

1.0 Proposed Project

1.1 INTRODUCTION

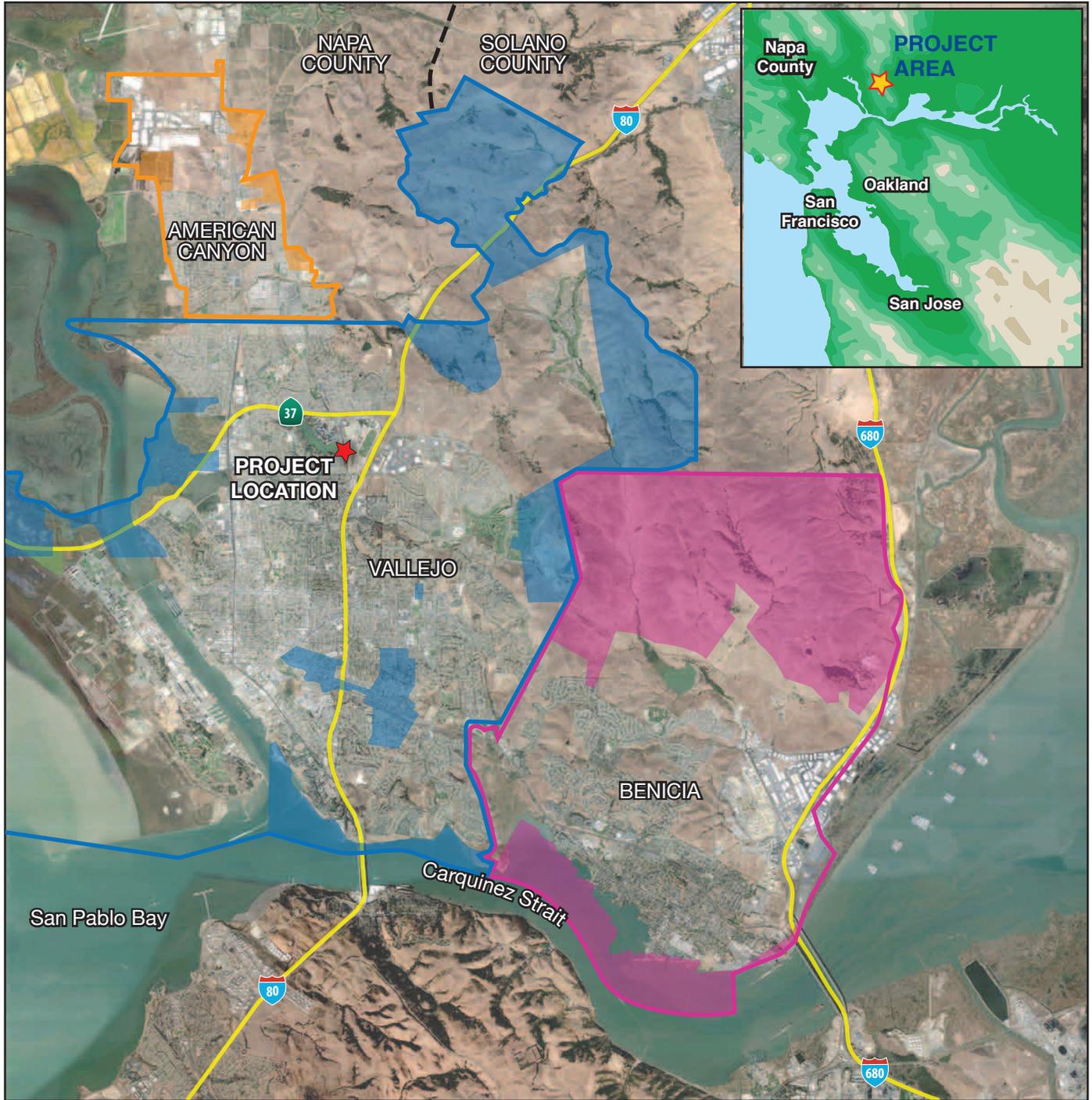
The California Department of Transportation (Department) is the lead agency under the National Environmental Protection Act (NEPA). Solano Transportation Authority (STA) is the lead agency under the California Environmental Quality Act (CEQA).

STA, Solano County, and the City of Vallejo, in cooperation with the Department, proposes to modify the existing Interstate 80 (I-80)/Redwood Parkway interchange to a tight diamond configuration, realign Fairgrounds Drive to a tee intersection north of the I-80 westbound ramps, widen Fairgrounds Drive between Redwood Street and State Route (SR 37), widen the westbound exit ramp from SR 37 to Fairgrounds Drive, and improve the intersections at the SR 37/Fairgrounds Drive interchange. Current transportation issues in this area include poor circulation during peak commute periods, long delays at intersections, short acceleration and deceleration areas, and limited sight distance. Additionally, the existing capacity of the roadways in this area would not accommodate the projected future traffic volumes. **Figure 1-1** depicts the project location and **Figures 1-2a** through **1-2c** depict the proposed improvements.

STATE/REGIONAL/LOCAL PLANNING

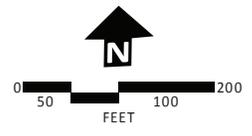
The project is included in the fiscal year (FY) 2010/2011 Metropolitan Transportation Commission's (MTC) Transportation Improvement Program (TIP) as project number SOL090015. MTC approved the financially constrained TIP on October 27, 2010. Following approval by the Department, the Federal Highway Administration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

The project is also included in the fiscally constrained Solano Regional Transportation Plan (RTP) Project List that was adopted by STA on May 22, 2011. This list was prepared by the County for submittal to MTC's 2013 update to its RTP (also known as T-2040 Update "Plan Bay Area"). In the Solano RTP, the project (No. 230313) is identified as fiscally constrained with committed funds of \$62 million (local funding) and \$3 million in discretionary funds, for a total of \$65 million. The preliminary cost estimate for the Build Alternative is \$55.8 million, which includes \$34.2 million for construction and \$21.6 million for right of way and utility relocations.



Legend

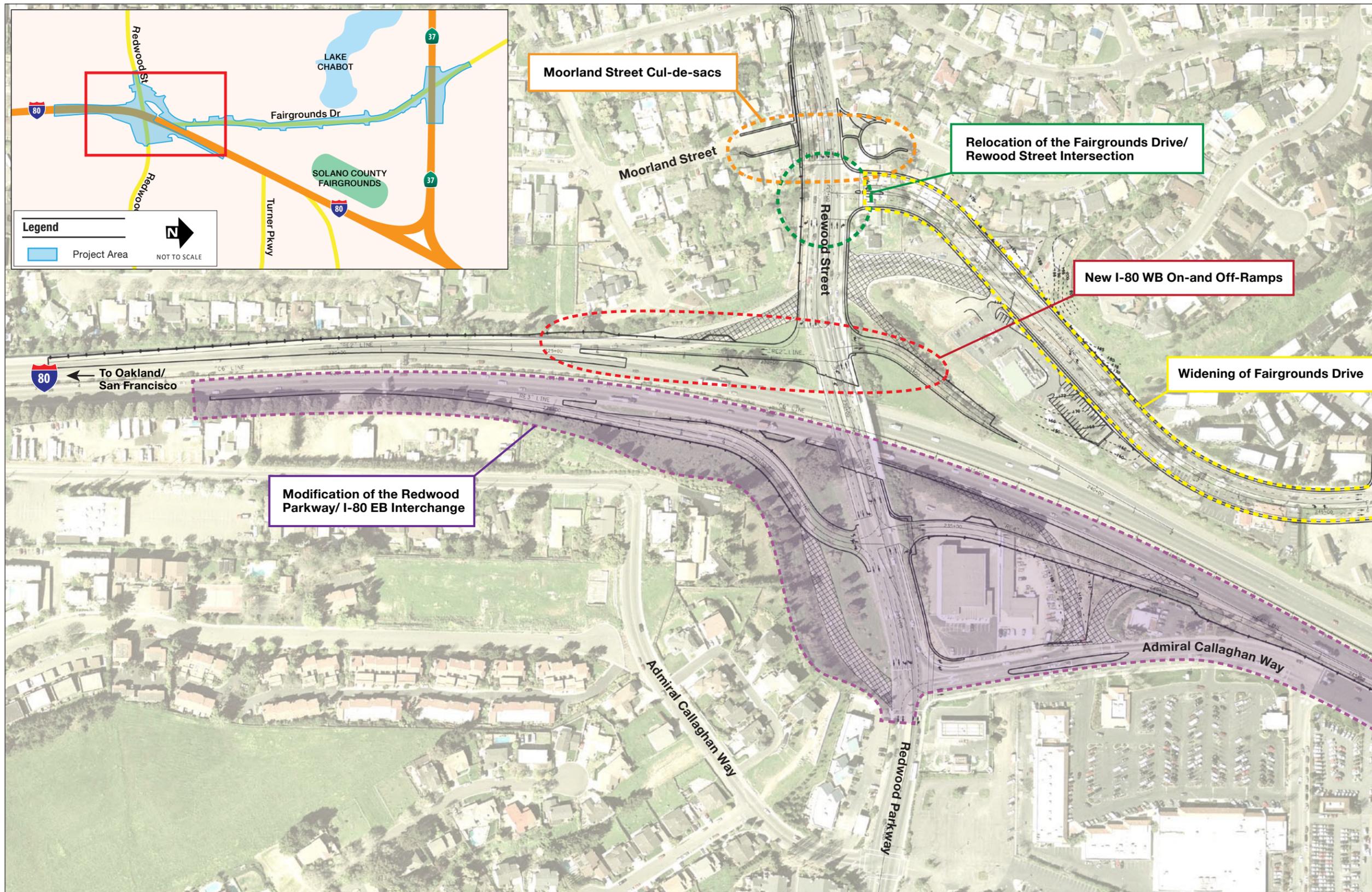
- ★ Project Location
- City of Vallejo
- Vallejo Sphere of Influence
- City of Benicia
- Benicia Sphere of Influence
- City of American Canyon
- American Canyon Sphere of Influence



Project Location

Figure 1-1

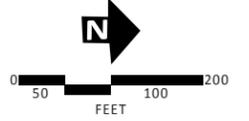
Source: Google Earth, 2010.



Legend

- Build Alternative Layout
- Existing Roadway to be Removed
- Improvements to be Constructed 2035*

*Note: Modification of the Redwood Parkway/I-80 EB Interchange would occur concurrently with the construction of the I-80 High-Occupancy-Vehicle (HOV) lane project, which is anticipated to be completed in 2035.



Build Alternative Layout **Figure 1-2a**

Source: HQE, 2012.

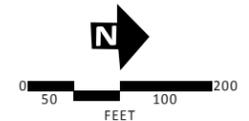
Figure 1-2a Build Alternative Layout (back)



Legend

- Build Alternative Layout
- Existing Roadway to be Removed
- Improvements to be Constructed 2035*

*Note: Modification of the Redwood Parkway/I-80 EB Interchange would occur concurrently with the construction of the I-80 High-Occupancy-Vehicle (HOV) lane project, which is anticipated to be completed in 2035.

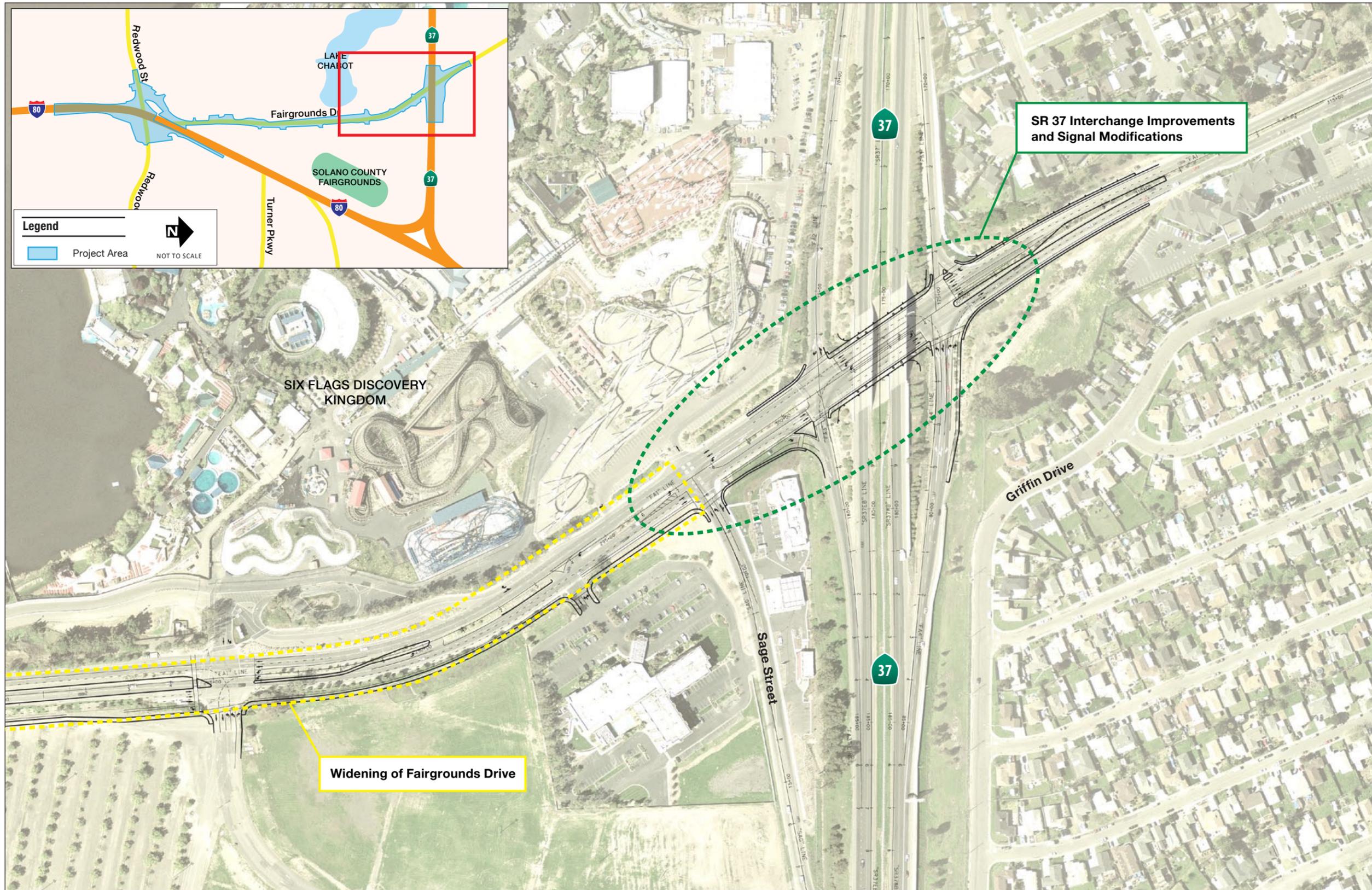


Build Alternative Layout

Figure 1-2b

Source: HQE, 2012.

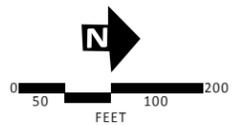
Figure 1-2b Build Alternative Layout (back)



Legend

- Build Alternative Layout
- Existing Roadway to be Removed
- Improvements to be Constructed 2035*

*Note: Modification of the Redwood Parkway/I-80 EB Interchange would occur concurrently with the construction of the I-80 High-Occupancy-Vehicle (HOV) lane project, which is anticipated to be completed in 2035.



Build Alternative Layout

Figure

1-2c

Figure 1-2c Build Alternative Layout (back)

1.2 PURPOSE AND NEED

PURPOSE

Current transportation issues within the project corridor include poor circulation during peak commute periods, long delays at intersections, short acceleration and deceleration area, and limited sight distance. In addition, the existing capacity of the roadways in this area will not accommodate projected future traffic volumes planned for in the project vicinity.

The purpose of the project is to address these issues by:

- Relieving existing congestion and improving traffic flow on the local roadway network for approved redevelopment and planned land uses in the area;
- Improving the existing interchanges and intersection operations; and
- Improving the safety of the local roadway network by reducing congestion.

NEED

Existing and Future Traffic Congestion

Existing Conditions

Level of Service (LOS) is a measure of actual traffic conditions and the perception of such conditions by motorists. There are six LOS ratings, ranging from LOS A (free traffic flow with low volumes and high speeds, resulting in low vehicle densities) to LOS F (traffic volumes exceeding the capacity of the infrastructure, resulting in forced flow operations, slow speeds, and high vehicle densities). The following intersections within the project limits currently experience heavy congestion and long delays¹, as indicated by a Level of Service (LOS) D or worse:

- Fairgrounds Drive at Sage Street
- Fairgrounds Drive at Redwood Street/westbound I-80 ramps

Future Conditions

Traffic forecasts were prepared, based on the latest version of the Solano-Napa Phase II county-wide transportation model. This model was provided by STA and modifications were made to ensure that it accurately reflected the road improvement projects expected to be in place by 2035. Some additional modifications were made to improve the

¹ Department, 2012j.

representation of the road network within the study area² and to incorporate the changes in land use that are expected to occur by both 2015 and 2035. This was based on input received from STA, Solano County, and City of Vallejo.

The land use assumptions in the 2010 travel demand model have been used for 2010 land use assumptions; however, the land use files for 2030 did not reflect current expectations about development within the study area. The Solano County Fairgrounds are now expected to be redeveloped with a mixture of hotel, retail, and entertainment uses as described in the Solano 360 Vision Report, dated May 28, 2009. This redevelopment is expected to be in place by 2030. Additionally, the existing Elks Club located at 2850 Redwood Parkway, is expected to be replaced in the near future by a small retail development, known as the Winco Foods project.

2015 Traffic Congestion

Without the project, the Traffic Operation Analysis Report (TOAR) shows that the following intersections within the project limits would operate at unacceptable Levels of Service (LOS D or worse) during the PM peak periods in 2015:

- Fairgrounds Drive at westbound SR 37 ramps
- Fairgrounds Drive at Sage Street
- Fairgrounds Drive at Redwood Street/westbound I-80 ramps
- Admiral Callaghan Lane at eastbound I-80 ramps

2035 Traffic Congestion

Without the project, the TOAR shows that the following intersections within the project limits would operate at unacceptable Levels of Service (LOS D or worse) during the AM and PM peak periods in 2035:

- Fairgrounds Drive at westbound SR 37 ramps
- Fairgrounds Drive at eastbound SR 37 ramps
- Fairgrounds Drive at Sage Street
- Fairgrounds Drive at Fairground gate
- Fairgrounds drive at Six Flags gate
- Fairgrounds Drive at Coach Lane
- Fairgrounds Drive at Sereno Drive
- Fairgrounds Drive at Valle Vista Avenue

² The study area for the traffic analysis encompasses an approximately 4.6 mile segment of the I-80 freeway corridor, an approximately 1.7 mile segment of the SR 37 corridor, and 20 local intersections along Fairgrounds Drive and connecting roadways.

- Fairgrounds Drive at Redwood Street/westbound I-80 ramps
- Admiral Callaghan Lane at Redwood Parkway
- Admiral Callaghan Lane at eastbound I-80 ramps

Existing Operations and Deficiencies

Accident Data

Accident data for the three-year period from April 1, 2007 to March 31, 2010 was obtained from Caltrans Traffic Accident Surveillance and Analysis Systems (TASAS) data and is summarized below in **Table 1-1**. The summaries are shown for the following project elements:

- I-80 eastbound ramps
- I-80 westbound ramps
- SR 37 eastbound ramps
- SR 37 westbound ramps

The accident information includes the number of fatal (F), fatal plus injury (F+I) and the total (Total) accidents on the study area ramps. The actual rates for the project area are compared with the statewide averages for similar facilities in urban areas.

A majority of the accidents within the study area were rear end collisions caused by drivers speeding with traffic slowing and/or stopped. Most of the accidents occurred during day time under clear and dry conditions. Bad driving behavior was a major factor that contributed to most of the accidents. About six percent of the accidents involved drivers under the influence of alcohol. Approximate 60 percent of all the drivers in the reported accidents were speeding or were cited for some other traffic violation.

Non-Standard Roadway Design Features

The existing I-80/Redwood Parkway interchange facility is over 50 years old and several non-standard features are present with the study limits. The Redwood Parkway eastbound interchange configuration consists of short, tight radius hook ramps connecting to Admiral Callaghan Lane rather than the cross road that they serve, resulting in nonstandard merge and diverge distances. In the westbound direction, the entrance and exit ramps form a five-legged intersection with Redwood Street and Fairgrounds Drive with poor stopping and corner sight distance.

Table 1-1 Accident Rates for I-80 and SR 37 Ramps

Location	No. of Accidents			Actual Rates			State Average Rates		
	F	F+I	Total	F	F+I	Total	F	F+I	Total
I-80 Eastbound									
Exit to EB Redwood Street/Admiral Callaghan Lane	0	1	1	0.000	0.21	0.21	0.004	0.26	0.85
Exit to Redwood Street/Admiral Callaghan Lane	0	1	5	0.000	0.11	0.54	0.004	0.28	0.95
Entrance from Redwood Street/Admiral Callaghan Lane	0	0	0	0.000	0.00	0.00	0.002	0.16	0.55
I-80 Westbound									
Entrance from Redwood Street/Fairgrounds Drive	0	1	7	0.000	0.06	0.43	0.002	0.14	0.45
Exit to Redwood Street/Fairgrounds Drive	0	1	3	0.000	0.18	0.55	0.004	0.42	1.20
SR 37 Eastbound									
Exit to Fairgrounds Drive	0	2	4	0.000	0.72	1.43	0.004	0.42	1.20
Entrance from Fairgrounds Drive	0	3	7	0.000	0.16	0.38	0.002	0.26	0.75
SR 37 Westbound									
Exit to Fairgrounds Drive	0	5	20	0.000	0.26	1.05	0.004	0.42	1.20
Entrance from Fairgrounds Drive	0	0	3	0.000	0.00	1.14	0.002	0.26	0.75

Source: HQE, Inc. 2011.

Note: **Bold** text indicates x.xx = Actual rate is higher than average rate; F=Fatal; I=Injury

SR 37 is a four-lane, east-west freeway connecting State Route (SR 29) and I-80 within the city of Vallejo. The westerly project limit includes SR 37/Fairgrounds Drive interchange, a tight diamond configuration, and the I-80/SR 37 freeway to freeway interchange, constructed in the late 1970s is the easterly project limit. The majority of this segment was constructed in the mid- to late 1970s while the Fairgrounds Drive/SR 37 interchange was built in the early 1990s. This segment of SR 37 consists of 12-foot lanes, 5-foot left shoulders, and 10-foot right shoulders. The existing pavement section is constructed of asphaltic concrete on top of cement treated base. There is less than 300 feet spacing between adjacent eastbound and westbound ramp intersections causing short queuing storage lengths.

Within the project study limits, Fairgrounds Drive is a conventional 2-lane, undivided local arterial with two 12-foot lanes, flanked by 2 to 4 foot non-standard shoulders. Moorland Street is a two-lane residential roadway that runs parallel to the west of Fairgrounds Drive. The roadway continues south, between Redwood Street and Greenfield Avenue, however, only the northern portion of Moorland Street connects directly to Redwood Street. The portion of Moorland Street south of Redwood Street is

currently a non-standard dead-end that does not provide an adequate turning radius for emergency fire response vehicles.

INDEPENDENT UTILITY AND LOGICAL TERMINI

The Fairgrounds Drive/SR 37 and the Redwood Parkway/I-80 interchanges are logical termini for the Build Alternative as they represent the major links to the freeway network for the local traffic along Fairgrounds Drive. In addition, the project corridor termini are of sufficient length to address environmental matters on a broad scope.

The project would result in improvements to the current traffic conditions along the existing roadway network without any additional improvements being made in the area. As such, the project is considered to have independent utility. Furthermore, the project would not restrict considerations of alternatives for other reasonably foreseeable transportation improvements in the area.

1.3 PROJECT DESCRIPTION

The Redwood Parkway–Fairgrounds Drive Improvements Project (Build Alternative) would construct several roadway improvements along portions of Fairgrounds Drive and Redwood Parkway/Redwood Street within the city of Vallejo. The total length of the project corridor is approximately 1.5 miles, and extends from the Fairgrounds Drive/ I-80 interchange (post mile 4.0 to 4.9) to the Fairgrounds Drive/ SR 37 interchange (post mile 10.6 to 11.2). Detailed descriptions of the existing facilities within the project study limits, and associated deficiencies, are discussed above under project need. The purpose of the project is to relieve congestion and improve traffic flow on the local roadway network; improve the existing interchange and intersection operations; improve the safety of the local roadway network by reducing congestion; and increase the local roadway network capacity.

ALTERNATIVES

The types of interchange improvements that would be possible at the existing Fairgrounds Drive/SR 37 and the Redwood Parkway/I-80 interchange are limited because these areas are physically constrained by the existing residential and commercial development. With the exception of the Build Alternative (described below), other interchange configurations would require the reconstruction of the existing overcrossing structures and have severe right-of-way impacts combined with extremely high construction costs. Similarly, along the Fairgrounds Drive right-of-way, no other alignment alternatives were possible because of the steep grades and developed land uses and/or water features on either side of the roadway.

Because of these constraints, no other design alternatives were carried forward beyond initial design screenings. The alternatives evaluated in this environmental document include the Build Alternative and the No-Build (No Action) Alternative.

Build Alternative

The Build Alternative would construct several roadway improvements along portions of Fairgrounds Drive and Redwood Parkway/Redwood Street, within the city of Vallejo.

Figures 1-2a through **1-2c** illustrates the improvements proposed under the Build Alternative which would include the major elements described below.

Modification of the Redwood Parkway/I-80 Interchange

The existing Redwood Parkway/I-80 interchange would be reconstructed as a tight diamond configuration that utilizes the existing I-80 overcrossing structure. The existing Redwood Street overcrossing structure would not be replaced. **Figures 1-2a** through **1-2c** illustrate the proposed through-lanes, turning lanes, and intersection configurations of the new Redwood Parkway/I-80 interchange.

New I-80 westbound on- and off-ramps would be constructed to directly connect with Redwood Street as a signalized four-way intersection, independent of the Fairgrounds Drive/Redwood Street intersection, and closer to the I-80 freeway right-of-way. West of the I-80 overcrossing structure, Redwood Street would be widened to accommodate new turning lanes to and from the proposed I-80 westbound ramps, requiring additional right-of-way acquisition from existing residential land uses.

The existing tight radius hook on- and off-ramps connecting I-80 eastbound to Admiral Callaghan Lane would be replaced with a new Redwood Parkway/I-80 eastbound on-ramp that follows the proposed tight diamond interchange configuration. Similar to the proposed Redwood Street/I-80 westbound ramps, new I-80 eastbound on- and off-ramps would be constructed to directly connect with Redwood Parkway as a signalized four-way intersection, independent of the Redwood Parkway/Admiral Callaghan Lane intersection, and closer to the I-80 freeway right-of-way. Construction of the new I-80 eastbound on-ramp would require additional right-of-way acquisition from existing commercial land uses.

By eliminating the existing unconventional five-way intersection, the potential for conflicts due to driver error should be reduced. Improving the angle of the ramps would aid in improving drivers' ability to avoid crashes, and the maneuverability of turning vehicles through the ramp intersections.

Relocation of the Fairgrounds Drive/Redwood Street Intersection

The existing Fairgrounds Drive/Redwood Street intersection would be relocated approximately 200 feet west of its current location. In doing so, the corner sight distance at the peak of the roadway curve on Fairgrounds Drive near Redwood Street would be improved from 55 feet to 300 feet. As discussed above, the new three-way signalized intersection would be independent from the proposed Redwood Street/I-80 westbound ramps. **Figures 1-2a** through **1-2c** illustrate the proposed through-lanes, turning lanes, and Fairgrounds Drive/Redwood Street intersection configuration.

Moorland Street Cul-de-sacs

The existing Redwood Street/Moorland Street intersection would be removed. The termini of Moorland Street, both north and south of Redwood Street, would be reconfigured as cul-de-sacs. Each of the cul-de-sacs would be designed to provide an adequate turning radius for emergency fire response vehicles. The alignment of the Moorland Street cul-de-sacs would require additional right-of-way acquisition from existing residential land uses.

Widening of Fairgrounds Drive

Fairgrounds Drive would be widened from two to four lanes from Redwood Street to Coach Lane, and from four to five lanes from Coach Lane to SR 37 (see **Figures 1-2a** through **1-2c**). The two-way left turn lane would be maintained between Redwood Street and Coach Lane to accommodate frontage property access. As a result of the widening, approximately 1,300 linear feet of Rindler Creek that parallels Fairground Drive would be relocated to the east. Five-foot sidewalks would be provided in the southbound directions from Redwood Street to Coach Lane. A ten-foot sidewalk is proposed in the northbound direction north of Coach Lane. Class II bike lanes are planned in both direction of travel from Redwood Street to the SR 37 interchange.

Modifications to the Fairgrounds Drive/SR37 Interchange

As described above, the portion of Fairgrounds Drive that crosses under SR 37 would be widened to better accommodate queuing issues associated with closely spaced intersections. However, the existing tight diamond configuration of the Fairgrounds Drive/SR 37 interchange would largely remain unchanged. Minor modifications to the SR 37 westbound exit ramp would include the addition of a right-turn lane and reconfiguration of the turning lanes to and from Fairgrounds Drive (see **Figures 1-2a** through **1-2c**).

Signal Modifications

As described above, all of the new intersections associated with the interchange modifications and relocation of the Fairgrounds Drive/Redwood Street intersection would be signalized. In addition, the Build Alternative includes the signalization of the Fairgrounds Drive/Sage Street intersection.

The Built Alternative would also include signal modifications at Fairgrounds Drive/SR 37 westbound ramps, Fairgrounds Drive/SR37 eastbound ramps, Fairgrounds Drive/Solano County Fairgrounds Development Entrance (north), Sereno Drive/Fairgrounds Drive, and Redwood Parkway/Admiral Callaghan Way.

Construction Staging

The design and construction phases of the project will be staged to coordinate with a future High Occupancy Vehicle (HOV)/ Toll lanes (express lanes) project along I-80. The

portion of the I-80 corridor through Solano County has been identified by the Metropolitan Transportation Commission (MTC) as part of a feasible express lane network throughout the San Francisco Bay Area. STA has completed a study to prioritize implementation of the HOV/express lanes along the I-80 corridor. In order to construct the HOV/express lanes, additional work along the I-80 mainline would be necessary. In order to maximize efficiencies and reduce costs it has been determined that the design and construction of eastbound improvements on I-80 as part of the Build Alternative should be done concurrently with the future I-80 HOV/express lanes project.

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

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

Construction Methods

Construction of the Build Alternative would include grading (earthwork), paving, drainage facilities, retaining walls, sound walls, overhead signs, utility protection and/or relocation, temporary traffic control, storm water pollution prevention measures (permanent and temporary), temporary creek diversion, permanent realignment of the man-made channel for Rindler Creek, temporary construction easements, and right-of-way acquisition.

The Build Alternative would shift approximately 1,300 linear feet of the Rindler Creek watercourse and its associated riparian vegetation east from its current man-made alignment to accommodate the widening of Fairgrounds Drive. This would occur between Coach Lane and the southern entrance to the Solano County Fairgrounds property. Realignment of the creek involves clearing, grubbing, dewatering, and backfilling the current man-made channel. The new channel would be excavated and re-vegetated to create a riparian habitat in equal size and comparable function to the existing watercourse. Staging of the realignment is expected to require a temporary creek diversion during the low-flow period, between April 15 and August 15.

To avoid and minimize effects to wildlife species and their habitats, the Build Alternative includes a number of general measures that are considered part of the project design. The measures summarized below are discussed in full detail in the appropriate sections of **Section 2.3, Biological Resources**. All measures would be implemented prior to and during construction activities, and would be included as part of the special provisions of the bid package.

- Retain a biological monitor during the dewatering and backfill of Rindler Creek
- Conduct pre-construction nesting bird surveys
- Establish temporary construction zone exclusion fencing
- Minimize nighttime artificial lighting
- Maintain good housekeeping practices regarding food-related trash items
- Restrict firearms from the construction areas, except for those carried by authorized personnel
- Restrict pets from the construction areas
- Develop a stormwater pollution prevention plan (SWPPP)
- Designate areas for the storage of grindings and asphalt-concrete waste
- Re-vegetate all areas temporarily affected by construction activities

Transportation Management Plan

In order to minimize traffic delays while maintaining worker safety, there would be four major stages of construction for the Build Alternative. Detailed Stage Construction/Traffic Handling plans will be prepared during final design phase of the project.

Stage 1

All existing traffic movements would be maintained utilizing temporary railing to separate public traffic and construction activities. The contractor may elect to close the ramps while installing the temporary rail. The westbound I-80 mainline lanes would require short-term closures for temporary restriping activities. Temporary lane closures would be required on Redwood Parkway in order to remove the existing raised median.

At the SR 37/Fairgrounds Drive interchange, pedestrians would be relocated to the northbound side of Fairgrounds Drive using temporary crossings at the existing intersections.

Along Fairgrounds Drive, the two-way left turn lane would be utilized to maintain one through lane in each direction, between Redwood Street and Valle Vista Avenue.

Pedestrians would be restricted to one side of the roadway and bicyclists would use a temporary Class III route³, riding with motor vehicles through the construction zone.

Stage 2

Temporary closures would be required at all ramp entrances and exits. Traffic on the westbound I-80 ramps would be shifted to the east onto temporary adjacent pavement separated by temporary railing.

At the SR 37/Fairgrounds Drive interchange, pedestrians would be detoured to the new sidewalk location along the southbound side of Fairgrounds Drive, and bicyclists would use a temporary Class III route, riding with motor vehicles through the construction zone. Alternately, cyclists may choose to walk their bikes on the sidewalk.

Weekend closures of Fairgrounds Drive would be required prior to shifting traffic to the west to maintain one through lane in each direction between Redwood Street and Valle Vista Avenue. Pedestrians would be restricted to one side of the roadway, and bicyclists would use a temporary Class III route, riding with motor vehicles through the construction zone.

Stage 3

Traffic using the eastbound I-80 diagonal off-ramp would be shifted to the new intersection with Redwood Parkway, and the existing hook off-ramp would be closed. Traffic using the eastbound I-80 entrance ramp would be shifted to detour pavement constructed adjacent to the existing ramp. Temporary westbound and eastbound ramp closures would be required. Short-term closure of the third westbound I-80 mainline lane would be required.

Traffic would be shifted to the outside the existing roadway at the SR 37/Fairgrounds Drive Interchange, to the east along Fairgrounds Drive. Temporary lane closures would be required to set temporary railings as required for the median work.

Stage 4

Traffic using the eastbound I-80 entrance ramp would continue to use the detour pavement constructed in Stage 2. Traffic would be shifted to the new westbound I-80 exit ramp.

The contractor would be required to submit a traffic control plan at least one week prior to any ramp or lane closure. The traffic control plan would contain a detailed contingency plan to ensure opening of ramps or closed lanes by the designated time. During construction activities requiring lane closure, the contractor shall provide appropriate personnel to monitor activities and make decisions regarding activation of contingency plans.

³ On-street signed bicycle route

During the final design phase of the project, a detailed Transportation Management Plan would be developed to facilitate access and reduce traffic congestion during construction. The Transportation Management Plan would include four broad strategy categories: public information, motorist information, incident management, and construction. Under this plan, mailers would be sent to notify and inform motorists, business community groups, local entities, emergency services, and elected officials of upcoming road closures and detours. Freeway ramp and lane closures would be displayed on changeable message, signs, and construction area signs would be used to direct traffic. A Construction Zone Enhanced Enforcement Program would be implemented to engage California Highway Patrol (CHP) officers for ramp or lane closures, and to provide for enforcement of speed restrictions and faster incident response. Traffic management strategies that require action by the construction contractor would be presented in detail in the Build Alternative's technical specifications of the bid contract.

Transportation System Management and Transportation Demand Management Alternatives

Transportation System Management strategies increase the efficiency of existing facilities; they are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Although Transportation System Management measures alone could not satisfy the purpose and need of the Build Alternative, the following Transportation System Management measures have been incorporated into this project:

- Include bike lanes and sidewalks along Fairgrounds Drive;
- Maintain existing in-road sensor loops⁴; and
- Include ramp metering at the I-80/Redwood Parkway interchange.

There are several transportation demand management strategies within the San Francisco Bay Area that are used to reduce the number of vehicle trips along the I-80 corridor. Rideshare offers carpoolers reduced bridge tolls as well as access to carpool lanes. There is also a vanpool for larger groups of commuters. Transportation demand management may also involve the provision of contract funds to regional agencies that are actively promoting ridesharing, maintaining rideshare databases, and providing limited rideshare services to employers and individuals. Increased vehicle occupancy reduces traffic volumes during peak commuting periods on the freeway; however, it would not improve the safety and operation of the local roadway network. Accordingly, a transportation demand management alternative would not satisfy the purpose of the Build Alternative.

⁴ When you approach a traffic signal you may notice a rectangular "scar" where the road surface has been cut with a saw and then re-sealed. This is the sensor loop. The system detects (through detection loops in the pavement) traffic volumes so that the "green-light" signals can be appropriately timed.

No-Build (No Action) Alternative

The No-Build Alternative is being evaluated in accordance with NEPA and CEQA requirements, and serves as the baseline comparison to the Build Alternative. Traffic operations analysis of the No-Build alternative represents the baseline condition against which the effectiveness and impacts of alternatives are measured. Traffic forecasts were prepared based on the latest version of the Solano-Napa Phase II countywide transportation model. This model reflects the land use and road improvement projects planned to be in place by 2035. Some additional modifications were made to improve the representation of the road network within the project study area and to incorporate the changes in land use that are expected to occur by both 2015 and 2035.

Traffic volumes within the project study area would increase with the No-Build Alternative. As there are no improvements proposed to the existing local roadway network, the No-Build Alternative would not achieve the project purpose of increasing the local roadway network capacity to accommodate existing and approved redevelopment and growth in the area. In addition, the increased traffic volumes without capacity improvements would most likely worsen the congestion and slow traffic flow on the local roadway network. Without the realignment of the Fairgrounds Drive/Redwood Street intersection, the No-Build Alternative would not improve the current safety issues related to limited sight distance in this area. The eastbound I-80 hook ramps would continue to have nonstandard merge and diverge area, as well as limited sight distance.

IDENTIFICATION OF A PREFERRED ALTERNATIVE

Within the existing project corridor, no other build alternatives were deemed viable because of the physical constraints and developed land uses surrounding the roadways (see discussion below). As such, the alternatives considered for the project include the Build Alternative and the No-Build Alternative. The Build Alternative has been identified as the preferred alternative, subject to public review. Final identification of a preferred alternative will occur after the public review and comment period.

Table S-1 summarizes the adverse effects of the Build Alternative in comparison with the No-Build Alternative. The proposed avoidance, minimization, and/or mitigation measures to reduce the effects of the Build Alternative are also presented. For a complete description of potential adverse effects and recommended measures, please refer to the specific sections within **Chapter 2.0, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures**.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION

Several additional interchange configurations were investigated during the development of the Build Alternative. These included a partial-cloverleaf (parclo) interchange, a trumpet interchange, and an urban (single point) interchange. All interchange configurations other than the diamond type would require reconstruction of the Redwood

Parkway overcrossing structure and have severe right-of-way impacts combined with extremely high construction costs. Constructing a roundabout on the westbound side of the Redwood Parkway interchange was also investigated. This was found to be infeasible due to the grades.

Similarly, along the Fairgrounds Drive right-of-way, no other alignment alternatives were possible because of the steep grades and developed land uses and/or water features on either side of the roadway.

Various intersection modifications to the signal timing and turning lane configurations were analyzed to determine the minimum improvements that would be needed to provide an acceptable traffic operations under 2035 conditions. In several cases, there was more than one acceptable design for each intersection. The final design of the intersection improvements was selected in consultation with the traffic engineers so the improvements could accommodate other requirements, such as sight distance, deceleration, and available right-of-way. The proposed Build Alternative encompasses the best possible intersection designs, based on the predicted 2035 traffic conditions.

A detailed description of each alternative that was considered is provided in the Project Study Report (PSR). **Table 1-2** summarizes the description of each considered alternative and the reason it was withdrawn.

Table 1-2 Alternatives Considered But Withdrawn

Alternative	Summary of Reason for Withdrawal
2B	Alternative 2B would construct an overcrossing at Turner Parkway. The Turner Parkway overcrossing would not alleviate congestion at the I-80/Redwood interchange nor the SR 37/Fairgrounds Drive interchange. Both would have intersections that continue to operate at unacceptable levels of service in future years. Therefore, this alternative does not meet the purpose and need for the project. In addition, construction of the overcrossing has the high potential for biological impacts related to Rindler Creek and potential wetlands on the east side of Admiral Callaghan Lane.
3A	Alternative 3A would reconfigure the I-80/Redwood Parkway interchange as a standard partial cloverleaf interchange instead of the Build Alternative's proposed diamond configuration. A partial cloverleaf interchange at this location would require constructing a new bridge over I-80. A new structure would need to meet current standards, including minimum vertical clearances, sight distance, and horizontal clearances to the new bridge abutments. In addition, the bridge would have to be designed to accommodate standard lane widths, including a future HOV/Express lanes planned for I-80. All of these elements, combined with the steep grade on Redwood Parkway east of I-80 and the installation of loop ramps, would result in additional right-of-way and construction costs in the range of \$50-\$60 million, almost double the current estimated cost of the project.

Alternative	Summary of Reason for Withdrawal
3B	Alternative 3B would reconfigure the I-80/Redwood Parkway interchange as a modified partial cloverleaf interchange, with the westbound I-80 exit ramp connecting to Fairgrounds Drive. This configuration would decrease the amount of residential right-of-way required for the project, but would increase the amount of commercial property acquisitions, including Denny's and the dental office building. Alternative 3B would require construction of a new bridge over I-80, which would result in the additional impacts listed above under Alternative 3A.
3C	Alternative 3C would reconfigure the I-80/Redwood Parkway interchange as a modified partial cloverleaf with the westbound I-80 exit ramp connecting to Fairgrounds Drive, across from Valle Vista. This alternative would likely require additional intersection improvements at Fairgrounds Drive/Redwood Parkway. Alternative 3C would also result in non-standard shoulders (2 to 3 feet) on I-80 where loop ramp entrances connect.
4A	Alternative 4A would construct westbound I-80 hook ramps over ¼ mile away from the cross street they serve (Redwood Parkway) connecting to Valle Vista Avenue. This configuration would result in impacts to the mobile home park and Blue Rock Springs Creek. Alternative 4A would likely require additional intersection improvements at Fairgrounds Drive/Redwood Parkway due to the change in ramp traffic patterns (traffic that would need to use Fairgrounds Drive). In addition, hook ramps tend to have higher accident rates than diamond or loop ramps due to small radius curves.
<i>Alternatives Considered But Withdrawn, continued.</i>	
4B	Alternative 4B would construct a westbound I-80 hook exit ramp connecting to Valle Vista Avenue. The existing I-80 entrance ramp would remain at Redwood Street. Under this alternative, operations at existing intersections would not be acceptable in 2035. Similar to Alternative 4A, this alternative would result in impacts to the mobile home park and Blue Rock Springs Creek and require additional intersection improvements.
5	Alternative 5 would reconfigure the I-80/Redwood Parkway interchange as a pitchfork configuration. Alternative 5 would result in non-standard shoulders (2 to 3 feet) on I-80 at the Redwood Parkway overcrossing. This Alternative would also increase the potential for wrong-way movements. Additional residential right-of-way acquisitions would be required in the southwest quadrant of the proposed interchange improvements.
6	Alternative 6 would reconfigure the I-80/Redwood Parkway interchange as a roundabout configuration. The steep grades in this area would not support this configuration. The roundabout configuration would not balance the flow of traffic in and out of the interchange.
7	Alternative 7 would reconfigure the I-80/Redwood Parkway interchange as an urban interchange configuration. It would be difficult to construct and stage, as it would have to be right on top of the existing bridge. A new bridge over I-80 would be required (see Alternative 3 for impacts). Alternative 7 eliminates access to westbound I-80 from Fairgrounds Drive. This alternative would also require three westbound through travel lanes on Redwood Parkway.

Alternative	Summary of Reason for Withdrawal
VA 1.1	Alternative VA 1.1 would improve the existing I-80 Redwood Parkway interchange by adding lanes. Modification of the existing interchange configuration does not work from an operational standpoint. The five-legged intersection at westbound I-80 Ramps/Redwood Street/Fairgrounds Drive would operate at LOS E under 2035 evening peak commute hours. In addition, the queuing associated with the evening peak traffic conditions at all intersections would cause unacceptable congestion and block adjacent intersections.
VA 1.2	Alternative VA 1.2 would improve the existing eastbound I-80 ramps by adding lanes. The queuing associated with the 2035 evening peak traffic conditions at the existing eastbound I-80 Ramps/Admiral Callaghan Lane intersection and the Redwood Parkway/Admiral Callaghan Lane/I-80 EB exit ramp intersection would cause unacceptable congestion and block adjacent intersections.
VA 1.3	Alternative VA 1.3 would construct a diverging diamond interchange serving the eastbound I-80 ramps/Redwood Parkway intersection. This alternative is not feasible due to the close proximity of the Redwood Parkway/Admiral Callaghan Lane intersection, and the 8 percent grade that would need to be maintained in order to use the existing overcrossing structure. In addition, this alternative poses substantial schedule delays as this interchange type has not been accepted in California.

Source: HQE, Inc., 2011

PERMITS AND APPROVALS NEEDED

Table 1-3 identifies the permits/approvals that would be required for project construction.

Table 1-3 Permits and Approvals

Agency	Permit/Approval	Status
United States Army Corps of Engineers	Section 404 Permit – Nationwide	Issued during the Final Design Phase
United States Fish and Wildlife Service	Concurrence with “no effect” determination	Issued during the Final Design Phase
California Department of Fish and Game	1602 Agreement	Issued during the Final Design Phase
California Water Resources Board	NPDES Permit	Issued during the Final Design Phase
Regional Water Quality Control Board	Section 401 Certification	Issued during the Final Design Phase

Temporary construction easements and/or encroachment permits may be required from the City of Valley and Solano County to accommodate work outside state-owned right-of-way.

PROJECT COST AND FUNDING

Cost

The breakdown of remaining anticipated costs is \$58,000,000 for the Build Alternative(see **Table 1-4**).

Table 1-4 Construction Cost Estimate Summary

	Build Alternative
Final design phase (includes 10 percent of construction cost plus 3 percent of right-of-way cost for ROW engineering)	\$3,900,000
Construction Management at 12 percent	\$4,100,000
Construction Administration at 3 percent	\$1,000,000
Construction	\$34,300,000
Right-of-Way	\$14,7000,000
Total Cost	\$58,000,000

Funding

The funding for the majority of the project is Local Funding that will come from traffic impact fees. The Fiscally Constrained Solano RTP Project List for submittal to MTC (T2040 Update “Plan Bay Area”) was adopted by the STA Board on May 22, 2011. Project Number 230313 identifies the Redwood Parkway/Fairgrounds Drive Improvements project as Fiscally Constrained with Committed Funds of \$62 million (Local Funding) and \$3 million in Discretionary Funds, for a total of \$65 million. MTC’s RTP update is anticipated to be approved in the spring of 2013.