 off-ramp to Franquette Avenue under Build Alternative 1 was determined via the CCTA Travel Demand Forecasting Model as described in the approved SR 242/Clayton Road Interchange PA/ED: Final Travel Demand Forecasts Development Memorandum (Fehr & Peers, September 15, 2014). See **Appendix K**.

expected to address the 2020 No-Build conditions deficiencies at the Concord Avenue/Commerce Avenue/southbound SR 242 ramps intersection by decreasing the southbound SR 242 off-ramp queue length, while decreasing average vehicle delay, and serving 100 percent of the traffic demand during the AM and PM peak hours. Build Alternative 1 would also improve peak hour operations at the Concord Avenue/Commerce Avenue/southbound SR 242 ramps intersection from LOS D and LOS E to LOS C during the AM and PM peak hours, respectively. All other study intersections are expected to operate at LOS D or better under 2020 Build Alternative 1 conditions.

### Build Alternative 2

Build Alternative 2 proposes a new southbound SR 242 on- and off-ramps at Willow Pass Road, and a new northbound SR 242 on-ramp from Willow Pass Road. These additional ramps would shift approximately 800 vehicles away from the Concord Ave/Commerce Ave/SR 242 southbound ramps intersection.<sup>13</sup> As shown in **Table 2.1-11**, this shift in vehicles under would address the 2020 No-Build conditions deficiencies at the Concord Avenue/Commerce Avenue/SR 242 southbound ramps intersection by decreasing the southbound SR 242 off-ramp queue length, while decreasing average vehicle delay, and serving 100 percent of the traffic demand during the AM and PM peak hours.<sup>14</sup> **Appendix K** provides intersection demand served summary tables.

However, the placement of the new SR 242 on- and off-ramps along Willow Pass Road under Build Alternative 2 would result in new local roadway deficiencies not expected under the 2020 No-Build or Build Alternative 1 conditions. The new Willow Pass Road/SR 242 northbound on-ramp would increase the traffic volumes at the Willow Pass Road/Market Street intersection and would result in traffic queues that would back-up onto Market Street. Due to the close intersection spacing along Market Street between Clayton Road and Willow Pass Road, queues on the northbound approach to the Willow Pass Road intersection are also expected to spillback onto Clayton Road during the AM peak hour. The local roadway traffic queuing and congestion would increase the average delay at the Clayton Rd/Market Street/SR 242 ramps and Willow Pass Road/Market Street intersections, degrading operations from LOS C to LOS D at both locations during the AM peak hour.

Overall, Build Alternative 2 would worsen local roadway operations when compared to the 2020 No-Build conditions and the improvements in local circulation anticipated under 2020 Build Alternative 1 conditions. Although queues and delay are generally longer (with the exception of the queue along southbound SR 242 off-ramp to Concord Avenue) under 2020 Build Alternative 2 when compared to the No-Build and Build Alternative 1, all study intersections are expected to operate at LOS D or better during AM and PM peak hours.

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<sup>13</sup> The volume redistribution (for both 2020 and 2040) between the existing southbound SR 242 off-ramp to Concord Avenue and the proposed southbound SR 242 off-ramp to Willow Pass Road under Build Alternative 2 was determined via the CCTA Travel Demand Forecasting Model as described in the approved SR 242/Clayton Road Interchange PA/ED: Final Travel Demand Forecasts Development Memorandum (Fehr & Peers, September 15, 2014). See **Appendix K**.

<sup>14</sup> Percent demand served was identified via the micro-simulation SimTraffic models developed for the TOAR. The peak hour intersection analysis models have the capability to estimate percent demand serves as a function of intersection turning movement demand, lane capacities and traffic control (e.g., signal-controlled intersection, stop-controlled intersection, etc.) operations. See **Appendix K**.

*SR 242 Freeway Mainline Operations*

No-Build Alternative

**Table 2.1-12** presents the LOS and density (vehicles per mile per lane) for northbound SR 242 mainline operations. During the AM peak hour, northbound SR 242 is expected to operate in free-flow conditions (LOS C or better during the AM peak hour and at LOS D or better during the PM peak hour) under the 2020 No-Build scenario.

Similar to existing conditions, traffic congestion would continue to occur along southbound direction on SR 242 during the AM peak hour, when the majority of SR 242 study segments would operate at LOS F (**Table 2.1-14**) under the 2020 No-Build Alternative. The existing southbound AM peak hour bottleneck is expected to worsen at the lane drop segment just north of the I-680 merge area under 2020 No-Build conditions. Southbound SR 242 is expected to continue to operate in free-flow during the PM peak hour under 2020 No-Build conditions.

Build Alternative 1

Under Build Alternative 1, northbound SR 242 AM and PM peak period travel time and free-flow operations are expected to be the same as the 2020 No-Build conditions (**Table 2.1-12**). Vehicle miles travelled would be higher under 2020 Build Alternative 1 than the No-Build conditions because vehicles utilizing the new northbound on-ramp at Clayton Road would merge onto northbound SR 242 further south than the existing northbound on-ramp at Concord Avenue, thus increasing the freeway travel distance for those vehicles (but decreasing local street travel distance).

Under Build Alternative 1, the AM peak hour bottleneck would continue to develop on southbound SR 242 at the lane drop just north of the I-680 merge area, as described under No-Build conditions. This bottleneck would result in upstream vehicle queues that extend to the Solano Way/Grant Street interchange. The freeway segments affected by the bottleneck would operate at LOS E (along the bottleneck segment) and at LOS F (upstream of the bottleneck segment) during the AM peak hour (**Table 2.1-14**). As described above, new southbound off-ramp access at Franquette Avenue would shift about 800 vehicles from Concord Avenue southbound off-ramp. As a result, this shift would increase mainline demand between these two locations, thereby increasing VMT. In addition, Build Alternative 1 would shift about 70 vehicles from the southbound on-ramp at I-680/Willow Pass Road loop to the proposed new southbound on-ramp from Franquette Avenue under Build Alternative 1. As a result, Build Alternative 1 would increase the duration of mainline queuing during the AM peak period and decrease vehicle travel speed by 1 mph. Vehicle delay and travel time along southbound SR 242 during the AM peak hour would also increase under 2020 Build Alternative 1 conditions when compared to the No-Build. Southbound SR 242 is expected to continue to operate in free-flow during the PM peak hour under 2020 Build Alternative 1, resulting in similar operations as the No-Build Alternative.

### Build Alternative 2

In year 2020, Build Alternative 2 would have similar AM and PM peak hour mainline operating characteristics as Build Alternative 1 along northbound and southbound SR 242 (refer to **Table 2.1-12** and **Table 2.1-14**). Northbound SR 242 is expected to operate in free-flow conditions (LOS B or better) during the AM peak hour under 2020 No-Build, Build Alternative 1, or Build Alternative 2 conditions.

As summarized in **Table 2.1-16**, VMT would be higher under 2020 Build Alternative 2 conditions than the No-Build Alternative because vehicles utilizing the new northbound on-ramp at Willow Pass Road would merge onto northbound SR 242 further south than the existing on-ramp at Concord Avenue. Build Alternative 2 would have a lower VMT than Build Alternative 1 because vehicles using the proposed southbound SR 242 off-ramp at Willow Pass Road would travel a shorter distance along the mainline than compared to Build Alternative 1 (southbound off-ramp at Franquette Avenue).

Overall, study segments along southbound SR 242 mainline are expected to operate in similar LOS F congested conditions under No-Build and both Build Alternatives 1 and 2 due to the bottleneck that develops at the lane drop segment just north of the I-680 merge area during the AM peak period. Southbound SR 242 is expected to continue to operate in free-flow during the PM peak hour under 2020 Build Alternative 2, resulting in similar operations as Build Alternative 1 and the No-Build Alternative.

### *System-wide Performance*

#### Build Alternative 1

The primary difference in corridor-wide MOEs between 2020 No-Build and Build Alternative 1 conditions is VMT, as shown in **Table 2.1-16** and described above. The northbound SR 242 mainline VMT is expected to increase under Build Alternative 1 by 910 vehicle-miles during the AM peak period and 1,510 vehicle-miles during the PM peak period when compared to the No-Build Alternative. The southbound SR 242 mainline VMT is expected to increase by 1,630 vehicle-miles during the AM peak period and 1,330 vehicle-miles during the PM peak period. The change in VMT, as described above, is due to the redistribution of vehicles from the Concord Avenue ramps to the proposed Clayton Road ramps. Build Alternative 1 is expected to increase average travel time by 35 seconds, mainline vehicle delay by 230 vehicle-hours, and maximum individual vehicle delay by 6 seconds along southbound SR 242 during the AM peak period. For all other Build Alternative 1 scenarios (AM and PM northbound SR 242, and PM southbound SR 242) average travel time, mainline vehicle delay would be the same when compared to 2020 No-Build conditions.

#### Build Alternative 2

The primary difference between the 2020 No-Build and Build Alternative 2 is also VMT, as shown in **Table 2.1-16**. Under Build Alternative 2, the northbound SR 242 mainline VMT is expected to increase by 710 vehicle-miles during the AM peak period and 1,180 vehicle-miles during the PM peak period, when compared to the No-Build Alternative. The southbound SR 242 mainline VMT is

expected to increase by 510 vehicle-miles during the AM peak period and 190 vehicle-miles during the PM peak period. The change in VMT, as described above, is due to the redistribution of vehicles from the Concord Avenue ramps to the proposed Willow Pass Road ramps. For all other MOEs (i.e., travel time, speed, and vehicle delay) results are essentially the same between the Build Alternatives for all study scenarios, except the southbound direction during the AM peak period. Build Alternative 2 is expected to increase average travel time by 38 seconds, mainline vehicle delay by 160 vehicle-hours, and maximum individual vehicle delay by 5 seconds along southbound SR 242 during the AM peak period compared to 2020 No-Build conditions. Average travel time would be higher under Build Alternative 2 conditions compared to Build Alternative 1; however, higher mainline vehicle delay is anticipated under Build Alternative 1 in the southbound direction during the AM peak period.

### **Design Year 2040**

#### *Local Roadway and Ramp Termini Operations*

##### No-Build Alternative

As shown in **Table 2.1-11**, under the 2040 No-Build conditions, all of the study intersections are expected to operate at LOS D or better in both AM and PM peak hours with the following exceptions:

- Concord Avenue/Commerce Avenue/SR 242 southbound ramps intersection is expected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.
- The intersection at Clayton Road/Market Street/SR 242 ramps is expected to operate at LOS E during the AM and PM peak hours

By 2040, the Concord Avenue/Commerce Avenue/SR 242 southbound ramps intersection would be unable to accommodate increased traffic volumes during both the AM and PM peak hours. The congestion at this intersection would translate into long vehicle queue lengths along the SR 242 southbound off-ramp, some of which would spillback onto the SR 242 mainline. Similar conditions would occur during the PM peak hour. The Concord Avenue/Commerce Avenue/SR 242 southbound ramps intersection would serve 89 percent of the AM peak hour demand and 92 percent of the PM peak hour demand, which would result in high levels of vehicle delay.

**Appendix K** provides intersection demand served summary tables.

The Concord Avenue/SR 242 northbound ramp termini would serve between 93 percent and 95 percent of the AM and PM peak hour demand under No-Build conditions. The AM and PM peak hour operations at the Clayton Road/Market Street/SR 242 ramps and Concord Avenue/Commerce Avenue/SR 242 southbound ramps intersections represent expected operational deficiencies under the 2040 No-Build conditions.

The intersections at Clayton Road/Market Street/SR 242 ramps would degrade to LOS E during the AM and PM peak hours under 2040 No-Build conditions. Therefore, the anticipated delay at this

intersection would increase, but would be less severe than delays experienced at Concord Avenue described above. The intersection at Willow Pass Road/Market Street would degrade to LOS D during the AM and PM peak hours under 2040 No-Build conditions.

### Build Alternative 1

Under the 2040 Build Alternative 1 conditions, the new southbound SR 242 on- and off-ramps at Franquette Avenue and a new northbound SR 242 on-ramp from Clayton Road would shift traffic away from the Concord Ave/Commerce Ave/ SR 242 southbound ramps intersection to the new SR 242 access points. Similar to the effects seen in 2020 conditions, this shift in traffic would reduce queue length and vehicle delay anticipated at this location when compared to the No-Build Alternative.

As shown in **Table 2.1-11**, this shift in vehicles under Build Alternative 1 is expected to address the 2040 No-Build conditions deficiencies at the Concord Avenue/Commerce Avenue/southbound SR 242 ramps intersection by completely eliminating the southbound SR 242 off-ramp queue spillback onto the freeway mainline, while decreasing average delay, and serving 100 percent of the traffic demand during the AM and PM peak hours. **Appendix K** provides intersection demand served summary tables. Build Alternative 1 would also improve peak hour operations at the Concord Avenue/Commerce Avenue/southbound SR 242 ramps intersection from LOS E to LOS C during the AM peak hour, and from LOS F to LOS D during the PM peak hour. All other study intersections are expected to operate at LOS D or better under the 2040 Build Alternative 1 conditions.

### Build Alternative 2

Build Alternative 2 would generally operate the same as Build Alternative 1 at the Concord Ave/Commerce Ave/ SR 242 southbound ramps intersection. Similarly to Build Alternative 1, these additional ramps would shift traffic volumes away from the Concord Ave/Commerce Ave/SR 242 southbound ramps intersection. As shown in **Table 2.1-11**, this shift in vehicles under either Build Alternative 1 or Build Alternative 2 would address the 2040 No-Build conditions deficiencies at the Concord Avenue/Commerce Avenue/SR 242 southbound ramps intersection by completely eliminating the southbound SR 242 off-ramp queue spillback onto the freeway mainline, while decreasing average vehicle delay, and serving 100 percent of the traffic demand during the AM and PM peak hours.

However, the placement of the new SR 242 on- and off-ramps along Willow Pass Road under Build Alternative 2 would result in new local roadway deficiencies not expected under the 2040 No-Build or Build Alternative 1 conditions. The new Willow Pass Road/SR 242 northbound on-ramp would increase the traffic volumes at the Willow Pass Road/Market Street intersection and would result in traffic queue that would back-up onto Market Street. Due to the close intersection spacing along Market Street between Clayton Road and Willow Pass Road, queues on the northbound approach to the Willow Pass Road intersection are expected to spillback onto Clayton Road during the AM peak hour. The local roadway traffic queuing and congestion would increase the average delay at the Clayton Rd/Market St/SR 242 ramps and Willow Pass Rd/Market St intersections. Build

Alternative 2 would maintain LOS E operations at Clayton Road/Market Street/SR 242 ramps intersection and degrade operations from LOS D to LOS F at Willow Pass Road/Market Street intersection during the AM peak hour. Overall, Build Alternative 2 would worsen local roadway operations when compared to the 2040 No-Build conditions and the improvements in local circulation anticipated under 2040 Build Alternative 1 conditions.

#### *SR 242 Freeway Mainline Operations*

##### No-Build Alternative

**Table 2.1-13** presents the LOS and density (vehicles per mile per lane) for northbound SR 242 mainline operations. During the AM peak hour, northbound SR 242 is expected to operate in free-flow conditions (LOS C or better) under the 2040 No-Build scenario. Traffic volumes would be higher during the PM peak hour, with LOS E operations expected between I-680 and the mainline lane addition and LOS D or better operations expected north of the mainline lane addition under the 2040 No-Build conditions.

Similar to existing conditions, traffic congestion would continue to occur along southbound SR 242 during the AM peak hour, when the majority of SR 242 study segments would operate at LOS F (**Table 2.1-15**) under the 2040 No-Build Alternative. The existing southbound AM peak hour bottleneck is expected to worsen at the lane drop segment just north of the I-680 merge area under 2040 No-Build conditions. Southbound SR 242 is expected to continue to operate in free-flow during the PM peak hour under 2040 No-Build conditions.

##### Build Alternative 1

Under Build Alternative 1, northbound SR 242 is expected to continue to operate in free-flow at LOS C or better during the AM peak hour. Traffic volumes would be higher during the PM peak hour, with LOS E operations expected between I-680 and the mainline lane addition and LOS D or better operations expected north of the mainline lane addition under Build Alternative 1. Vehicle miles travelled would be higher under the 2040 Build Alternative 1 than the No-Build conditions because vehicles utilizing the new northbound on-ramp at Clayton Road would merge onto northbound SR 242 further south than the existing northbound on-ramp at Concord Avenue, thus increasing the freeway travel distance for those vehicles (but decreasing the local street travel distance).

Under Build Alternative 1, an AM peak hour bottleneck would continue to develop along southbound SR 242 at the lane drop just north of the I-680 merge area, as described under No-Build conditions. This bottleneck would result in an upstream vehicle queue that extends beyond the Solano Way/Grant Street interchange. The freeway segments affected by the bottleneck would operate at LOS E (along the bottleneck segment) and at LOS F (upstream of the bottleneck) during the AM peak hour (**Table 2.1-15**). As described above, new southbound off-ramp access at Franquette Avenue would shift about 1,100 vehicles from Concord Avenue southbound off-ramp. As a result, this shift would increase mainline demand between these two locations, thereby increasing VMT. In addition, Build Alternative 1 would shift about 90 vehicles from the southbound on-ramp at I-680/Willow Pass Road loop to the proposed new southbound on-ramp from

Franquette Avenue under Build Alternative 1. As a result of the total volume redistribution from the SR 242/Concord Avenue interchange, Build Alternative 1 would increase southbound SR 242 mainline density at the Concord Avenue southbound off-ramp and proposed off-ramp at Franquette Avenue. Accordingly, Build Alternative 1 would increase the duration of mainline queuing during the AM peak period and decrease vehicle travel speed by 1mph. Vehicle delay and travel time along southbound SR 242 during the AM peak hour would slightly increase under 2040 Build Alternative 1 when compared to the No-Build. Southbound SR 242 is expected to continue to operate at LOS D or better conditions during the PM peak hour under Build Alternative 1, with an exception. The southbound segment between the lane drop and I-680 is expected to degrade to LOS E due to the additional southbound demand, estimated to shift from the southbound I-680/Willow Pass Road loop on-ramp, to either the proposed new on-ramp from Franquette Avenue. Although the segment is expected to operate at LOS E, upstream queues are not expected to develop during the PM peak hour.

### Build Alternative 2

Build Alternative 2 would have similar AM peak hour mainline operating characteristics as Build Alternative 1 along northbound and southbound SR 242 (refer to **Table 2.1-13** and **Table 2.1-15**). Northbound SR 242 would operate at LOS E between I-680 and the mainline lane addition and at LOS D or better north of the mainline lane addition during the PM peak hour under all three study scenarios.

As summarized in **Table 2.1-16**, VMT would be higher under 2040 Build Alternative 2 conditions than the No-Build Alternative because vehicles utilizing the new northbound on-ramp at Willow Pass Road would merge onto northbound SR 242 further south than the existing northbound on-ramp at Concord Avenue. Build Alternative 2 would have a lower VMT than Build Alternative 1 because vehicles using the proposed southbound SR 242 off-ramp at Willow Pass Road would travel a shorter distance along the mainline than compared to Build Alternative 1 (southbound off-ramp at Franquette Avenue).

Overall, study segments along southbound SR 242 mainline are expected to operate in similar LOS F congested conditions under No-Build and both Build Alternatives 1 and 2 due to the bottleneck that develops at the lane drop segment just north of the I-680 merge area during the AM peak period. Southbound SR 242 is expected to continue to operate in free-flow during the PM peak hour under 2020 Build Alternative 2, resulting in similar operations as Build Alternative 1 and the No-Build Alternative.

### *System-wide Performance*

#### Build Alternative 1

As shown in **Table 2.1-16**, the primary difference in corridor-wide MOEs between the 2040 No-Build and Build Alternative 1 is VMT. In the northbound direction, SR 242 mainline VMT is expected to increase under Build Alternative 1 by 1,270 vehicle-miles during the AM peak period and 1,590 vehicle-miles during the PM peak period compared to the No-Build Alternative. In the southbound direction, SR 242 mainline VMT is expected to increase under by 1,600 vehicle-miles

during the AM peak period and 1,640 vehicle-miles during the PM peak period. The change in VMT, as described above, is due to the redistribution of vehicles from the Concord Avenue ramps to one of the proposed ramps. Average travel time, travel speed, and vehicle delay would be similar between the No-Build Alternative and Build Alternative 1 for all study scenarios (AM and PM northbound SR 242, and PM southbound SR 242), except in the southbound direction during the AM peak period. Build Alternative 1 would increase average travel time by 2 seconds, mainline vehicle delay by 110 vehicle-hours, and maximum individual vehicle delay by 18 seconds along southbound SR 242 during the AM peak period compared to the No-Build Alternative.

### Build Alternative 2

The primary difference between the 2040 No-Build Alternative and Build Alternative 2 would also be VMT. In the northbound direction, SR 242 mainline VMT is expected to increase under Build Alternative 1 by 960 vehicle-miles during the AM peak period and 1,260 vehicle-miles during the PM peak period compared to the No-Build Alternative. In the southbound direction, SR 242 mainline VMT is expected to increase by 260 vehicle-miles during the AM peak period and 450 vehicle-miles during the PM peak period. The change in VMT, as described above, is due to the redistribution of vehicles from the Concord Avenue ramps to one of the proposed ramps. For all other MOE's (i.e., travel time, speed, vehicle delay), results are similar between the No-Build and Build Alternative 2 conditions, except in the southbound direction during the AM peak period. Build Alternative 2 is expected to increase average travel time by 9 seconds, mainline vehicle delay by 40 vehicle-hours, and maximum individual delay by 28 seconds along southbound SR 242 during the AM period compared to 2040 No-Build conditions.

When compared to Build Alternative 1, Build Alternative 2 would result in lower increases in VMT; but larger increases in average travel time during the AM peak period along southbound SR 242. Build Alternative 2 would have a larger maximum individual vehicle delay compared to Build Alternative 1. With regard to travel time and maximum individual vehicle delay, Build Alternative 1 would result in somewhat more improved operational benefits compared to Build Alternative 2.

### **Pedestrian Design Features**

As listed below, Build Alternatives 1 and 2 propose improvements that would implement safer mobility conditions for pedestrians, where feasible:

- construct a new pedestrian bridge over Pine Creek on the south side of eastbound Willow Pass Road
- upgrade existing pedestrian facilities to incorporate directional curb ramps, pedestrian refuge islands, and audible pedestrian signals in compliance with ADA requirements
- incorporate pavement delineation with enhanced crosswalk markings
- install pedestrian countdown signals

- realign ramp termini square to the cross street, where feasible
- install pedestrian scale lighting upgrades at the SR 242 pedestrian undercrossing tunnel
- widen sidewalks to 10 feet minimum

These elements of the Build Alternatives would create an overall beneficial effect to pedestrian facilities in the surrounding communities. The exiting pedestrian bridge over Pine Creek on the north side of westbound Willow Pass Road would remain as is.

Concord recently initiated the preparation of a *Bicycle, Pedestrian and Safe Routes to Transit Plan* that will serve as a blueprint to help develop a transportation network. As a part of the plan, Concord will examine safety issues such as bicycle injuries, pedestrian injuries, and collisions, in order to identify locations in need of safety improvements. This information will be used to identify future improvements to Concord's non-motorized transportation infrastructure and position Concord for necessary grant funding. At this time, no additional information is available regarding updates to the planned bike routes described in **Section 2.1.1, Parks and Recreational Facilities**.

### **Temporary Construction Impacts**

#### *Pedestrian/Bikes*

Access to the Iron Horse Trail and the Monument Corridor Trail would be maintained at all times during the construction of the project. The proposed improvements would not require the acquisition or closure of these trails, and would not preclude the completion of the planned Monument Corridor Trail to Willow Pass Road.

During construction, the pedestrian undercrossing would require temporary, short-term closures. These closures would primarily occur during nighttime hours; however, the Contractor would be required to keep the undercrossing open during the day, with the exception of when the falsework/framework is being installed and removed. The undercrossing could be closed for up to one week at a time for major construction activities such as retaining wall construction for the proposed southbound loop on-ramp from Franquette Avenue. During periods of closure, users traveling from Franquette Avenue on the west side of SR 242 would be detoured approximately 3,733 feet north along Willow Pass Road, and then south along Market Street, to meet the Monument Corridor Trail at Meadow Lane. **Section 2.1.1, Parks and Recreational Facilities**, includes more construction information regarding bicycles and pedestrians. The Build Alternatives also include lighting upgrades within the Willow Lane pedestrian undercrossing to improve the safety and operation of the facility.

A TMP would be developed during the final design phase to address impacts to vehicle, bicycle, and pedestrian access during construction. Refer to **Measure COM-1**, as previously described in **Section 2.1.1, Parks and Recreational Facilities**, for more detail regarding the TMP.

### *Roadway*

As discussed in **Chapter 1.0, Proposed Project**, the Build Alternatives would be constructed in multiple stages in order to maintain existing traffic operations and minimize traffic delays caused by construction activities. A detailed stage construction and traffic handling plan will be developed during the final design phase. It is anticipated that construction of the proposed improvements would require temporary lane and shoulder closures on SR 242 and local roadways in the study area. Narrowed lanes on portions of SR 242, Willow Pass Road, Franquette Avenue, Market Street, and Clayton Road through the construction zone would be likely. Closure of Willow Pass Road would be required during the construction of the new overhead ramp structures. Such closures would be limited to off-peak commute periods when traffic volumes are minimal (e.g., midnight to 5 a.m.). During peak commute times, the existing number of traffic lanes would be maintained on SR 242, ramps, and local streets through the project construction period. Lane and street closures would be performed in accordance with Concord requirements and per the Caltrans District Highway Operation Branch's review and recommendations. Freeway traffic would have higher priority at local intersections when detours are in effect. This may be achieved by posting CHP or traffic control officers at critical intersections.

No roadway or driveway access to businesses is expected to be blocked during the construction of the project. Temporary detours on local streets may, however, be utilized with advance warning provided to affected properties.

### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Caltrans would implement a TMP with **Measure COM-1**, as previously described in **Section 2.1.1, Parks and Recreational Facilities**. No other avoidance, minimization, and/or mitigation measures are required.

### CUMULATIVE IMPACTS

The cumulative setting for traffic is equivalent to the traffic study area evaluated above. The traffic study conducted for the project utilized traffic volumes based on the CCTA Travel Demand Forecasting Model (as modified to ensure that the model accurately reflected planned and funded land-use development and transportation projects expected to be in place by 2020 and 2040). As such, the traffic study conducted for the project analyzed cumulative conditions within the study area. The future year CCTA Model used in the above analysis reflects regional land use projections consistent with ABAG Projections, as well as roadway network improvements contained in Plan Bay Area 2040.

Future traffic conditions are expected to further deteriorate the northbound and southbound SR 242 mainline, as well as at key intersections by year 2040 (refer to the *No-Build Alternative* discussions above). The Build Alternatives would improve future traffic operations on local roadways and ramp termini at several intersections within the study area. Both Build Alternatives would eliminate the congestion on the SR 242 southbound off-ramp to Concord Avenue while improving traffic operations at the Concord Avenue/Commerce Avenue/SR 242 southbound ramps

intersection. Build Alternative 1 would accommodate AM and PM peak hour traffic demand at LOS D or better conditions at all study intersections; Alternative 2 would result in LOS E or F operations while serving less than 96 percent of the demand at the Market Street intersections with Willow Pass Road and Clayton Road during the AM peak hour. Thus, the project would not contribute to a cumulative impact related to local roadway and ramp termini operations.

SR 242 mainline operations are expected to be similar with or without or with the project. Southbound SR 242 is expected to operate in congested conditions during the AM peak period under No-Build and Build Alternative conditions due to the bottleneck that develops at the lane drop segment just north of the I-680 merge. The Build Alternatives would result in a slight increase in delay along southbound SR 242 during the AM peak compared to the No-Build Alternative. Overall, the Build Alternatives result in an improvement in intersection operations as well as an improvement to off-ramp queues spilling back on to the mainline. As such, the project would not substantially contribute to a cumulative traffic impact.

## 2.1.5 VISUAL/AESTHETICS

### REGULATORY SETTING

The National Environmental Policy Act of 1969 as amended (NEPA) 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 United States Code [USC] 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions on 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.

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 [PRC] Section 21001[b]).

### State Policies and Guidelines

The Caltrans Scenic Highway Program is intended to protect and enhance the natural scenic beauty of California’s highways and adjacent corridors, through special conservation treatment. The program protects against encroachment of incompatible land uses, mitigates and minimizes development activities along the corridor, prohibits billboards, and regulates grading activity. No officially designated State Scenic Highways or highways eligible for such designation are within the project study area.<sup>15</sup>

Caltrans classified “Landscaped Freeways” are landscaped freeways with plantings that meet the State Outdoor Advertising Regulations criteria. These regulations are used in the control and regulation of outdoor advertising displays, and are not an indication of an area that should be protected as a scenic corridor.

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<sup>15</sup> Caltrans, 2012. *California Scenic Highway Program*. Available online at: [http://www.dot.ca.gov/hq/LandArch/scenic\\_highways/scenic\\_hwy.htm](http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm); last accessed: April 1, 2014.

Criteria for Landscaped Freeways include freeways with plantings within the State right-of-way that are continuous (no gaps  $\geq$  200 feet), ornamental (not functional), a least 1,000 feet long, on at least one side of the freeway, and require reasonable maintenance. As of 2013, the project corridor is a classified Landscaped Freeway.<sup>16</sup> If vegetation is removed from a classified Landscaped Freeway, it must be replaced within two years in order to maintain that classification.

## AFFECTED ENVIRONMENT

Information in this section is based on the Visual Impact Assessment (VIA) (Caltrans, 2015) approved in December 2015. The purpose of a VIA is to document potential visual impacts caused by the proposed project and propose measures to lessen any detrimental impacts that are identified. The VIA was prepared in accordance with the guidelines in the FHWA VIA for Highway Projects (FHWA, 1981). The study area for visual resources (visual resources study area) encompasses the project's viewshed, which is defined as the immediate areas in which proposed improvements would occur as well as areas that are visible from the project limits and views from off-site locations toward the project limits. The visual resources study area is determined by topography, vegetation, and viewing distance. Visual resources are identified below under state and local policies and guidelines. The visual setting section describes the types of viewer groups nearby, visual assessment units, key views, and in the visual resources study area.

### Viewer Groups

Viewer groups within the visual resources study area include commuter traffic, local traffic, goods movement traffic, bicyclists, pedestrians, residents in the surrounding homes, and employees and patrons of the commercial businesses along the project limits. These viewer groups fall into two categories: highway neighbors and highway users. In general, highway neighbors have views to the road and highway users have views from the road. Viewer sensitivity and exposure to proposed resource changes varies for each viewer group based on their level of awareness. As a result, potential visual concerns can be assumed for each viewer group in response to resource change.<sup>17</sup>

#### *Highway Neighbors*

Highway neighbors for the visual resources study area include various commercial businesses, office buildings, residences, and pedestrian/bicyclists.

Residential highway neighbors are limited to the area east of SR 242 between the southern project limits and the northbound SR 242/Clayton Road off-ramp. While several homes lie directly across Market Street from SR 242, large shrubs partially block views of the roadway, resulting in moderate

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<sup>16</sup> Caltrans, 2013. *Classified "Landscaped Freeways."* Available online at: [http://www.dot.ca.gov/hq/LandArch/lswfy/pdf/class\\_ls\\_fw\\_dec\\_2013.pdf](http://www.dot.ca.gov/hq/LandArch/lswfy/pdf/class_ls_fw_dec_2013.pdf); last accessed: April 1, 2014.

<sup>17</sup> Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration. Viewer sensitivity is a measure of the viewer's recognition of a particular object and has three attributes: activity, awareness, and local values.

exposure to SR 242. Between Meadow Lane and Clayton Road, the SR 242 corridor is elevated on an earthen berm and dominates the mid-ground views for the residents along Market Street, with shrubs and tall grasses in the foreground.

Commercial highway neighbors are exposed to views of SR 242, but views vary based on the level of existing vegetation that screen the freeway. The auto dealerships along Market Street have limited views due to intervening trees and their elevation slightly below SR 242. The commercial and office buildings along Franquette Avenue and Danzig Plaza have more direct views of SR 242; however, these buildings' associated parking lots and/or the rear sides of the properties face SR 242, limiting viewer exposure. Commercial highway neighbors have lower viewer sensitivity due to shorter duration of views and a focus on other activities.

The majority of the local roadways surrounding SR 242, within the project limits, have pedestrian facilities such as sidewalks, crosswalks, and bus stops. Many of the local roadways are also dedicated bike routes, and are frequently used as an integral part of the local transportation system. Pedestrians and bicyclists generally have a heightened exposure to a wide range of views as they are slow-moving and can look at views for a greater length of time, and may be especially close to the roadway.

#### *Highway Users*

Highway users in the visual resources study area include motorists and their passengers traveling on SR 242 and the adjacent local roadways. Highway users that are commuting to and from work on a routine, daily basis are less aware and have lower sensitivity to visual resources than the highway users that are driving to enjoy the scenic views.<sup>18</sup> 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>19</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. Motorists traveling at normal highway speeds would have a much shorter duration of view than motorists driving slowly due to congested traffic. Motorists experiencing congested traffic conditions, which is common on this part of SR 242 during regular commute hours, are likely to focus on views of the existing highway and the traffic in front of them. Motorists and passengers are more aware of views when the landscape transitions and may have higher sensitivity on longer, less routine, trips. Within the project limits, the average highway user has moderate sensitivity to views of the SR 242 corridor.

#### **Visual Setting**

The visual setting and visual quality of the study area can be described by three distinct visual assessment units. Visual assessment units are geographically discreet areas that are often separated by natural features such as bodies of water, ridges, or changes in vegetation. Each visual

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<sup>18</sup> Caltrans. Visual Character Lesson 10: Viewers. Accessed April 15, 2014 from [http://www.dot.ca.gov/hq/LandArch/via\\_training/mod\\_2/mod\\_02\\_less\\_10.htm](http://www.dot.ca.gov/hq/LandArch/via_training/mod_2/mod_02_less_10.htm)

<sup>19</sup> FHWA. 1981. *Visual Impact Assessment for Highway Projects*. Pages 69-71.

assessment unit has a certain visual character based upon its land uses and features. **Figure 2.1-8** depicts the location of these visual assessment units.

The landscape in the visual resources study area is characterized by a flat valley surrounded by rolling hills. The land use within the study area is primarily suburban. Natural land cover where present includes trees, shrubs, and grassland vegetation. Suburban land uses (man-made land cover) in the study area includes commercial and residential development, and the SR 242 corridor.

#### *Visual Assessment Unit 1*

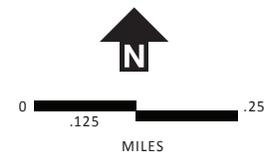
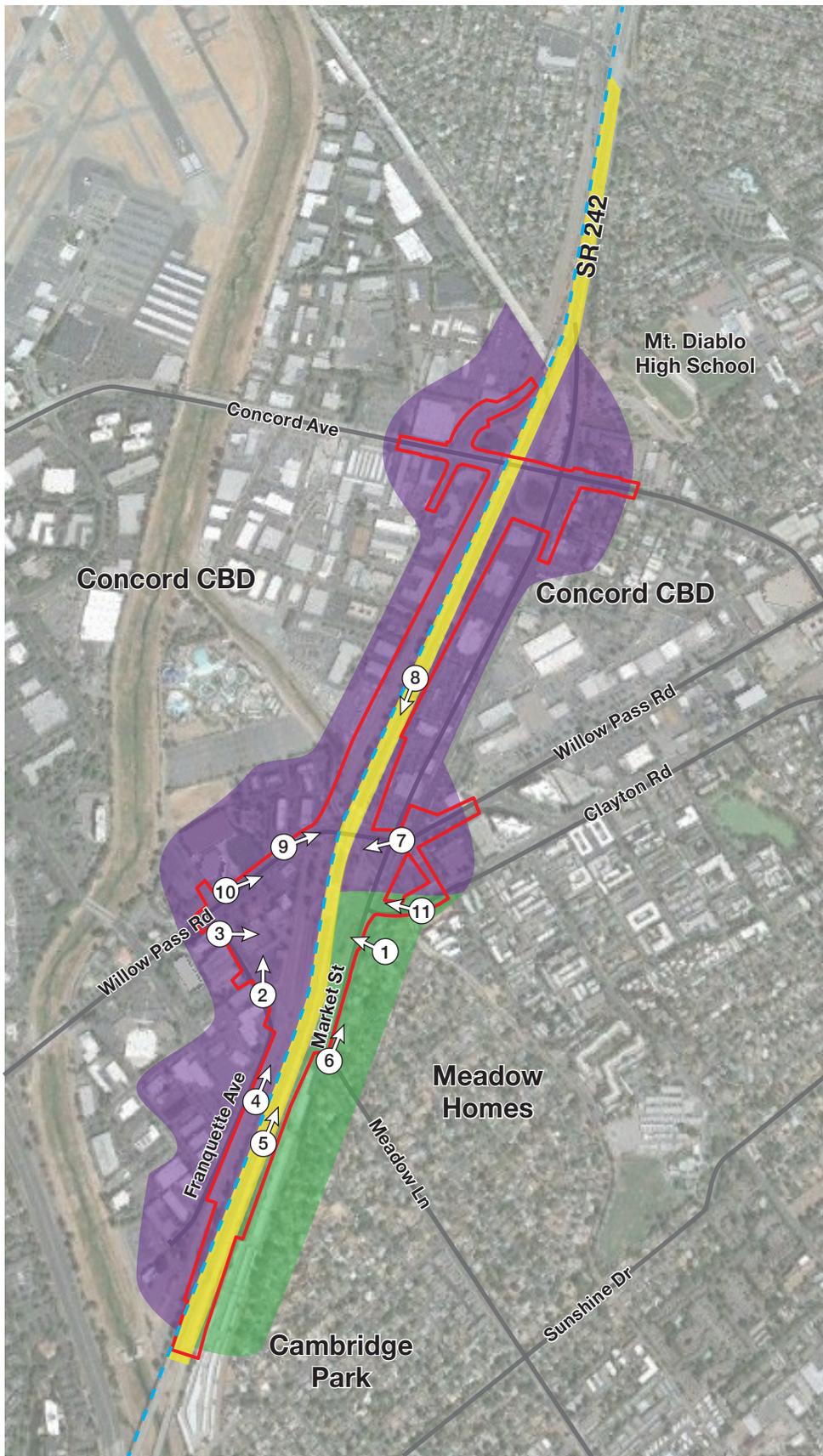
Visual Assessment Unit 1 is located on the east and west sides of SR 242. On the east side, the unit extends along northbound SR 242, from the Clayton Road off-ramp to the Concord Avenue on-ramp. On the west side, the unit extends along southbound SR 242, from the southern-most project limits (approximately 0.1 mile north of the I-680/SR 242 separation) to the RV storage lot just north of the SR 242/Concord Avenue undercrossing. Land uses within Visual Assessment Unit 1 are composed primarily of the Concord CBD and associated commercial development, as well as baseball fields at the back of Mount Diablo High School. Auto dealerships along Market Street occupy the bulk of the east side of this visual assessment unit. There are several large multi-story office buildings along Willow Pass Road located in the western part of Visual Assessment Unit 1. The EBMUD easement runs parallel to southbound SR 242, between the State right-of-way and the commercial development, traversing the entire length of the west side of this unit. Travelers in this visual assessment unit experience views of the surrounding urban landscape, including the auto dealerships, multi-lane roadways, tall trees, and multi-story commercial buildings. There are very distant views of the surrounding sparsely developed hills to the west and south when not blocked by buildings or trees.

The existing visual character of Visual Assessment Unit 1 is dominated by commercial buildings and landscaping that contributes to the overall urban character of the area. The multi-story office buildings add vertical lines to the predominantly flat character of this unit. Existing trees and vegetation adds diversity of both texture and color when contrasted with the roadway and buildings. In the eastern part of this unit, the auto dealerships also increase diversity. Wide roadways and mostly one-story buildings allow the open sky to dominate this area.

Such landscapes are common throughout the region and, therefore, the visual quality of the area is not particularly distinct or memorable for viewers, leading to moderate vividness. The overall visual quality rating for Visual Assessment Unit 1 is moderate.

#### *Visual Assessment Unit 2*

Visual Assessment Unit 2 is located from the southern-most project limits to the northbound SR 242/Clayton Road off-ramp, on the east side of SR 242. This unit is composed of the Cambridge Park and Meadow Homes residential neighborhoods. There is a large self-storage complex between the Cambridge Park neighborhood and northbound SR 242. Views in Visual Assessment Unit 2 include large stands of trees lining the residential streets, single-family homes, and two-lane roads, mostly without sidewalks. As in Visual Assessment Unit 1, there are periodic views of the very distant hills to the southwest.



- Legend**
- Project Limits
  -  Viewpoint
  - █ Visual Assessment Unit 1
  - █ Visual Assessment Unit 2
  - █ Visual Assessment Unit 3
  - - - EBMUD Mokelumne Aqueduct

Visual Assessment Units

Figure **2.1-8**

The existing visual character of Visual Assessment Unit 2 is dominated by the bright green of the large trees that line the residential streets and turf lawns in front of most homes. This prominent vegetation and the lack of sidewalks along the two-lane roads contribute a more rural character than an average suburban neighborhood in region, especially in the Cambridge Park neighborhood. The overall visual quality rating for Visual Assessment Unit 2 is moderate.

### *Visual Assessment Unit 3*

Visual Assessment Unit 3 includes the SR 242 travel lanes extending from the southern-most project limits to the northern-most project limits (0.6 mile north of Concord Avenue undercrossing). SR 242 is lined by trees, shrubs, tall grasses, and bare soil/gravel. Northbound motorists along this corridor have views of the self-storage units, Market Street, a few residences, auto dealership lots, and multi-story commercial buildings. Undeveloped hills are visible to the east as northbound motorists approach the Concord Avenue undercrossing. In the southern part of this unit, views are partially screened by vegetation, except around the Clayton Road exit and the Concord Avenue undercrossing. In the northern part of the unit, there are soundwalls running along the northbound and southbound outside travel lanes from Concord Avenue to Grant Street/Solano Way. Southbound motorists have similar views, but the EBMUD right-of-way is more prominent along the western side of SR 242. Southbound motorists also have views of the hills to the south and west, especially when crossing over Concord Avenue and Willow Pass Road.

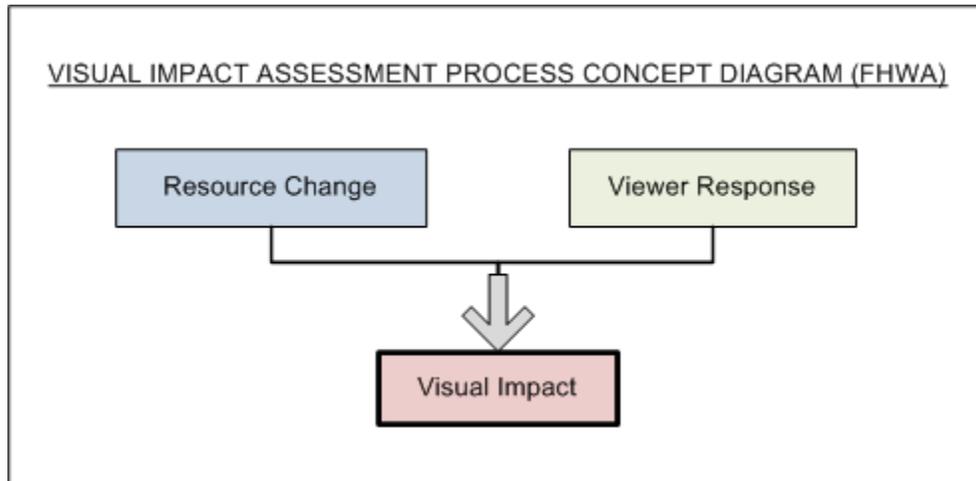
Additionally, southbound SR 242 is elevated near the southern-most project limits, so southbound motorists have views over the treetops and self-storage units of the Cambridge Park neighborhood. There are six overhead roadway signs in the northbound direction, and three in the southbound direction. The overall visual quality rating for Visual Assessment Unit 3 is moderate-low.

## ENVIRONMENTAL CONSEQUENCES

### **Resource Change**

The visual impacts of project alternatives are determined by assessing the visual resource change due to the project and predicting viewer response to that change. Visual resource change is the change in visual character and change in visual quality. The first step in determining visual resource change is to assess the compatibility of the proposed project with the visual character of the existing landscape. The Federal Highway Administration's (FHWA) Method of Visual Resource Analysis is used to determine visual character and visual quality. As part of this process, vividness, intactness and unity of the viewpoint were each given a narrative rating. These qualitative scores were averaged to determine an overall visual quality score. The second step was to compare the visual quality of the existing resources with the projected visual quality after the project is constructed.

The viewer response to the project incorporates the viewer exposure and viewer sensitivity to the study area. The resulting level of visual impact is determined by combining the severity of resource change with the degree to which people are likely to oppose the change. A generalized visual impact assessment process is illustrated in the diagram below. **Table 2.1-17** below provides a reference for determining levels of visual impact by combining resource change and viewer response.



**Table 2.1-17 Visual Impact Ratings Using Viewer Response and Resource Change**

		Viewer Response				
		Low (L)	Moderate-Low (ML)	Moderate (M)	Moderate-High (MH)	High (H)
Resource Change	Low (L)	L	ML	ML	M	M
	Moderate-Low (ML)	ML	ML	M	M	MH
	Moderate (M)	ML	M	M	MH	MH
	Moderate-High (MH)	M	M	MH	MH	H
	High (H)	M	MH	MH	H	H

**Viewpoint Selection**

Eleven viewpoints were selected to represent existing views from the visual resources study area. These viewpoints best represent the visual character and quality and/or the unique visual resources of each Visual Assessment Unit, respectively. There are six viewpoints in Visual Assessment Unit 1, three in Visual Assessment Unit 2, and two in Visual Assessment Unit 3. Seven visual simulations were prepared to represent the future visual conditions under the Build Alternatives at four locations.

The visual simulations of the Build Alternatives were prepared in locations where the project components are anticipated to result in a moderate level of change to the existing visual setting, or where viewers are especially sensitive, such as the residences along Market Street and viewer groups on Willow Pass Road. The vegetation assumed after the construction of the Build Alternatives is based on conceptual landscaping plans and may not be planted as shown in the visual simulations presented in this section. The locations of the visual simulations are generally representative of the study area. The visual impact for each of the viewpoints is determined by combining the viewer response and the resource change, as explained in the following discussion. Engineering layouts of the Build Alternatives are included in **Appendix G**.

## **Build Alternative 1**

### *Visual Assessment Unit 1*

#### Resource Change

The majority of the interchange and local roadway improvements under Build Alternative 1 would occur within Visual Assessment Unit 1. The most potentially visually obtrusive components of the improvements would be the elevated ramp structures on either side of the existing SR 242 overpass: 1) the proposed southbound on- and off-ramp structures at Franquette Avenue on the west side of SR 242, and 2) the proposed northbound on-ramp structure at Clayton Road on the east side of SR 242. Approximately 273 trees would be removed within Visual Assessment Unit 1.

#### West of SR 242

On the west side of SR 242, the new southbound on- and off-ramps at Franquette Avenue would be constructed over the currently undeveloped EBMUD property occupied by the Mokelumne Aqueduct and portions of several commercial properties. Build Alternative 1 would result in two buildings being displaced for the construction of the new Franquette Avenue ramps. **Figure 2.1-9** includes a visual simulation of the intersection of the proposed ramps at Franquette Avenue under Build Alternative 1. As shown in this visual simulation, the ramp structures are not prominent features from the viewpoint. Due to the angle of Franquette Avenue, the remaining commercial development, and intervening trees, these elevated ramp structures would only be visible from the rear side of an office building with extremely limited views from a few narrow windows at 1441 Franquette Avenue, and the associated parking structure, looking directly east towards the freeway.

The southbound SR 242 off-ramp would require an elevated bridge structure over Pine Creek and Willow Pass Road that would descend to Franquette Avenue at a height equal to or lower than the existing SR 242/Willow Pass Road bridge structure. **Figure 2.1-10** depicts the view of the bridge structure from eastbound Willow Pass Road. Build Alternative 1 would remove several mature trees on the slopes along southbound SR 242, reducing the vividness of the area as a result of increased man-made structures. No work is proposed on the existing wooden pedestrian bridge, but the new pedestrian path on the eastbound side proposes safety lighting and safety fencing.

East of SR 242

On the east side of SR 242, a new northbound on-ramp would be constructed at Clayton Road that would require an elevated bridge structure over Pine Creek and Willow Pass Road. This bridge structure would be constructed at a height equal to or lower than the existing SR 242/Willow Pass Road bridge structure and would be consistent with the existing freeway height and style.

The majority of the northbound on-ramp would be constructed over the undeveloped hillside of the SR 242 corridor, requiring the removal of several mature trees and shrubs along the slope behind the car dealership and the construction of a retaining wall that would range between 5 and 22 feet in height depending on the slope. The new Clayton Road ramps under Build Alternative 1 would increase the amount of man-made features in this area. **Figure 2.1-11** depicts the view of the proposed ramps from westbound Willow Pass Road.

Viewer Response

On the west side of SR 242 near Franquette Avenue, the two buildings with the most direct views of the new Franquette Avenue ramps are the rear side of an office building at 1441 Franquette Avenue, and its associated parking structure. Views of SR 242 are mostly from the parking lots where not a significant amount of time is spent. Viewers from the parking structure are performing a routine activity with low awareness of views outside of the parking areas, while those in the office building have low exposure due to the lack of windows.

On the east side of SR 242, patrons and employees of the auto dealerships would notice the new retaining wall and tree removal associated with the new northbound SR 242 on-ramp at Clayton Road and feel the increased dominance of the freeway. Patrons would have limited and/or brief views of SR 242 when they are car shopping, during which they are focused on their purchase with decreased awareness of the highway. Patrons would only visit the car dealership on an occasional basis; employees would be focused on their job responsibilities.

Users of the Park-and-Ride lot at Clayton Road would have more up-close views of the new northbound SR 242 on-ramp and retaining wall, because the trees that partially screen the existing elevated SR 242 highway would be removed. However, most users of this Park-and-Ride lot would be focused on parking and walking to their transit stops; and would have decreased awareness of the highway.

Pedestrians and bicyclists along Willow Pass Road would have views of the new overhead ramp structures associated with the new northbound and southbound on- and off-ramps, retaining walls, and vegetation removal. On Willow Pass Road, the new southbound off-ramp structure (leading to Franquette Avenue) would blend into the existing freeway height and style of SR 242. However, the pedestrians and bicyclists would feel an increase in freeway visual dominance in this location as a result of Build Alternative 1, particularly when walking along the pedestrian wooden bridge over Pine Creek.

While changes under Build Alternative 1 would result in more man-made features, the SR 242 freeway would continue to be the dominant visual feature in the urban area. Therefore, the project would generally continue to be consistent with the existing urban setting and not adversely affect

the key elements of visual character of the area. Overall, viewer response is not expected to be adverse. The visual quality of Visual Assessment Unit 1 would be moderate-low. The visual quality/resource change for Visual Assessment Unit 1 is summarized in **Table 2.1-18**.

**Table 2.1-18 Resource Change from Build Alternative 1 in Visual Assessment Unit 1**

Alternative	Vividness	Intactness	Unity	Overall Visual Quality	Resource Change
<b>Existing</b>	Moderate	Moderate	Moderate	Moderate	N/A
<b>Build Alternative 1</b>	Moderate-Low	Moderate-Low	Moderate-Low	Moderate-Low	Moderate-High
<b>No-Build Alternative</b>	No Change	No Change	No Change	No Change	No Change

*Visual Assessment Unit 2*

Resource Change

Build Alternative 1 would widen the existing SR 242 off-ramp to Clayton Road within its current alignment, resulting in little visual change to the ramp. Vegetation removal would occur between the widened off-ramp and Market Street and approximately 26 trees would be removed. Build Alternative 1 would also widen the existing pedestrian sidewalks along southbound Market Street.

The new northbound SR 242 on-ramp at Clayton Road would start at-grade from Market Street and travel up to the SR 242 mainline behind the Park-and-Ride lot. The tree removal and other visual changes of the new ramp structure are discussed under Visual Assessment Unit 1. However, the portion of the at-grade ramp at Clayton Road is located within Visual Assessment Unit 2, and would be visible to motorists and the animal hospital on the corner of Market Street and Clayton Road.

While these improvements would result in increased man-made land cover, the changes would be consistent with the urban character of the existing roadway and would have little effect on the visual quality of Visual Assessment Unit 2. **Figure 2.1-12** illustrates the potential changes to the visual character of the area from the residences along Market Street.

Viewer Response

Proposed changes in Visual Assessment Unit 2 resulting from Build Alternative 1 would be minor. Residences and people traveling on Market Street and Clayton Road within this unit would notice the new northbound SR 242 on-ramp at Clayton Road, but the elevated portion of this new ramp would be too far away to have an impact. The backdrop of the visual setting would continue to be the existing elevated SR 242 freeway. Additionally, the residences in this unit already have partial screening in place with trees or fences to block the existing roadway visual conditions. Therefore, viewers would have a moderate-low viewer response to Build Alternative 1 in Visual Assessment Unit 2. The visual quality/resource change for Visual Assessment Unit 2 is summarized in

**Table 2.1-19.**



Existing View from Franquette Avenue looking north



Visual Simulation of Build Alternative 1

*Note: Mature landscaping shown. Depiction is based on conceptual landscaping plans and may not be planted as shown.*



Existing View from Willow Pass Road near looking east



Visual Simulation of Build Alternative 1

*Note: Mature landscaping shown. Depiction is based on conceptual landscaping plans and may not be planted as shown.*



Existing View from Willow Pass Road near Market Street looking northwest



Visual Simulation Build Alternative 1

*Note: Mature landscaping shown. Depiction is based on conceptual landscaping plans and may not be planted as shown.*

**Table 2.1-19 Resource Change from Build Alternative 1 in Visual Assessment Unit 2**

Alternative	Vividness	Intactness	Unity	Overall Visual Quality	Resource Change
<b>Existing</b>	Moderate-High	Moderate-Low	Moderate	Moderate	N/A
<b>Build Alternative 1</b>	Moderate-High	Moderate-Low	Moderate-Low	Moderate-Low	Low
<b>No-Build Alternative</b>	No Change	No Change	No Change	No Change	No Change

*Visual Assessment Unit 3*

Resource Change

Construction of the southbound auxiliary lanes and on- and off-ramps under Build Alternative 1 would widen the SR 242 corridor for motorists along the highway. Build Alternative 1 would remove vegetation along the southbound shoulder, from midway between the southern project limits and Clayton Road to just north of Willow Pass Road; and along the northbound shoulder, from south of Clayton Road to just north of Concord Avenue. Removing vegetation along the SR 242 travel lanes would not substantially alter the urban character of the freeway corridor; however, it would slightly decrease the visual quality within this unit.

The amount of roadside vegetation that would ultimately be removed by Build Alternative 1 would be determined during final project design and serve as the basis for determining the amount of replacement planting to be provided by the project. Planting to be removed would be quantified by the acre for dense mass planting; by the mile or linear foot for roadside screen planting; and by the plant for scattered planting. Existing landscaping and other roadside vegetation removed by the project would be replaced where proper setback exists and where feasible per Caltrans policy.

Visual Assessment Unit 3 is a classified Landscaped Freeway. In order to prevent indirect visual impacts from the declassification of the Landscaped Freeways, the landscape plans prepared during the final design phase of the project would incorporate certain specifications for replacement landscaping in this area, such that the criteria for the Landscaped Freeway would be maintained (see *Avoidance, Minimization, and/or Mitigation Measures*). Based on the preliminary designs for Build Alternative 1 improvements, the project is not anticipated to affect the Landscaped Freeways classification within Visual Assessment Unit 3.

A total of six overhead sign structures are proposed along SR 242 under Build Alternative 1; four existing guide signs would be replaced, and two new signs are being proposed. The overhead sign changes would not have an impact, as they are in keeping with the existing visual quality of the unit. Given the existing urban context of the area, additional lighting infrastructure, as part of the project, would not introduce substantial new sources of light to this area.

Viewer Response

Motorists in Visual Assessment Unit 3 would primarily be performing a routine task with their attention focused on the road and cars around them. Passengers would likely have a heightened awareness of a wide range of views while traveling, since they are not focused on driving responsibilities. The vegetation removal would result in highway users experiencing less contrast between the man-made and natural elements. Southbound views of the open sky and distant mountains are currently framed by trees in the existing conditions; Build Alternative 1 would expose motorists to more open views of the City’s urban landscape of office buildings and surrounding roadways, as well as the views of distant mountains. Replacement plantings would occur in some locations, but would take several years for the trees to regain the same level of maturity as the existing environment.

Given the low viewer sensitivity of motorists on SR 242, this decline in visual quality would not substantially affect viewer response. Therefore, highway users would have a moderate-low response to changes within Visual Assessment Unit 3. The visual quality/resource change for Visual Assessment Unit 3 is summarized in **Table 2.1-20**.

**Table 2.1-20 Resource Change from Build Alternative 1 in Visual Assessment Unit 3**

<b>Alternative</b>	<b>Vividness</b>	<b>Intactness</b>	<b>Unity</b>	<b>Overall Visual Quality</b>	<b>Resource Change</b>
<b>Existing</b>	Moderate	Moderate-Low	Moderate-Low	Moderate-Low	N/A
<b>Build Alternative 1</b>	Moderate-Low	Low	Moderate-Low	Low	Moderate-Low
<b>No-Build Alternative</b>	No Change	No Change	No Change	No Change	No Change

**Build Alternative 2**

*Visual Assessment Unit 1*

Resource Change

The majority of the interchange and local roadway improvements under Build Alternative 2 would occur within Visual Assessment Unit 1. The most potentially visually obtrusive components of the improvements would be 1) the proposed southbound on- and off-ramp structures at Willow Pass Road on the west side of SR 242, and 2) the proposed northbound on-ramp structure at Willow Pass Road on the east side of SR 242. Approximately 245 trees would be removed within Visual Assessment Unit 1.



Existing View from Belmont Road at Market Street looking west



Visual Simulation of Build Alternatives 1 and 2

*Note: Mature landscaping shown. Depiction is based on conceptual landscaping plans and may not be planted as shown.*

**Visual Simulation of Viewpoint 1 for Build Alternatives 1 and 2**

Figure

**2.1-12**

West of SR 242

On the west side of SR 242, the southbound SR 242 off-ramp would require an elevated bridge structure over Pine Creek that would descend to ground level to Willow Pass Road (depicted in **Figure 2.1-13**). The grade of the southbound SR 242 off-ramp at Willow Pass Road would be gradual and blend into the existing roadway topography. The additional paved surfaces associated with the new southbound off-ramp and an additional retaining wall (4 to 11 feet in height depending on slope) would increase dominance of man-made features in this area and would require removal of mature trees near Pine Creek, on the slope adjacent to the southbound SR 242 travel lanes. An additional retaining wall/safety barrier (4 feet in height) would be located on the right edge of the pavement of the southbound off-ramp. Replacement shrubs and landscaping would be planted between the new ramp and the freeway, but would take many years to reach the same mature status as the trees in the existing environment. The southbound off-ramp under Build Alternative 2 would open up long-range views of SR 242 and the distant mountain ranges in the backdrop. No work is proposed on the existing wooden pedestrian bridge along westbound Willow Pass Road. However, a new pedestrian path would be constructed in the eastbound direction of Willow Pass Road, and would include additional safety lighting and fencing. A crosswalk and street light would be provided for pedestrians to safely cross at the new southbound off-ramp terminus with Willow Pass Road.

East of SR 242

**Figure 2.1-14** depicts the view of the SR 242 corridor from westbound Willow Pass Road. The new northbound SR 242 on-ramp proposed behind the auto dealership would require a 4- to 10-foot tall retaining wall leading up to the SR 242 mainline. A concrete barrier (up to 3 feet tall) would also be located on the right edge of pavement of the northbound SR 242 on-ramp for safety purposes. Under Build Alternative 2, the majority of northbound SR 242 on-ramp would be constructed over the undeveloped, but vegetated, hillside of the SR 242 corridor; removing several mature trees. Although the existing SR 242/Willow Pass Road bridge structure would continue to have visual dominance in this area, the new northbound on-ramp at Willow Pass Road would increase the amount of man-made features for people traveling westbound on Willow Pass Road.

Local roadway widening and pavement restriping would result in a consistent look of other roadways in the Concord area, thus would generally not affect the key elements of the visual character. However, such widening would remove the existing trees that line Willow Pass Road along the Park and Shop and Auto Dealership properties. Additionally, a portion of hardscape and accent planting for the Park and Shop center at Willow Pass Road and Market Street would be modified and/or removed due to the addition of the dedicated northbound on-ramp lane. Overall, local roadway widening and pavement restriping would result in a consistent look of the roadways that connect the Concord CBD, but would generally not affect the key elements of the visual character in the area.

Viewer Response

Local motorists would continue to experience views of the SR 242 roadway and surrounding development. Although the changes under Build Alternative 2 would be noticeable to motorists, they would not be sensitive to such changes because they travel on the local roadways on a regular

basis. The backdrop of the visual setting would continue to be the existing SR 242 freeway that expresses low visual unity. Changes under Build Alternative 2 would continue to be consistent with the existing urban setting.

On the east side of SR 242, the widening of Willow Pass Road for the new northbound on-ramp would remove trees in the immediate foreground views and replace them with more paved areas. Patrons and employees of the auto dealerships would notice the new northbound on-ramp and retaining wall and tree removal adjacent to the SR 242 mainline. While these viewers would likely feel an increase in man-made features, the new northbound on-ramp under Build Alternative 2 would not require any new overhead structures. Patrons would be less sensitive to the resource change because visiting the car dealership would not be a regular everyday occurrence. These individuals would have limited and/or brief views of SR 242 when they are car shopping, during which they are focused on their purchase with decreased awareness of the highway. Furthermore, employees would be focused on job responsibilities and assisting patrons.

Viewers at the Park-and-Ride lot at Clayton Road would be able to see the northbound on-ramp, retaining wall, and tree removal at Willow Pass Road if they looked across the street, to the north. However, most users of this lot would be focused on parking and walking to the nearest transit stops on Market Street, and would have decreased awareness of the highway.

Pedestrians and bicyclists along Willow Pass Road would have views of the new northbound and southbound on- and off-ramps, retaining walls, and vegetation removal. Under Build Alternative 2, the new ramps at Willow Pass Road would not travel overhead at Willow Pass Road. Instead the slope of the new ramps would be gradual and blend into the existing topography of the elevated SR 242 corridor. The backdrop of the visual setting would continue to be the existing SR 242 freeway that expresses low visual unity. While changes under Build Alternative 2 would reduce the amount of vegetation by introducing more man-made features, the SR 242 freeway would continue to be the dominant visual feature in the urban area. Therefore, the project would generally continue to be consistent with the existing urban setting and not adversely affect the key elements of visual character of the area.

While the addition of the new ramp structures and widened roadways under Build Alternative 2 would change the visual appearance of Visual Assessment Unit 1, the main elements of visual character of the area would remain intact and viewer response is not expected to be adverse. **Table 2.1-21** summarizes the visual quality/resource change for Visual Assessment Unit 1, by Build Alternative. Viewer response to changes in visual quality in Visual Assessment Unit 1 would be moderate.

#### *Visual Assessment Unit 2*

#### Resource Change

Build Alternative 2 would widen the existing SR 242 off-ramp to Clayton Road within its current alignment, resulting in little visual change to the ramp. Vegetation removal would occur between the widened off-ramp and Market Street and would remove approximately 26 trees. Build Alternative 2 would also widen the existing pedestrian sidewalks along southbound Market Street.



Existing View from Willow Pass Road near looking northeast



Visual Simulation of Build Alternative 2

*Note: Mature landscaping shown. Depiction is based on conceptual landscaping plans and may not be planted as shown.*



Existing View from Willow Pass Road near Market Street looking northwest



Visual Simulation of Build Alternative 2

*Note: Mature landscaping shown. Depiction is based on conceptual landscaping plans and may not be planted as shown.*

**Table 2.1-21 Resource Change from Build Alternative 2 in Visual Assessment Unit 1**

Alternative	Vividness	Intactness	Unity	Overall Visual Quality	Resource Change
Existing	Moderate	Moderate	Moderate	Moderate	N/A
Build Alternative 2	Moderate-Low	Moderate	Moderate	Moderate	Moderate
No-Build Alternative	No Change	No Change	No Change	No Change	No Change

While these improvements would result in increased man-made land cover, the changes would be consistent with the urban character of the existing roadway and would have little effect on the visual quality of Visual Assessment Unit 2. **Figure 2.1-12** illustrates the potential changes to the visual character of the area from the residents along Market Street.

Viewer Response

Proposed changes in Visual Assessment 2 resulting from Build Alternative 2 would be minor. Residences and people traveling on Market Street and Clayton Road within this unit would notice the new northbound SR 242 on-ramp at Willow Pass Road, but the elevated portion of this new ramp would be too far away to have an impact. The backdrop of the visual setting would continue to be the existing elevated SR 242 freeway. Additionally, the residences in this unit already have partial screening in place with trees or fences to block the existing roadway visual conditions. Therefore, viewers would have a moderate-low viewer response to Build Alternative 2 in Visual Assessment Unit 2. The visual quality/resource change for Visual Assessment Unit 2 is summarized in **Table 2.1-22**.

*Visual Assessment Unit 3*

Resource Change

Build Alternative 2 would remove a similar amount of vegetation as Build Alternative 1 because roadway widening and project components would be comparable. Removing vegetation along the SR 242 travel lanes would not substantially alter the urban character of the freeway corridor; however, it would slightly decrease the visual quality within this unit.

The amount of roadside vegetation that would ultimately be removed by Build Alternative 2 would be determined during final project design and serve as the basis for determining the amount of replacement planting to be provided by the project. Planting to be removed would be quantified by the acre for dense mass planting; by the mile or linear foot for roadside screen planting; and by the plant for scattered planting. Existing landscaping and other roadside vegetation removed by the project would be replaced where proper setback exists and where feasible per Caltrans policy.

**Table 2.1-22 Resource Change from Build Alternative 2 in Visual Assessment Unit 2**

Alternative	Vividness	Intactness	Unity	Overall Visual Quality	Resource Change
Existing	Moderate-High	Moderate-Low	Moderate	Moderate	N/A
Build Alternative 2	Moderate-High	Moderate-Low	Moderate	Moderate	Low
No-Build Alternative	No Change	No Change	No Change	No Change	No Change

Visual Assessment Unit 3 is a classified Landscaped Freeway. In order to prevent indirect visual impacts from the declassification of the Landscaped Freeways, the landscape plans prepared during the final design phase of the project would incorporate certain specifications for replacement landscaping in this area, such that the criteria for the Landscaped Freeway would be maintained (see *Avoidance, Minimization, and/or Mitigations Measures*). Based on the preliminary designs for the Build Alternative 2 improvements, the project is not anticipated to affect the Landscaped Freeways classification within Visual Assessment Unit 3.

A total of seven overhead sign structures are proposed along SR 242 under Build Alternative 2; five existing guide signs would be replaced, and two new signs are being proposed. The overhead sign changes would not have an impact, as they are in keeping with the existing visual quality of the unit. Given the existing urban context of the area, additional lighting infrastructure, as part of the project, would not introduce substantial new sources of light to this area.

Viewer Response

Motorists in Visual Assessment Unit 3 would primarily be performing a routine task with their attention focused on the road and cars around them. Passengers would likely have a heightened awareness of a wide range of views while traveling, since they are not focused on driving responsibilities. The vegetation removal would result in highway users experiencing less contrast between the man-made and natural elements. Southbound views of the open sky and distant mountains are currently framed by trees in the existing conditions; Build Alternative 2 expose motorists to more views of the City’s urban landscape of office buildings and surrounding roadways, as well as new views of distant mountains. Replacement plantings would occur in some locations, but would take several years for the trees to regain the same level of maturity as the existing environment.

Given the low viewer sensitivity of commuters, however, this decline in visual quality would not substantially affect viewer response. Therefore, highway users would have a moderate-low response to changes within Visual Assessment Unit 3. The visual quality/resource change for Visual Assessment Unit 3 is summarized in **Table 2.1-23**.

**Table 2.1-23 Resource Change from Build Alternative 2 in Visual Assessment Unit 3**

Alternative	Vividness	Intactness	Unity	Overall Visual Quality	Resource Change
Existing	Moderate	Moderate	Moderate	Moderate	N/A
Build Alternative 2	Moderate-Low	Low	Moderate-Low	Low	Moderate-Low
No-Build Alternative	No Change	No Change	No Change	No Change	No Change

**Summary of Visual Impacts**

The most noticeable project components would include elevated and overhead ramp structures; retaining walls, and removal of existing highway planting. Pedestrians, bicyclists, residences, and patrons at nearby commercial businesses would feel an increased level of freeway dominance in areas where new overhead ramps are proposed and vegetation is removed. The backdrop of the existing visual setting would continue to be the existing SR 242 freeway that expresses low visual unity. While changes under Build Alternatives 1 and 2 would result in more man-made features and less vegetation, the SR 242 freeway would continue to be the dominant visual feature in the urban area. Therefore, the project would generally continue to be consistent with the existing urban setting and not adversely affect the key elements of visual character of the area. The project would not substantially alter scenic vistas or scenic resources, and would not substantially degrade the existing visual character or quality of the area. **Table 2.1-24** summarizes the visual impacts for the Build and No-Build Alternatives and compares the narrative ratings for visual resource change and viewer response for each Visual Assessment Unit.

**Table 2.1-24 Summary of Visual Impacts**

Unit	Build Alternative 1			Build Alternative 2			No-Build Alternative		
	Resource Change	Viewer Response	Visual Impact	Resource Change	Viewer Response	Visual Impact	Resource Change	Viewer Response	Visual Impact
1	Moderate-High	Moderate-Low	Moderate	Moderate	Moderate	Moderate	No Change	No Change	No Change
2	Low	Moderate-Low	Moderate-Low	Low	Moderate-Low	Moderate-Low	No Change	No Change	No Change
3	Moderate-Low	Moderate-Low	Moderate-Low	Moderate-Low	Moderate-Low	Moderate-Low	No Change	No Change	No Change

**Temporary Construction Impacts**

All viewers would experience temporary visual impacts as a result of construction. Short-term impacts would add visual intrusion and disturbances to the continuous line of the corridor and would reduce the intactness and unity of the visual resources in the visual resources study area.

As construction equipment and machinery would be stationed at several locations within the project limits, temporary sources of light and glare would be added to the Visual Assessment Units during the construction phase. However they would be minimized through use of standard construction equipment and protocol and appropriate light and glare screening measures. Temporary visual effects from the construction of the Build Alternatives would be typical of any major highway improvement project, and are not considered to be substantial.

### **No-Build Alternative**

The No-Build Alternative would not change existing conditions; therefore, it would not have any effect on visual resources. The visual quality of the visual resources study area would remain the same.

### **AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES**

Caltrans and the FHWA mandate that a qualitative/aesthetic approach should be taken to reduce visual quality loss in the visual resources study area. Offsetting adverse impacts addressed in visual assessment unit analyses and summarized in the previous section would consist of adhering to the following design requirements for Build Alternatives 1 and 2 in cooperation with the Caltrans District Landscape Architect:

**Measure VIS-1:** Existing landscaping and other roadside vegetation removed by the project will be replaced where proper setbacks exist and where feasible per Caltrans policy. Replacement planting would be accomplished as a separate contract, funded from the parent roadway contract, and would include a three-year plant establishment period. Landscape plans shall be developed during the final design phase and be approved by Caltrans. The quantity of roadside vegetation that would ultimately be removed by the project will be determined during final design and serve as the basis for determining the amount of replacement planting to be provided by the project.

**Measure VIS-2:** Because this segment of SR 242 is a Classified Landscaped Freeway, all replacement planting must be planted such that the criteria for the Landscaped Freeway will be maintained. In these areas, planting must be continuous (no gaps  $\geq$  200 feet), ornamental (not functional), at least 1,000 feet long, on at least one side of the freeway, and require reasonable maintenance. In order to maintain classification as a Landscape Freeway, any removed highway plantings would be replaced within two years after the project is constructed.

**Measure VIS-3:** Vacant areas under new ramp bridges and adjacent freeway bridges will be fenced off, where feasible. Other measures such as brush removal and placement of larger landscaping space-fillers, such as boulders, may also be considered in the final design.

**Measure VIS-4:** To reduce the visual impact of new retaining walls, aesthetic treatments consisting of color, texture and/or patterning will be applied to reduce visual impacts. The aesthetic treatment shall be context sensitive to the location and be compatible with existing walls in the

project area. If concrete drainage ditches are required along the top of and behind the retaining walls, the ditch should be stained to match the overall color of the wall. Aesthetic treatments will also reduce glare and deter graffiti, and shall be developed during the final design phases and be approved by Caltrans.

**Measure VIS-5:** Where required, retaining wall cable safety railing should have black or brown vinyl cladding to make them less visually obtrusive and help them blend with the setting.

**Measure VIS-6:** Concrete safety-shaped barriers should be sand blasted to a medium finish to minimize glare and deter graffiti. Barriers at the bottom of retaining walls should be stained to match the overall wall color if deemed appropriate by the Office of Landscape Architecture during the design phase.

**Measure VIS-7:** As directed by Caltrans, appropriate light and glare screening measures will be used at the construction staging areas including the use of downward cast lighting.

## CUMULATIVE IMPACTS

The cumulative setting for visual resources includes the viewshed or visible environment surrounding the project limits. The areas surrounding SR 242 are mostly built-out, and the majority of future development generally involves redevelopment of existing areas, infill development, or development of vacant lots. The project would lower the visual quality of the study area (an existing transportation corridor) by adding additional freeway-related infrastructure. These new features would contribute to the change in visual character, but the widening and new ramps and signs would be in character with other similar existing features in the corridor and travelers would continue to have access to mostly suburban landscapes throughout the study area. As a result, significant cumulative changes to the visual character and quality of the study area are not anticipated.

## 2.1.6 CULTURAL RESOURCES

### REGULATORY SETTING

The term “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 for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic 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]. This project was reviewed in accordance with the January 2014 First

Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (hereafter, the PA)". 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 Program (23 United States Code [USC] 327).

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. See **Appendix B** for specific information about Section 4(f).

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as CA 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 the 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

Information in this section is based on the Historic Property Survey Report (HPSR) (Caltrans, 2015d) approved in June 2015. The HPSR incorporates the results of the Archaeological Survey Report (ASR) and the Historical Resources Evaluation Report (HRER) that were also approved in June 2015. As shown in **Table 2.1-25**, the primary authors of the cultural resources reports meet the Professionally Qualified Staff Standards in Section 106 PA, Attachment 1.

The study area for cultural resources is identified by the archaeological and architectural Area of Potential Effects (APE), which encompasses all areas that fall within the physical footprint of the proposed improvements (i.e., the Build Alternatives) and areas that may either be directly or indirectly affected by project-related construction activities. Because of the similarities in the location of proposed improvements, APE boundaries encompass the largest footprint of both proposed Build Alternatives; the Build Alternatives do not have different APE boundaries. Collectively, the archaeological and architectural APE are referred to as the "project APE."

The majority of the project APE is located within/along the existing Caltrans right-of-way for SR 242, but extends beyond the State right-of-way in the area of the proposed Clayton Road ramp improvements to include local roadway right-of-way, private property and the EBMUD property occupied by the Mokelumne Aqueduct on the west side of SR 242. The vertical extent of the project APE varies from a minimum of 3 feet for road widening to 25 feet for retaining wall foundations, and 50 to 60 feet for the piles that would support new overhead ramp structures.

**Table 2.1-25 Preparers Qualifications**

Name	Job Title (Company)	Educational Degree	Years of Experience
Meta Bunse	Principal (JRP Historical Consulting)	MA in History – Public History, California State University, Sacramento	25 years of experience working as a consulting historian on a wide variety of historical research and cultural resource management projects as a researcher, author, and project manager
Steven J. “Mel” Melvin	Staff Architectural Historian (JRP Historical Consulting)	MA in History – Public History, California State University, Sacramento	10 years of experience conducting historical research and cultural resource management projects as a researcher and author
Sean D. Dexter	Co-principal Investigator-for Prehistoric Archaeology (Condor Country Consulting)	BA in Anthropology – University of California, Santa Cruz	20 years of professional experience in California archaeology and cultural resources management
Michelle Kaye	Registered Professional Archaeologist (Condor Country Consulting)	Ph.D. in Physical Anthropology – University of Alaska, Fairbanks	15 years of experience, primarily in California archaeology and cultural resources management

### Archaeological Resources

The archaeological investigation included a review of cultural resource studies and other documentation relevant to the archaeological APE at the Northwest Information Center and two pedestrian reconnaissance surveys, which staff archaeologists conducted on May 20, 2014 and January 26, 2015. The records search identified three previously completed survey reports that cover the archaeological APE.

Approximately 75 percent of the State right-of-way is elevated roadway consisting of non-native/disturbed fill materials of up to 15 feet deep. In addition, a moderate level of disturbance exists within the project APE due to the construction of the following infrastructure:

- The installation of the original Mokelumne Aqueduct pipeline (1929)
- The installation of the second (1949) and third (1963) Mokelumne Aqueduct pipelines
- The construction of the Pine Creek channelization (1950)
- The construction of SR 242 freeway and relocation of the Mokelumne Aqueduct (1965)
- The SR 242 Freeway Widening Project (2000), and associated sound wall construction

The above listed infrastructure included deep excavations within the project APE that did not reveal archaeological resources. Given this, the sensitivity of the archaeological APE is low to moderate for buried resources. In addition, there is a complete lack of archaeological indicators along EBMUD property. Paved concrete or asphalt areas and areas of imported fill were not subject to pedestrian survey. With these exceptions, there were no constraints to the survey effort. No prehistoric archaeological resources or materials were discovered during the reconnaissance surveys.

One previously recorded historic-era archaeological site was identified during the record search. The original location of this resource and the archaeological site is the only documented archaeological resource identified during the records search. While this resource is located within the project APE, it was excavated and evaluated in 1996 and determined not eligible for inclusion in the National Register of Historic Places by personnel from Caltrans and the Anthropological Studies Center at Sonoma State University. Current project plans will not encroach into the known archaeological site boundaries.

### **Native American Consultation**

On January 16, 2014, archaeologists contacted the Native American Heritage Commission (NAHC) requesting a search of the Sacred Lands File on behalf of the project. The NAHC responded to the request on January 24, 2014; the record search of the Sacred Lands File did not indicate the presence of Native American cultural resources within the project APE.

The NAHC did provide a list of three Native American individuals and organizations that might have information pertinent to the project area, or have concerns regarding the proposed Build Alternatives' actions. On February 6, 2014, letters were sent to the following three contacts provided by the NAHC:

- The Ohlone Indian Tribe (Ms. Katherine Erolinda Perez, Representative)
- The Ohlone Indian Tribe (Mr. Andrew Galvan, Representative)
- Trina Marine Ruano Family (Ms. Ramona Garibay, Representative).

The letters contained information about the project; an inquiry for any unrecorded Native American cultural resources or other areas of concern within or adjacent to the project APE; and a solicitation of comments, questions, or concerns with regard the project. On Friday June 6, 2014, a second letter was sent to the three contacts provided by the NAHC to provide an update on the survey results for the project. None of the Native American individuals and organizations consulted expressed any comments or concerns regarding the project, nor did they request archaeological or Native American monitoring of ground-disturbing work associated with the Build Alternatives. A record of all Native American consultation is included in **Appendix J** of this environmental document.

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 stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the Caltrans Professionally Qualified Staff (PQS) Archaeologist 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.

### **Architectural Resources**

A records search, review of historic and current maps, research in archival records, and field surveys were conducted to determine whether historical architectural resources were present within the APE. Built environment resources 45 years or older were evaluated to accommodate the long duration of the planning and design process for transportation projects. Eight built environment resources in the APE required formal evaluation, of which, seven of the buildings and structures evaluated did not meet the criteria for listing in the NRHP or CRHR.

The buried portion of the Mokelumne Aqueduct passes through the APE. This aqueduct system conveys water from Pardee Dam on the Mokelumne River in Calaveras County, approximately 85 miles to the communities of the EBMUD on the eastern shore of the San Francisco Bay.<sup>20</sup> A portion of the historic aqueduct system property, a 14-mile above-ground segment of the aqueduct in San Joaquin County and eastern Contra Costa County (outside of the project APE), was recorded, and evaluated in 2003. The 2003 study concluded some of the aqueduct system appeared eligible for listing in the NRHP and CRHR with two periods of significance: 1929 (the date of completion of the first pipeline) and 1949 (the date of completion of the second pipeline). The eligibility finding received SHPO concurrence in 2005. The 2003 study, however, only evaluated the first two pipelines and did not evaluate the third pipeline of the aqueduct system, built in 1963, because it was less than 50 years old at the time of that survey. The third aqueduct system pipeline is now 52 years old. An updated evaluation of the Mokelumne Aqueduct was conducted for this project and concluded that the third aqueduct system pipeline (built in 1963) does not appear to meet the criteria for listing in the NRHP either individually, or as a contributing element of the historic aqueduct system.

Based on a review of highway construction records, pipelines #1 and #2 of the Mokelumne Aqueduct within the project APE were relocated to a new alignment in 1960-1961 in preparation for construction of SR 242, which was then constructed on the former aqueduct right-of-way. The relocated segment of the aqueduct system within the current project APE lost integrity of design,

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<sup>20</sup> This municipal water delivery system consists of three parallel pipelines that are collectively referred to as the "Mokelumne Aqueduct."

workmanship, materials, location, setting, and feeling during the relocation (segments of pipelines #1 and #2). The relocated pipeline segments of the aqueduct system are therefore not contributing elements of the historic aqueduct property. However, a small segment of the original aqueduct system consisting of pipelines #1 and #2 only remains within the APE, running parallel to the freeway, from approximately 450 feet south of the existing SR 242 pedestrian undercrossing, to the southern limits of the project APE and beyond. Pipeline #3, which was constructed at the time of the relocation, has not gained historical significance in its own right and is not a contributing element of the system.

The short segments of the original aqueduct system within the APE (pipelines #1 and #2) maintain integrity and continue to contribute to the historic aqueduct system property, making it the only built environment resource in the project APE that is a historical resource for the purposes of CEQA; and are considered eligible for the NRHP and CRHR. These elements of the Mokelumne Aqueduct are also subject to the provisions of Section 4(f) of the Department of Transportation Act of 1966 (see **Section 2.1.1, Parks and Recreational Facilities**).

## ENVIRONMENTAL CONSEQUENCES

### Build Alternative 1

No archaeological sites would be affected by Build Alternative 1. Given the level of disturbance within the State right-of-way and surrounding areas, and lack of previously identified resources during the construction of the existing infrastructure, no additional identification efforts are considered necessary.

The original segments of unaltered pipelines #1 and #2 of the Mokelumne Aqueduct represent the only historic property within the project APE. These short segments of the pipeline within the APE run parallel to the freeway, from approximately 450 feet south of the pedestrian undercrossing, to the southern limits of the project APE and beyond. The aqueduct system pipelines are approximately 6 to 7 feet below existing grade. Build Alternative 1 represents the maximum extent of work in the area of the original segment of the aqueduct system. Under Build Alternative 1, the proposed southbound SR 242 loop on-ramp from Franquette Avenue would diverge from the freeway, generally following the alignment of the existing southbound SR 242 on-ramp from Clayton Road, then would extend further west, slightly encroaching into EBMUD right-of-way. Although encroaching into EBMUD right-of-way, the limits of construction for the new loop on-ramp would be adjacent and east of the original aqueduct system pipelines by approximately 50 feet. In the area of the proposed loop on-ramp, SR 242 is slightly elevated. The proposed loop on-ramp would be constructed on fill, supported by a retaining wall. Maximum excavation depths in this area would be no greater than 3 feet below existing grade. While the original segment of the aqueduct system is within the project APE, the pipelines are 6 to 7 feet deep and the limits of construction for the project would not affect this resource. **Figure 2.1-15** shows the maximum extent of work that would occur in this area (Build Alternative 1). Additionally, SHPO issued a letter of concurrence on August 7, 2015 for the *Finding of No Adverse Effect* and the NRHP eligibility

determination for architectural resources under Section 106 of the NHPA (**Appendix J**). The Build Alternatives would not result in the use (direct or indirect) of a historic property qualifying for protection under Section 4(f), as further outlined in **Appendix B**.

### **Build Alternative 2**

Because of the similarities in the location of proposed improvements, project effects discussed above for Build Alternative 1 also apply to Build Alternative 2. Under Build Alternative 2, the extent of work in the area of the original segment of the aqueduct system would be slightly less (i.e., approximately 50 to 100 feet further from the aqueduct system) than when compared to Build Alternative 1.

### **No-Build Alternative**

The No-Build Alternative would not change existing conditions; therefore, it would not affect any cultural resources.

## **AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES**

**Measure CUL-1:** 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 NAHC who will then notify the MLD. At this time, the person who discovered the remains will contact Caltrans Professionally Qualified Staff (PQS) Archaeologist 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.

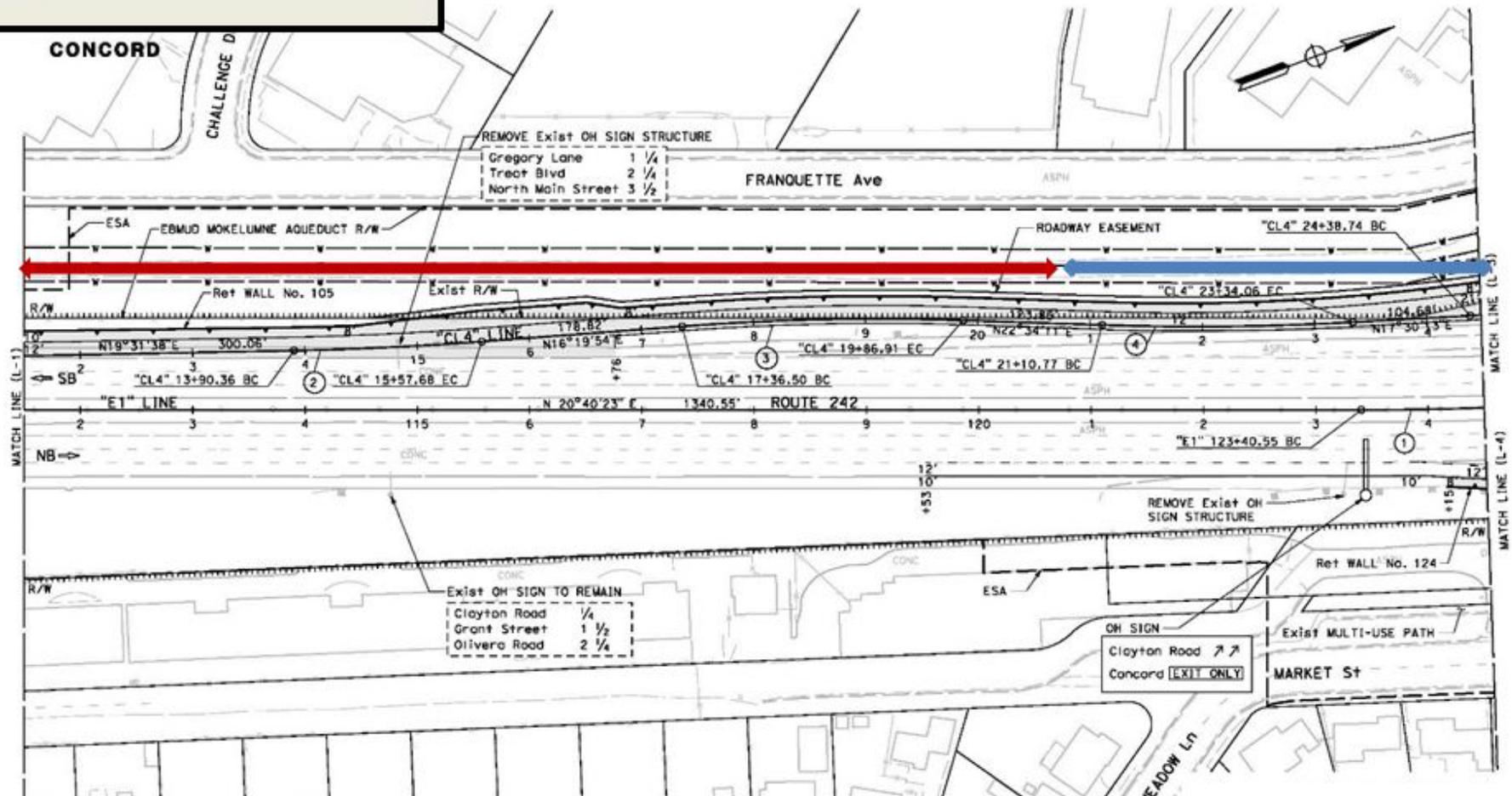
**Measure CUL-2:** If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. Additional study or survey will be needed if the project design changes or project limits are extended beyond the present survey limits.

## **CUMULATIVE IMPACTS**

The cumulative setting for cultural resources includes the areas within and surrounding the project limits which have documented cultural resource sites, and/or high sensitivities to unrecorded artifacts. Cumulative effects to cultural resources would occur if planned and foreseeable development results in the removal of a substantial number of historic structures or archaeological sites that, when taken in combination with the project, and could degrade the physical historical record of the larger project region. The project would not result in adverse effects to known cultural resources, and measures are in place if potentially unknown resources are discovered during construction. Therefore, the project would not contribute to any potential cumulative effects to these resources.

Unaltered Aqueduct 

Altered/Relocated Aqueduct 



Maximum Extent of Work Near Unaltered Segment of the Mokelumne Aqueduct

Figure **2.1-15**