

1.0 PROPOSED PROJECT

1.1 INTRODUCTION

The California Department of Transportation (Caltrans), in cooperation with the Solano Transportation Authority (STA) and the Metropolitan Transportation Commission (MTC), propose to provide High Occupancy Vehicle/High Occupancy Toll lanes (HOV/ express lanes) in both the westbound and eastbound direction of Interstate 80 (I-80) from west of Red Top Road to east of Interstate 505 (I-505), within Solano County, California. The I-80 Express Lanes Project (project) would construct approximately 18 miles of express lanes in the I-80 corridor through conversion of existing HOV lanes and highway widening for new express lanes. The project limit is approximately 20 miles because of the need to install express lanes signs and equipment 1 mile in advance of the actual express lane entrance. **Figure 1-1** shows the general location of the proposed improvements extending along I-80 from post mile (PM) R10.4 to 30.2 and passing through the cities of Fairfield and Vacaville.

The project may be constructed under a single construction contract or in phases depending on available funding. If phasing occurs, the first phase of the project (West Segment) would include the conversion of the existing HOV lane to a new express lane facility along I-80 from the Red Top Road interchange to the Air Base Parkway interchange, including the area around the I-80/I-680 interchange. In the West Segment, existing HOV lanes in both the eastbound and westbound direction would be restriped and repurposed into express lanes. The second phase (East Segment) would construct a new express lane in both the eastbound and westbound directions of I-80 from the Air Base Parkway interchange through the I-80/I-505 interchange. **Figure 1-1** illustrates the limits of the two segments, and **Appendix D** shows the complete layout of both segments of the projects, including proposed improvements.

I-80 is a regional east-west corridor that connects San Francisco and Sacramento, passing through the counties of Contra Costa, Solano, and Yolo. I-80 is heavily-traveled by commuters living in Solano County, traffic to and from Sacramento, recreational travelers on weekends, and interstate travel including the movement of freight and goods.

Caltrans is the lead agency for preparing the environmental document in compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

1.2 STATE/REGIONAL/LOCAL PLANNING

In early 2006, MTC began study efforts to determine the feasibility of a regional express lane network in the San Francisco Bay Area. The study examined the institutional, financial, and technical merits of implementing an express lane network, including cost and revenue estimates, as

well as design approaches. The corridor analyses found that express lanes over the majority of the identified network were feasible if some flexibility was provided in the design approach for areas with significant physical, environmental, or financial challenges.

In 2009, the MTC adopted the Regional Transportation Plan (RTP), Transportation 2035 - Change in Motion for the San Francisco Bay Area. The RTP sets forth the agency's vision of "an integrated, market-based pricing system for the region's carpool lanes (via a regional express lane network)" to help manage the demand on mature transportation systems and, as a source of revenue, to fund infrastructure improvements. The MTC 2009 RTP identifies I-80 as a priority corridor and includes the West Segment portion of the project as part of the larger MTC Phase 1 Project.

The project is consistent with the MTC Transportation 2035 Plan for the San Francisco Bay Area, and is an element of MTC's 533-mile "backbone" network for express lanes in the San Francisco Bay Area, as described in MTC's Express Lane Backbone Network PSR (RTP ID 240581 and 230660).

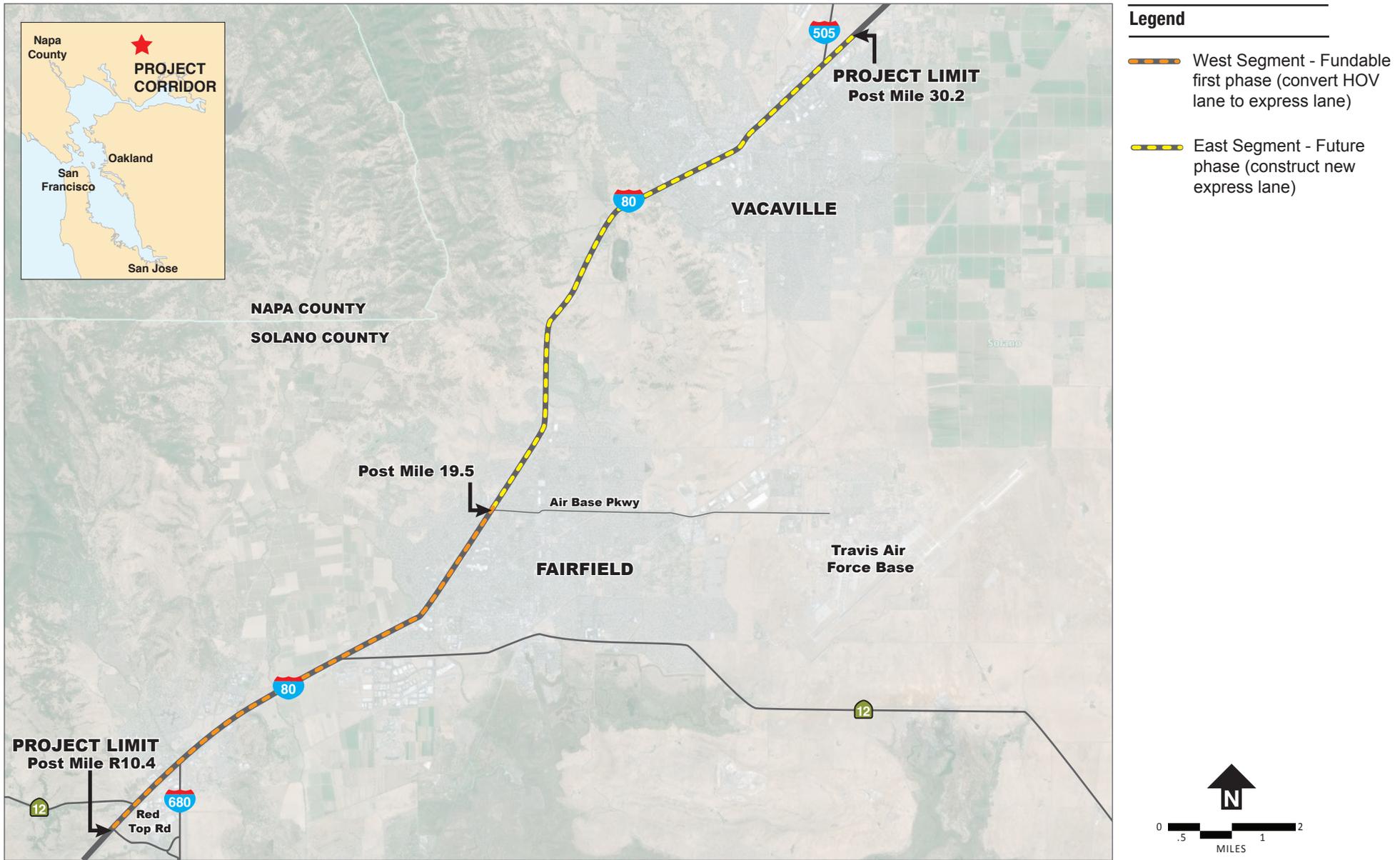
The project is included in the MTC's 2013 Transportation Improvement Program (TIP) as project number SOL110001.¹ MTC approved the financially constrained TIP through Amendment No. 2013-16 on May 28, 2014. The Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) approved and incorporated the TIP in to the Federal Statewide Transportation Improvement Program (FSTIP) on June 12, 2014.

1.3 PURPOSE AND NEED

1.3.1 PURPOSE

The purpose of the project is to provide an immediate benefit to the traveling public by maximizing the use of the existing freeway infrastructure and expanding capacity in a limited/constrained right-of-way (ROW) to move vehicles through the corridor efficiently. The project would strive to meet the following objectives:

- Offer non-carpool eligible drivers a reliable travel time option;
- Improve public transit utilization by reducing public transit travel times in the corridor; and
- Increase vehicle and passenger throughput and decrease congestion through:
 - Better utilization of existing HOV lane capacity from Red Top Road to east of Air Base Parkway; and
 - Increasing capacity to meet existing and future travel demand from east of Air Base Parkway to I-505.



Project Location

Figure 1-1

1.3.2 NEED

There are a number of existing deficiencies on I-80 that hinder the efficient movement of traffic. These deficiencies form the basis for the need for the project and are categorized below.

CAPACITY AND TRANSPORTATION DEMAND

Existing Capacity

During the weekday morning and evening peak commute hours, slowing occurs on both eastbound and westbound I-80. Factors that contribute to the slowing of I-80 traffic between the I-680 Interchange and the State Route 12 (SR 12) East (to Rio Vista) Interchange include closely spaced ramps, high vehicular volumes merging and diverging from the general purpose travel lanes, and truck movements to and from the Cordelia Truck Scales. Factors that contribute to slowing of traffic between Travis Boulevard and Lagoon Valley Road/Cherry Glen Road include high traffic volumes associated with popular destinations such as Travis Air Force Base and retail areas within the Solano Mall; and the curvature and roadway grades near Lagoon Valley Road/Cherry Glen Road. The slowing of westbound I-80 traffic between the Jameson Canyon Road/SR 12 West Interchange and Red Top Road is also exasperated by the lane drop from five lanes to four lanes in this location.

Underutilized HOV Lanes

The existing HOV lanes between Red Top Road and Air Base Parkway are underutilized during peak commute periods. During 2011, passenger occupancy counts were performed. Utilization in the existing HOV lanes ranged from 12 to 24 percent during the morning peak hours and 18 to 34 percent during the evening peak hours.² This leaves 66 to 88 percent remaining available capacity that is not being utilized. These numbers indicate an unused capacity in the HOV lane where the potential exists to “sell” the available capacity to toll-paying drive-alone users. This underutilized capacity in the HOV lanes results in increased congestion and slower speeds in the general purpose lanes during peak commute periods. Available unused capacity in the existing HOV lane system needs to be utilized to increase vehicle throughput and decrease congestion.

Future No Build Conditions

Projections of future conditions on the I-80 corridor within the project limits indicate that the demand for travel is expected to be at capacity during peak periods, adversely affecting travel speeds and creating bottlenecks at constrained locations. It is projected that the number of vehicles using this segment of I-80 will increase by up to 35 percent by the year 2040. The forecasted conditions indicate a level of congestion that is also expected to cause minor increases in the amount of diversion of through traffic onto local streets, degrade air quality, reduce public transit service reliability, and increase the potential for congestion-related collisions.

² Utilization was based on HOV lane capacity of 1,650 vehicles per hour per lane (vphpl), which is the typical acceptable flow rate for an HOV lane.

Level of Service (LOS) is a measure of 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). LOS E or F is typically considered unacceptable by Caltrans, and indicates a need for improvement.

Currently slowing occurs on both eastbound and westbound I-80 during weekday morning and evening peak periods, due to factors such as closely spaced ramps, high vehicular volumes merging and diverging, truck movements to and from the Cordelia Truck Scales, and roadway grades and curvature. Areas of slowing include I-80 between the I-680 Interchange and the SR 12 East (to Rio Vista) Interchange, I-80 between Travis Boulevard and Lagoon Valley Road/Cherry Glen Road, and I-80 between the Jameson Canyon Road/SR 12 West Interchange and Red Top Road. Traffic conditions will continue to worsen in both the westbound and eastbound direction of I-80 in the near term (2020) and long-term (2040) in certain segments within the project corridor.

The following locations will operate at LOS D on westbound I-80 during the morning peak period (2020):

- I-80 between Mason Street and Davis Street
- I-80 between Davis Street and Alamo Drive
- I-80 between Alamo Drive and Cherry Glen Road
- I-80 between Cherry Glen Road and Pena Adobe Road/Rivera Road/Pleasant Valley Road
- I-80 between Pena Adobe Road/Rivera Road/Pleasant Valley Road and Lagoon Valley Road/Cherry Glen Road
- I-80 between Lagoon Valley Road/Cherry Glen Road and Manuel Campos Parkway/North Texas Street
- I-80 between Manuel Campos Parkway/North Texas Street and Air Base Parkway/Waterman Boulevard
- I-80 between Air Base Parkway/Waterman Boulevard and Travis Boulevard
- I-80 between West Texas Street/Rockville Road and Abernathy Road
- I-80 between Abernathy Road and SR 12 East
- I-80 between SR 12 East and truck scale

I-80 between the truck scale and Suisun Valley Road/Pittman Road will decrease to LOS E.

Near-term (2020) traffic conditions would operate at LOS D at the following locations on westbound I-80 during the PM peak hour:

- I-80 between Mason Street and Davis Street
- I-80 between Cherry Glen Road and Pena Adobe Road/Rivera Road/Pleasant Valley
- I-80 between Truck Scale and Suisun Valley Road/Pittman Road

Generally, all segments of westbound I-80 operate at a LOS D or better except for I-80 between the truck scale and Suisun Valley Road/Pittman Road which operates at a LOS E. This segment experiences congestion and queuing because of some merging issues experienced by trucks trying to merge from the westbound truck scale on-ramp.

LOS at the following locations will operate at LOS D on eastbound I-80 during the evening peak period in year 2020:

- I-80 between SR-12 West and I-680
- I-80 between I-680 and Suisun Valley Road/Pittman Road
- I-80 between Suisun Valley Road/Pittman Road and Truck Scales
- I-80 between SR-12 East and Abernathy Road
- I-80 between Abernathy Road and West Texas Street
- I-80 between West Texas Street and Beck Avenue
- I-80 between Beck Avenue and Travis Boulevard
- I-80 between Travis Boulevard and Air Base Parkway/Waterman Boulevard
- I-80 between Air Base Parkway/Waterman Boulevard and Manuel Campos Parkway/North Texas Street
- I-80 between Manuel Campos Parkway /North Texas Street and Lagoon Valley Road/Cherry Glen Road
- I-80 between Lagoon Valley Road/Cherry Glen Road and Pena Adobe Road/Rivera Road/Cherry Glen Road
- I-80 between Pena Adobe Road/Rivera Road/Cherry Glen Road and Alamo Drive
- I-80 between Alamo Drive and Davis Street
- I-80 between Davis Street and Peabody Road
- I-80 between Peabody Road and Monte Vista Avenue/Allison Drive/Nut Tree Parkway

Future traffic conditions will worsen in the westbound direction of I-80 in the long term (2040) in certain segments within the project corridor, specifically in the morning peak hour. The LOS at the following locations will operate at LOS D or LOS E:

- I-80 between I-505 and E. Monte Vista Avenue (LOS D)
- I-80 between E. Monte Vista Avenue and Mason Street (LOS D)
- I-80 between Mason Street and Davis Street (LOS E)
- I-80 between Davis Street and Alamo Drive (LOS E)
- I-80 between Alamo Drive and Cherry Glen Road (LOS E)
- I-80 between Cherry Glen Road and Pena Adobe Road/Rivera Road/Pleasant Valley Road (LOS D)
- I-80 between Pena Adobe Road/Rivera Road/Pleasant Valley Road and Lagoon Valley Road/Cherry Glen Road (LOS D)
- I-80 between Lagoon Valley Road/Cherry Glen Road and Manuel Campos Parkway/North Texas Street (LOS D)
- I-80 between Manuel Campos Parkway/North Texas Street and Air Base Parkway/Waterman Boulevard (LOS D)
- I-80 between Air Base Parkway/Waterman Boulevard and Travis Boulevard (LOS D)
- I-80 between Travis Boulevard and West Texas Street/Rockville Road (LOS D)
- I-80 between West Texas Street/Rockville Road and Abernathy Road (LOS E)
- I-80 between Abernathy Road and SR 12 East (LOS D)
- I-80 between SR 12 East and Truck Scale (LOS E)
- I-80 between Truck Scale and Suisun Valley Road/Pittman Road (LOS E)
- I-80 between Suisun Valley Road/Pittman Road and Green Valley (LOS D)
- I-80 between Red Top Road and American Canyon Road (LOS D)

Long-term (2040) traffic conditions would operate at LOS D or LOS E on westbound I-80 at the following locations during the PM peak hours:

- I-80 between Leisure Town Road and I-505 (LOS D)
- I-80 between I-505 and E. Monte Vista Avenue (LOS D)
- I-80 between E. Monte Vista Avenue and Mason Street (LOS D)

- I-80 between Mason Street and Davis Street (LOS E)
- I-80 between Davis Street and Alamo Drive (LOS E)
- I-80 between Alamo Drive and Cherry Glen Road (LOS E)
- I-80 between Cherry Glen Road and Pena Adobe Road/Rivera Road/Pleasant Valley (LOS D)
- I-80 between Pena Adobe Road/Rivera Road/Pleasant Valley and Lagoon Valley Road/Cherry Glen Road (LOS D)
- I-80 between Lagoon Valley Road/Cherry Glen Road and Manual Campos Parkway/N. Texas Street (LOS D)
- I-80 between Manuel Campos Parkway/N. Texas Street and Air Base Parkway/Waterman Boulevard (LOS D)
- I-80 between Air Base Parkway/Waterman Boulevard and Travis Boulevard (LOS D)
- I-80 between W Texas Street/Rockville Road and Abernathy Road (LOS D)
- I-80 between Abernathy Road and SR-12 East (LOS D)
- I-80 between SR 12 East and Truck Scale (LOS D)
- I-80 between Truck Scale and Suisun Valley Road/Pittman Road (LOS E)
- I-80 between Red Top Road and American Canyon Road (LOS D)

Long-term (2040) traffic conditions would operate at LOS D or LOS E on eastbound I-80 at the following locations during the PM peak hours:

- I-80 west of American Canyon Road (LOS D)
- I-80 between American Canyon Road and Red Top Road (LOS D)
- I-80 between Route 680/SR 12 and Green Valley/Lopes Road (LOS D)
- I-80 between Green Valley/Lopes Road and Suisun Valley Road/Pittman Road (LOS D)
- I-80 between Suisun Valley Road/Pittman Road and Truck Scales (LOS D)
- I-80 between SR-12 East and Abernathy Road (LOS D)
- I-80 between Abernathy Drive and West Texas Street (LOS D)
- I-80 between West Texas Street and Beck Avenue (LOS D)
- I-80 between Beck Avenue and Travis Boulevard (LOS E)

- I-80 between Travis Boulevard and Air Base Parkway/Waterman Boulevard (LOS D)
- I-80 between Air Base Parkway/Waterman Boulevard and Manuel Campos Parkway/North Texas Street (LOS D)
- I-80 between Manuel Campos Parkway/North Texas Street and Lagoon Valley Road/Cherry Glen Road (LOS E)
- I-80 between Lagoon Valley Road/Cherry Glen Road and Pena Adobe Road/Rivera Road/Cherry Glen (LOS E)
- I-80 between Pena Adobe Road/Rivera Road/Cherry Glen and Alamo Drive (LOS E)
- I-80 between Alamo Drive and Davis Street (LOS D)
- I-80 between Davis Street and Peabody Road (LOS E)
- I-80 between Peabody Road and Monte Vista Avenue/Allison Drive/Nut Tree Parkway (LOS D)
- I-80 between I-505/Orange Drive and Leisure Town Road (LOS D)

PUBLIC TRANSIT UTILIZATION

Fairfield and Suisun Transit, Rio Vista Delta Breeze, Vallejo Transit and Yolo Bus operate public bus systems within the project limits. In addition, Fairfield and Suisun Transit operates Solano Express regional routes, Americans with Disabilities Act (ADA) paratransit service and reduced fare taxi program. Bus routes utilizing the corridor within the project limits include:

- Fairfield-Suisun Transit Express Bus Routes 20, 30, 40, and 90
- Delta Breeze Routes 50 and 52
- Vallejo Transit Bus Route 85
- Yolo Bus Route 220

Additionally, private transit services, such as recreational buses to the Lake Tahoe region and the University of California Intercampus Bus between Davis and Berkeley, must also travel in the general purpose lanes along the I-80 corridor between Fairfield and Vacaville. By having to travel in the general purpose lanes of the East Segment, transit vehicles do not provide a significant travel time savings over single-occupant vehicles in this portion of the corridor. This reduces the incentive for commuters and other travelers to utilize transit options along the I-80 corridor.

1.3.3 INDEPENDENT UTILITY AND LOGICAL TERMINI

Logical termini for a project are defined as rational end points for transportation improvements. These rational end points should facilitate a thorough review of the environmental impacts. A

project with independent utility is defined as improvements that are usable and provide a reasonable expenditure even if no additional transportation improvements are made in the area.

As part of the traffic operations analysis conducted for this project, several configurations of the express lanes beginning and end points were evaluated (see **Alternatives Considered but Eliminated from Further Discussion**). The current project limits west of Red Top Road to east of I-505 showed the most significant benefits in traffic operations along I-80. The current project limits therefore reflect the most logical termini for the I-80 corridor.

The project would reduce traffic congestion without additional improvements, other than what is being proposed, within or adjacent to the project limits. Although the project would contribute to the furtherance of the regional express lane network described in **Section 1.2, State/Regional/Local Planning**, it would be useable and require a reasonable expenditure even if no additional transportation improvements in the area are made; the construction or conversion of other express lanes are not necessary for this project to meet the goals noted above. The I-80 express lanes from west of Red Top Road to east of I-505 would provide the same benefit regardless of whether or not other projects in the area, such as those listed in the *No Build (No Action) Alternative* section, move forward. Moreover, the project has its own funding and is not dependent on any other projects for such funding.

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. Finally, the projects listed in the *No Build (No Action) Alternative* section could proceed without the conversion of HOV lanes to express lanes in the project area.

WEST SEGMENT – FUNDABLE FIRST PHASE

The project may be constructed under a single construction contract or in multiple phases depending on funding. If phasing occurs, the first phase would consist of the West Segment and would include the conversion of existing HOV lanes into new express lanes along I-80 from the Red Top Road interchange to the Air Base Parkway interchange, including the area around the I-80/I-680 interchange. In the West Segment, existing HOV lanes in both the eastbound and westbound direction would be restriped and repurposed into express lanes. In the opening year (year 2020) condition, the West Segment improvements are forecasted to result in overall travel time savings, and increased overall travel speeds when compared to the No-Build condition, while also providing LOS B conditions or better in the new express lane (see **Section 2.1.7, Traffic and Transportation/Pedestrian and Bicycle Facilities**). This indicates that the West Segment has logical termini and independent utility in providing near-term operational benefits to travelers using the I-80 corridor.

1.4 PROJECT DESCRIPTION

This section describes the proposed action and the design alternative that was developed to meet the purpose and need of the project: the “Build Alternative” and the “No-Build Alternative.” The project would provide express lanes in both westbound and eastbound direction of I-80 from west

of Red Top Road to the east of I-505, within Solano County, California. The project would construct approximately 18 miles of express lanes in the I-80 corridor through conversion of existing HOV lanes and highway widening for new express lanes. The project limit is approximately 20 miles because of the need to install express lanes signs and equipment 1 mile in advance of the actual express lane entrance. The general location of the proposed improvements extends along I-80 from post mile (PM) R10.4 to 30.2 and passing through the cities of Fairfield and Vacaville. The purpose of the project is to provide an immediate benefit to the traveling public by maximizing the use of the existing freeway infrastructure in a limited/constrained right-of-way to move vehicles through the corridor efficiently. **Figure 1-1** shows the general location of the proposed improvements.

1.4.1 PROJECT COST AND FUNDING

CONSTRUCTION COST

The estimated construction cost of the proposed improvements, in 2014 dollars, for the Build Alternative is \$166,800,000. Construction of the West Segment is \$41,900,000. The breakdown of the cost is provided in **Table 1-1**.

Table 1-1 Construction Cost Estimate Summary

	Build Alternative (West and East Segments)	West Segment (Fundable First Phase)
Construction	\$107,500,000	\$24,700,000
Right-of-Way	\$1,500,000	\$100,000
Tolling System Integration (design, installation, and maintenance)	\$21,100,000	\$9,100,000
Capital Outlay Support	\$35,000,000	\$7,200,000
Utility Service	\$1,500,000	\$600,000
Total Cost	\$166,600,000	\$41,700,000

Note: Cost estimates are in 2014 dollars.
Source: Draft Project Report, 2015

FUNDING

The current estimated total project cost is \$166.6 million (\$41.7 million for the West Segment), which includes project development, engineering, right of way acquisition, utility relocation, construction capital, and construction support. Currently, the project has \$236.8 million committed in MTC's 2015 TIP. Funds allocated in the 2015 TIP include federal, state, and local sources.

1.4.2 ALTERNATIVES

BUILD ALTERNATIVE

The Build Alternative would allow for express lanes in both the westbound and eastbound direction of I-80 from west of Red Top Road to east of I-505, a distance of approximately 18 miles through

conversion of existing HOV lanes and highway widening for new express lanes. The project limits are approximately 20 miles because of the need to install express lanes signs and equipment 1 mile in advance of the actual express lane entrance. The Build Alternative would implement a continuous access design, and consist of the following primary improvements, discussed in detail further below:

- Installation of static or dynamic signs, electronic tolling equipment, and toll collection
- Retrofit of existing California Highway Patrol (CHP) observation areas
- Mainline restriping and widening
- Installation of ancillary components such as electrical power and communication conduits and any Caltrans required traffic control devices.

The Build Alternative may be constructed under a single construction contract or in phases depending on funding. If phasing occurs, the first phase of the project (West Segment) would include the conversion of existing HOV lanes into express lanes along I-80 from the Red Top Road interchange to the Air Base Parkway interchange, including the area around the I-80/I-680 interchange. The East Segment would construct a new express lane in both the eastbound and westbound directions of I-80 from the Air Base Parkway interchange through the I-80/I-505 interchange. Specific improvements that are physically located within the West Segment are identified where appropriate (i.e., auxiliary lanes, etc.).

For the West Segment, additional work includes the extension of the existing auxiliary lane along eastbound I-80 between Beck Avenue on-ramp and Travis Boulevard off-ramp. This improvement would increase the weaving area between the auxiliary lane and general purpose lanes. The existing off-ramp would be modified into two separate off-ramps. This work would require pavement widening; re-striping; sign and lighting installation; and drainage system improvements.

For the East Segment, the major work includes I-80 inside median pavement widening to provide room for the new express lanes which would require removal of existing median landscaping. The new express lanes require new pavement; concrete barriers; retaining walls; bridge widening at Ulatis and Horse Creeks; median widening at Davis Street and Mason Street undercrossings; new tie-back retaining walls at the eastbound I-80 and northbound I-505 Connector and Cherry Glen overcrossing; drainage culvert extensions; parcel acquisition; and utility/temporary construction easements.

Appendix D includes detailed exhibits of the improvements that would be constructed under the Build Alternative. **Chapter 2.0, Affected Environmental Consequences, Avoidance, Minimization, and/or Mitigation Measures**, of this environmental document evaluates the potential effects of the full Build Alternative, including the potential initial phase of construction (West Segment). The environmental consequences and avoidance, minimization and/or mitigation measures specific to the West Segment are identified where appropriate.

Express Lane Operations

Continuous Access and Lane Configuration

Access is one of the most important design features for express lanes due to impacts associated with operation, performance, enforcement, and tolling requirements. Consistent with other express lanes that are currently being planned and implemented in the Bay Area, the I-80 express lanes would allow continuous access between the express lane and the adjacent mixed-flow (general purpose) lane. The express lanes would be designated using a skip-striping pavement marking. The diamond markings on existing HOV lanes would be permanently removed. The express lane width would be 12-foot wide where feasible.

Under this configuration all eligible users, including HOVs, motorcycles, buses, decal vehicles as authorized by the California Air Resources Board, and toll-paying single occupant vehicles, will be able to access the express lane during the hours of operation. Eligible vehicles with HOV status will continue to use the I-80 express lanes for free. Solo users, for whom time saving is of a value, who want a more convenient and reliable trip can choose to use the new express lane for a dynamically charged fee. The toll that is charged will vary depending on the real-time traffic operating conditions in both the express lane and in the general purpose lanes. Two-axle, delivery-type trucks would also be allowed to use the new converted facility for a fee, but trucks with three or more axles would be excluded from the lane.

Bay Area HOV lanes currently operate during the morning and evening peak commute periods and serve as general purpose lanes during all other times. The existing HOV lanes within the West Segment currently operate Monday to Friday between 5 to 10 AM and 3 to 7 PM. The expected express lane hours of operations would maintain the existing HOV lane time periods.³

Enforcement

Per statutes (Streets and Highways Code, Section 149) HOVs are allowed to use express lanes free of charge. The proposed express lanes would operate with a two-or-more (2+) person per vehicle requirement, as determined by Caltrans. The express lanes would also provide solo drivers the choice to pay a toll electronically to use the lane.

Toll violation will be enforced through an automated violation process. License Plate Recognition (LPR) cameras would capture license plate images of vehicles that do not display a recognizable toll transponder.

Although the use of LPR and toll transponders would automate toll violation enforcement, CHP field personnel would still be required to perform occupancy enforcement. CHP enforcement responsibilities would focus on occupancy verification and other traffic violations (i.e., illegal access in restricted zones and speeding). To allow CHP enforcement of the express lanes, protected observation areas would be provided within the freeway median for the officers to safely park their

³ State legislation requires that the express lane hours of operation be consistent with the operating hours of the HOV lane. Therefore, the final decision on operating hours will be recommended by the HOV Lane committee, which is comprised of representatives from Caltrans, CHP, and MTC.

vehicles to conduct occupancy verification and traffic observation. The CHP observation areas would be located within the 22 foot wide highway median. The center of the CHP area would accommodate a 25 feet long by 12 feet (face of barrier to face of barrier) wide CHP cruiser pad which would be elevated 18 inches above the roadway pavement elevation. The CHP pad would be protected by concrete barriers on both sides. A toll gantry would be located 85 feet from center of the CHP cruiser pad. The nonstandard inside shoulders adjacent to the CHP observations areas would require Caltrans approval. Potential CHP observation areas are identified in **Table 1-2**. There are two existing CHP observation areas within the West Segment that would be modified under the Build Alternative to conform to current CHP observation standards. All of the proposed CHP observation areas would provide directional access to eastbound I-80, with the majority providing bi-directional access to both eastbound and westbound travel lanes.

Table 1-2 Potential CHP Observation Areas

General Location Description	Direction	Post Mile
West Segment		
Existing area between WB SR 12 OC and Green Valley Road OC	EB	12.1
Existing area between Suisun Creek Bridge and EB SR 12 OC	WB & EB	15.2
East Segment		
Proposed between Air Base Parkway OC and North Texas Street	WB & EB	20.2
Proposed between Allison Drive OC and Nut Tree Road OC	WB & EB	27.4

Notes: SR = State Route; OC = overcrossing; EB = eastbound; WB = westbound
Source: Draft Project Report, 2014

Electronic Tolling

The toll rate for solo drivers who choose to use the express lane would change depending on the level of traffic congestion and distance traveled. During periods of lower traffic congestion, the toll will be lower. The lower toll rates encourage more single-occupant vehicles to pay the toll and make use of the additional capacity of the express lane. During the hours of operation when there is more traffic congestion on the freeway, the toll to access the express lane will be higher. The higher toll rates discourage more single-occupant vehicles from using the express lane, which frees up space within the express lane and allows for more free-flowing traffic conditions. The tolling operation will be fully electronic, collected from registered motorists who carry in-vehicle-mounted FasTrak® transponders, with no requirement to stop and make cash payments for a trip.

There are four proposed tolling zones, two within each segment of the project corridor. Each toll zone would include all subsystems relative to toll collection, photographic enforcement for violations, vehicle classification detection, enforcement personnel provision, and communication with the toll integrator's control center. Each toll zone would contain the following equipment serving the toll collection and violation enforcement systems: cantilevered gantry; antenna; toll

reader; vehicle sensor; rear-plate facing camera; rear-plate facing light and enforcement beacons; PTZ (pan tilt zoom) CCTV (closed circuit television) cameras; MVDS (magnetometer vehicle detector station) and related equipment would also be installed to monitor the congestion in the express lanes.

The first Variable Toll Message Sign (VTMS) would be installed approximately 0.5 to 1 mile before the start of the express lane. Subsequent VTMS would have an approximate spacing of 1.5 to 2 miles. The first toll reader would be located within 1,000 feet after the entrance sign. Subsequent toll readers will be placed downstream of their respective VTMS. Multiple read points may be installed for a single VTMS. The distance between a VTMS and its last read point pairing will be no more than 1 to 1.5 miles. The factors which will affect the placement of VTMS and toll readers beyond system requirements include: spacing between interchanges, visibility of signs, spacing with existing overhead signs, conflicts with existing facilities, and environmental impacts.

Figure 1-2 illustrates the gantry/reader structure that would support the tolling equipment. The overhead sign structures would also include toll reader and toll enforcement equipment.

The tolling equipment would be mounted on a single 12-inch diameter post on a standard foundation, or attached to an overhead sign structure. It would be on a cast-in-drilled-hole pile foundation with an expected pile depth of 11 feet and maximum 36-inch diameter foundation. The expected barrier width adjacent to the electronic tolling equipment would be between 4 feet and 8 feet. In constrained areas, steel plates would be used to minimize impact along the inside shoulder resulting in a barrier width of 3 feet-8 inches. The 1 foot-7 inch diameter base plate would be located on top of the concrete barrier.

The PTZ, CCTV and MVDS equipment would be mounted on standard 40-foot round tapered steel pole. It would be on a cast-in-drilled-hole pile foundation with an expected maximum pile length of 8 feet 6-inches and maximum 2 feet-6 inches diameter foundation and located along the outside of the highway pavement.

Variable pricing would be the principal mechanism for access to the proposed express lanes. The price would be adjusted depending on the existing congestion and available capacity on the express lanes. By raising or lowering the toll in response to the level of demand, this dynamic pricing effectively manages the volume of traffic in the express lanes, ensuring that traffic flows smoothly. VTMS will communicate to drivers the toll to travel in the current zone as well as the toll to popular destinations at the end of the segment.

Signage

The express lanes would include several types of signs to provide graphic or text messages that inform motorists of pricing by toll zone, and operating rules. A total of 68 overhead sign structures have been proposed for this project:

- 39 new signs would be constructed in the East Segment
- 29 new signs would be constructed in the West Segment

A summary of the sign types is provided below.

- **Static/Non-Electrical Signs**
 - *Express Lane Entrance Signs* – 1-mile and 0.5-mile in advance of the express lane entrance, sign panels displaying the express lane operating rules and distance to the express lane entrance would be mounted on overhead sign structures.
 - *FasTrak® Signs and Toll Readers* – overhead sign structures indicating HOV and FasTrak® use only would be placed at intervals to alert new drivers merging to I-80 about the lane restriction. Toll readers will be placed at approximately 1 mile spacing. Wherever possible, the toll readers will be mounted on the proposed FastTrak® signs. In some cases, the toll readers will be mounted on a modified street light pole (gantry). In restricted conditions, the toll readers may be mounted on the proposed VTMS. For every toll reader, a set of toll enforcement equipment will be installed. Depending on site restrictions and design constraints, the enforcement equipment may either be mounted on the same overhead structure/gantry with the toll readers, or mounted separately on poles on existing median concrete barrier.
- **Dynamic/Variable Signs**
 - *Variable Toll Message Sign* – Dynamic electronic message signs would display the toll pricing for the current zone as well as the following zone. The price would change depending on the congestion level and available capacity in the express lanes. The panel size would vary depending on the sign type. The maximum panel size is 29 feet long by 13 feet high. **Figure 1-3** provides illustrations of the types of VTMS signs that would be installed along the I-80 express lanes.

Smaller signs would be post-mounted on the existing freeway concrete median barrier, while larger signs would be mounted on cantilevered overhead sign structures spanning above the express lane. The total height of the overhead sign structure (including the sign) would depend on the type of sign being mounted. All overhead sign structures would have a maximum height of approximately 35 feet and be either supported on a cast-in-drilled-hole pile foundation, or supported on a retaining wall structure.

The panel size would vary depending on the sign type, as illustrated in **Figure 1-3**. The static/non-electrical signs that would be the most common overhead sign type within the project corridor would be approximately 17 feet long by 6 to 7 feet high. The maximum panel size would be associated with the VTMS signs, which are designed to be approximately 29 feet long by 13 feet high.

Auxiliary Lane Realignment (West Segment)

The existing auxiliary lane along eastbound I-80 between the Beck Avenue on-ramp and Travis Boulevard off-ramp would be extended by approximately 752 feet in order to increase the length of the weaving area between the auxiliary lane and general purpose lanes. The existing off-ramp

would be modified into two separate off-ramps. The proposed off-ramp to eastbound Travis Boulevard would be 17 feet east of the existing off-ramp, and would be constructed as a standard single exit ramp. The new off-ramp to westbound Travis Boulevard would be approximately 752 feet east of the existing off-ramp. This work would require pavement widening, re-striping, sign and lighting installation, and drainage system improvements.

Modified/Replaced Structures (East Segment)

Table 1-3 identifies the six overcrossing and undercrossing structures that would be widened or modified to accommodate widening of I-80 within the East Segment of the project limits. The conversion of the existing HOV lanes in the west segment of the project limits would not require the modification of existing structures along I-80.

Table 1-3 Modified/Replaced Structures (East Segment)

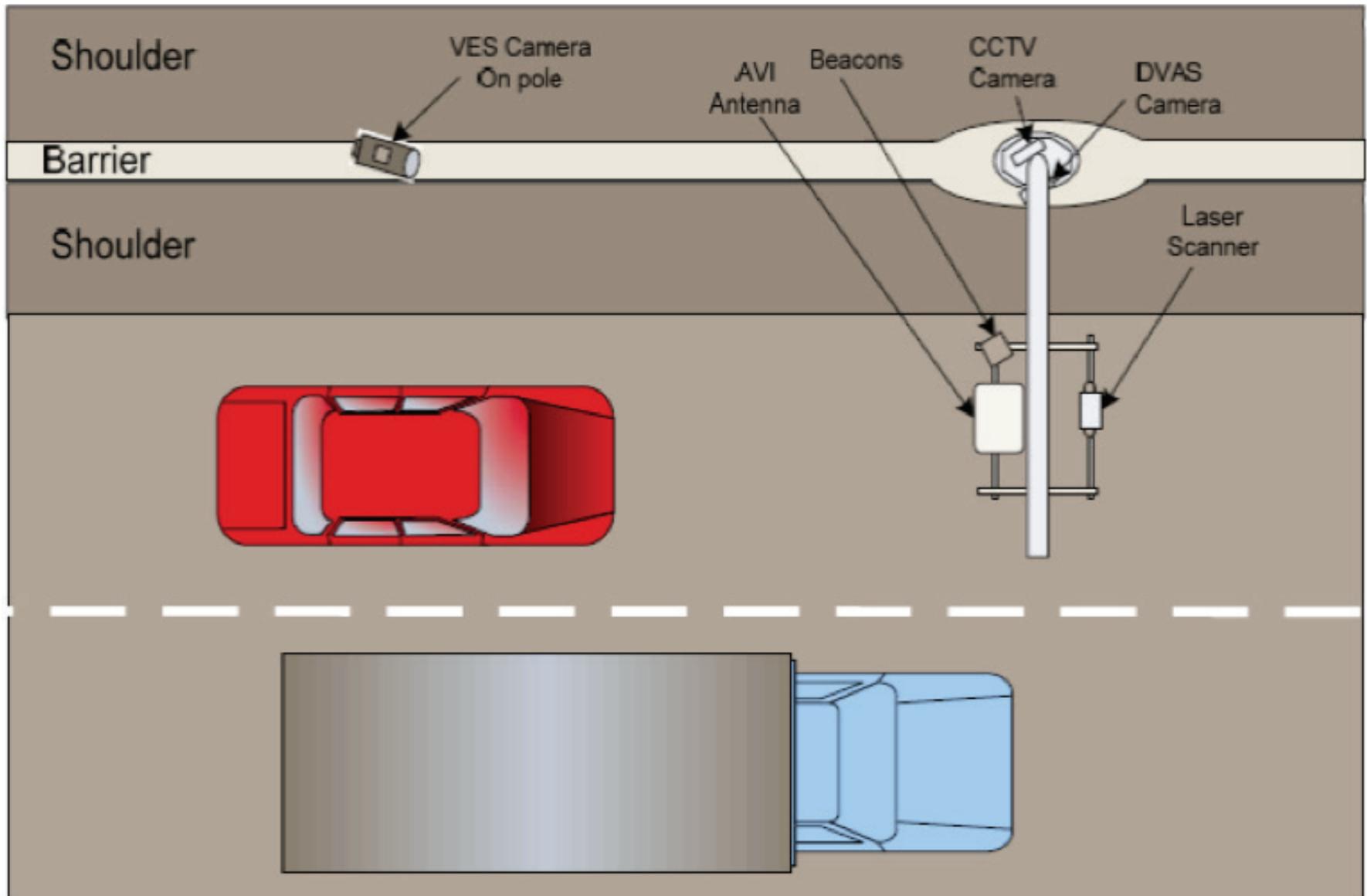
Structure	Post Mile	Modification	Description
Cherry Glen Road OC	23.13	Abutment Wall Modification	Tie-Back Retaining Wall
Davis Street UC	26.00	Deck Widening	Inside Widening
Mason St. UC	26.46	Deck Widening	Inside Widening
Ulati Creek Bridge	26.61	Deck Widening	Inside Widening
EB I-80/NB I-505 Connector	28.36	Abutment Wall Modification	Tie-Back Retaining Wall
Horse Creek Bridge	R28.57	Deck Widening	Inside and Outside Widening

Table Notes: OC = overcrossing; UC = undercrossing; EB = eastbound; NB = northbound
Source: Draft Project Report, 2014

Retaining Walls and Proposed Sound Walls

Extensive retaining walls would be constructed to address ROW and environmental constraints while accommodating the northbound I-80 widening associated with the East Segment of the Build Alternative. Three retaining earth systems are proposed along the outside and two in the median of eastbound and westbound I-80 within the East Segment. Retaining wall heights would vary from 1 to 15 feet (see **Table 1-4**). No retaining walls are proposed in the West Segment

The project would include construction of a sound wall in the East Segment along eastbound I-80 from the Ulati Creek Bridge to the Allison Drive off-ramp (see **Section 2.2.7, Noise**). The final decision for sound wall construction would be made upon completion of the project design and the public involvement process. No sound walls are currently proposed in the West Segment.



Tolling System Design and Operations

Figure

Ancillary Project Components

Storm Water Treatment

Runoff from the freeway is generally conveyed to existing dikes and overside drains. The existing drainage patterns are not expected to change within the West Segment. The quantity of added impervious area would not be significant enough to change the drainage flow rate, and all storm water runoff would be properly conveyed through pipe, ditches, and bioretention swales in the West Segment. Minor modifications to these drainage systems would be required to accommodate the proposed freeway widening within the East Segment. Where feasible, dikes and overside drains would be constructed to replace existing systems. Locations where walls and barriers are installed, pipe and inlet drainage systems would be installed to convey water back to roadside systems. Existing depressed median drainage systems would be capped and abandoned.

Drainage crossing I-80 would be extended. Additional drainage structures would also be constructed to mitigate water quality and hydromodification impacts for the proposed improvements.

The proposed permanent storm water treatment facilities for the Build Alternative would include biofiltration strips, biofiltration swales, detention basins, and sand filters. Biofiltration strips are vegetated sections with a compost blanket and hydroseeding, where storm water sheet flows. Biofiltration swales are vegetated ditches with hydroseed on the side slopes, a layer of imported biofiltration soil underneath, and a layer of permeable material with an underdrain further below, where storm water is in concentrated flow. Detention basins temporarily detain storm water and reduce sediment and particulate loading by storing storm water in a basin and discharging through a water quality outlet/riser with openings. A typical sand filter system consists of two or three chambers, which remove floatables and heavy sediments. Treated filtrate is discharged through an underdrain system either to a storm drainage system or directly to surface waters. Sand filters take up little space and can be used on highly developed sites.

Electric Conduit

The variable signs and tolling equipment would be connected to electrical power and communication sources that are independent of existing Caltrans systems. Some static signs would require electrical power for lighting. The conduits and fiber would be extended from existing sources and would require trenching and/or horizontal directional drilling to bring these services to the service equipment enclosure, telephone demarcation cabinet, controllers, signs and tolling equipment. Trenching would be approximately 1-foot wide and 30 inches to 5-feet deep. The horizontal directional drilling may be as deep as 5 feet but the depth would depend on the location of existing utilities within the vicinity of the proposed drilling location. The boring and receiving pits may be up to 10 feet wide. Installation of pull boxes and electrical systems such as service equipment enclosures, telephone demarcation cabinets, controllers, and foundation pads would follow Caltrans standards. The maximum foundation pad footprint would be 3 feet by 4 feet with a maximum depth of 2 feet. In unpaved areas, a raised concrete pad in front of the controller cabinet would be required. Temporary construction access to power and communication sources may be

needed. Work associated with bringing electrical power and communication to service enclosure cabinets would be completed by the utility provider and would follow utility provider standards.

Safety Lighting

The Build Alternative would provide enhanced lighting to improve roadway visibility for drivers during nighttime hours. Lighting would be upgraded at ramp merges and diverges. Lighting would also be added to improve visibility at various locations including the express lane entrance and at toll zone boundaries, locations on the highway where visibility is restricted by barriers, locations where the median width is narrow and drivers may be subjected to headlight glare, and locations where concentrations of nighttime accidents are known to have occurred. **Table 1-5** summarizes the locations of new lighting proposed for both the West and East Segments.

Lighting will be provided in the following locations in both the eastbound and westbound direction:

- 1,000 feet approaching the beginning of the express lane
- 2,000 feet at the toll zone change (including 1,000 feet approaching and 1,000 feet departing the toll zone change)
- 1,000 feet departing the end of the express lane
- Mounted on VTMS
- Two lights in each direction (eastbound and westbound I-80) at all proposed CHP observation areas

Table 1-4 Location and Type of Retaining Walls (East Segment)

Retaining System No.	I-80 WB (Outside) (post miles)	I-80 Median (post miles)	I-80 EB (Outside) (post miles)	Retained Height (feet)	Retain Cut/Fill	Ground Behind Proposed Wall	Recommended Retaining Wall System
1	N/A	N/A	20.03 - 20.09	0-1	Fill	Level	Caltrans Standard Retaining Wall
2		21.99 - 22.21	N/A	3-7	Fill	Level	Caltrans Standard Retaining Wall
3		22.34 - 23.14		3-9	Fill	Level	Caltrans Standard Retaining Wall
Cherry Glen Road OC							
4	23.14 - 23.16	N/A	N/A	0-7	Cut	Sloping	Sub-Horizontal Ground Anchored Wall
EB I-80/NB I-505 Connector Separation							
5	N/A	N/A	28.29-28.33	0-15	Cut	Sloping	Sub-Horizontal Ground Anchored Wall

Notes: WB = westbound; EB = eastbound; NB = northbound; OC = overcrossing; post miles are approximate
Source: MTCO, 2014

Table 1-5 Summary of East and West Segment Lighting

I-80 Direction (EB/WB)	Post Miles	Description of Location
West Segment		
EB	11.26-11.45	Beginning of EB express lane near Red Top Road
WB	12.20-12.40	End of WB express lane near Green Valley Road
EB	13.15-13.27	Non-standard weave section near Pittman Road
EB	15.77-16.16	EB toll zone change near Abernathy Road
WB	17.29-17.51	WB toll zone change near West Texas Street
N/A	17.90	Modified Travis Boulevard off-ramp
EB	18.65-18.90	Express lane east of Waterman Boulevard (future phases only)
WB	19.21-19.53	Express lane west of Waterman Boulevard (future phases only)
EB	19.81-20.01	End of EB express lane west of North Texas Street
WB	20.01-20.20	Beginning of WB express lane west of North Texas Street
N/A	12.11 and 15.2	Four lights at CHP observation areas near the existing eastbound (east of SR 12) and westbound (west of Abernathy Road) CHP enforcement areas
East Segment		
EB & WB	20.16 – 20.54	EB toll zone change (butterfly lights in median) near North Texas Street
EB & WB	25.01 – 25.59	EB & WB toll zone change (butterfly lights in median) near Alamo Drive
EB	28.55 – 28.73	End of EB express lane east of I-505
EB	28.60 – 28.90	On-ramp lighting for I-505 and Orange Drive EB I-80 On-Ramps
WB	29.15 – 29.34	Beginning of WB express lane east of I-505
EB & WB	19.98 and 27.65	Four lights (butterfly lights in median) two lights at each proposed CHP observation area

Note: EB= eastbound; WB= westbound; Post miles are approximate
Source: Mark Thomas & Co., 2014, HDR Engineering, Inc. 2014

Right-of-Way Requirements

The existing ROW along I-80 generally accommodates the proposed improvements with a few minor exceptions associated with construction staging and/or utility easements. The majority of ROW requirements involve acquisition of portions (or slivers) of properties along the project corridor. For the West Segment, the ROW requirements involve acquisition of nine (9) utility easements, and minor temporary construction easements. The ROW requirements for the East Segment involve acquisition of a portion of one parcel (from the City of Vacaville at Orange Drive on-ramp) within the project limits, eighteen (18) utility easements, and minor temporary construction easements. No acquisition of any residences or businesses would be required.

Construction

West Segment

The West Segment portion of the project may be constructed first. Construction of the West Segment is anticipated to commence in Spring 2017 and be operational by Fall 2018. In order to minimize delays and congestion caused by construction, it is anticipated that each segment would be constructed in multiple stages and/or multiple work crews. I-80 would generally be open during construction. However, some short-term lane closures may be required during critical construction periods, where freeway traffic cannot be permitted in the construction areas for safety reasons. Any closures would require advance approval by the Resident Engineer and would be allowed only during periods of low traffic defined through traffic studies made during the design phase of the project.

Construction for the West Segment would take approximately 14 months to complete. The work to install the overhead signs and electronic tolling equipment in the median would be coordinated between the civil infrastructure and toll systems work crews, completing the installation of sign structures prior to any tolling equipment being installed. At areas where the existing median is 8 feet wide or less, it is anticipated that the work would be performed during nighttime with temporary freeway and shoulder lanes closures. Where there is substantial space in the median to install temporary railing, work can be performed behind the railing during the daytime and nighttime hours. The remaining activities such as mainline restriping, work adjacent to the outside shoulders and modification of eastbound Travis Boulevard off-ramp would be completed after the median work. These activities would also require temporary freeway lane, shoulder lane or off-ramp closure.

East Segment

Construction for the East Segment would be constructed in two major stages, and would take approximately two years to complete. The first stage would include the median widening and other activities within the median such as installation of overhead signs and electronic tolling equipment. These activities would require the removal of all existing vegetation from the median. This stage would be performed behind temporary railings. The second stage would include the outside pavement widening and other activities to be performed adjacent to the outside shoulder. These activities would require the removal of some roadside vegetation. Work would also be completed

behind temporary railing. The proposed minor ramp work would be accomplished during the second stage. Retaining walls and structure modifications would be constructed with the associated widening work in each stage. It is expected that majority of the work would be done during daytime hours. Some nighttime work may require temporary closures for tasks that could interfere with mainline traffic or create safety hazards such as the proposed pavement resurfacing and mainline restriping. Some temporary nighttime ramp closures may be necessary during paving and striping operations as well.

Transportation Management Plan will be developed, in cooperation with the cities of Fairfield and Vacaville, to provide advance notice to motorists and transportation and emergency service providers of information on construction activities and durations, detours, and access issues during each stage of construction. Specific construction staging requirements will be defined during the final design phase and an actual construction staging plan would be developed by the contractor.

Pavement modifications would typically entail 1 to 2 feet of excavation below the ground surface. Some improvements would entail deeper excavations from the placement of numerous structural pilings, and would be associated with the modification to the existing overcrossing and undercrossing structures in the East Segment, as previously described. Deeper excavations and the placement of numerous structural pilings would occur at depths of no more than 45 feet below ground surface. The majority of the open excavations throughout the Build Alternative improvement areas would vary from 4 to 20 feet below ground surface.

Utility Relocations

The following utility companies have known facilities within the project limits: AT&T, Comcast, City of Fairfield, City of Vacaville, Solano Irrigation District, the Bureau of Reclamation, and PG&E. The Build Alternative would include utility relocations, as necessary, to construct the above-described improvements.

TRANSPORTATION SYSTEM MANAGEMENT (TSM) AND TRANSPORTATION DEMAND MANAGEMENT (TDM) ALTERNATIVES

System management strategies increase the efficiency of existing transportation facilities without increasing the number of through lanes. Examples of system management strategies include ramp metering, auxiliary lanes, turning lanes, reversible lanes and traffic signal coordination. System management also encourages a unified urban transportation system that integrates multiple forms of transportation modes such as pedestrian, bicycle, automobile, rail, ferry, and mass transit. Although TSM measures alone could not satisfy the purpose and need of the project, the following TSM measure has been incorporated into the Build Alternative (West Segment) for this project:

- Extending the existing auxiliary lane along eastbound I-80 between Beck Avenue on-ramp and Travis Boulevard off-ramp;

There are several TDM strategies within the San Francisco Bay Area that are used to reduce the number of vehicle trips within the I-80 corridor. Rideshare offers carpoolers reduced bridge tolls as well as access to carpool lanes. There are also vanpools for larger groups of commuters. TDM 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; however, without the construction of the improvements described above, successful implementation of a TDM alternative would not substantially improve the safety and operation of the freeway. TDM alternative by itself would not satisfy the purpose of the project.

PROPERTY ACQUISITIONS AND TEMPORARY CONSTRUCTION EASEMENTS

While the majority of the improvements can be constructed within the existing right-of-way, some easements and land acquisitions would be required. In the West Segment, the Build Alternative would require temporary construction easements and permanent utility easements. In the East Segment, the Build Alternative would require temporary construction easements, permanent utility easements, and require permanent, but minor slivers of land acquisitions for roadway widening. Generally, utility easements entail installation or connection to underground infrastructure. Once the utility infrastructure is installed and/or connected to, the land would return to its original use. **Tables 1-6** and **1-7** summarize the proposed property acquisitions, including easements.

In the West Segment, the proposed project would require 0.27 acres of land for temporary construction easements and 0.09 acres of land for permanent utility easements. Such easements would cover a small portion of 10 different parcels. In the East Segment, the proposed project would require 0.79 acres of land for temporary construction easements, 0.35 acres of land for permanent utility easements, and 1.62 acres of land for permanent fee/acquisition. Such easements would cover a small portion of 17 different parcels. Of these 17 parcels within the East Segment, utility easements would occur on 9 parcels, temporary construction easements would occur on 6 parcels, a fee acquisition and temporary construction easement would occur on 1 parcel, and temporary construction easement and a utility easement would occur on 1 parcel. One utility easement in the East Segment would require a 20 foot wide acquisition of approximately 30 private parking spaces from an auto repair and dealer commercial business (parcel number 0133120240). Upon completion of construction in this area, the affected portion of the parking lot will be restriped to restore parking spaces to their current number.

Table 1-6 West Segment Land Acquisitions

APN	Existing Use	Type	Area (Acre) TCE	Area (Acre) Utility Easement
Unknown	N/A	TCE	0.007	0.000
0044090450	Commercial	Utility Easement and TCE	0.013	0.002
0027350070	Commercial	Utility Easement and TCE	0.171	0.017
0150200100	Miscellaneous	Utility Easement and TCE	0.008	0.002

APN	Existing Use	Type	Area (Acre) TCE	Area (Acre) Utility Easement
0150200020	Service Station	Utility Easement and TCE	0.008	0.002
0152290020	Retail Trade	Utility Easement and TCE	0.016	0.004
0034011070	Multi Family Dwelling	Utility Easement and TCE	0.007	0.003
0156140050	Commercial	Utility Easement and TCE	0.014	0.007
0167130140	Commercial	Utility Easement and TCE	0.013	0.008
0167110170	Commercial	Utility Easement and TCE	0.014	0.004
		Total:	0.270	0.086

Source: Caltrans, 2014d

Note: Temporary Construction Easement (TCE)

Table 1-7 East Segment Land Acquisitions

APN	Existing Use	Type	Area	
			Sq.Ft.	Acre
167130140	Governmental & Miscellaneous	Utility Easement	381	0.01
167431020	Vacant Residential Land	Utility Easement	3,035	0.07
167090010	Governmental & Miscellaneous	Utility Easement	866	0.02
167010030	Taxable below min. value	Utility Easement	1,508	0.03
122130050	Governmental & Miscellaneous	Utility Easement	630	0.01
127030080	Vacant Commercial Land	Utility Easement	347	0.01
127040090	Vacant Commercial Land	Utility Easement	1,042	0.02
127040100	Taxable below min. value	Utility Easement	293	0.01
131020530	General Retail Commercial	TCE	48	0.00
131020470	Taxable below min. value	TCE	1,713	0.04
131420220	Commercial Sales & Services	TCE	2,043	0.05
131430090	Vacant Commercial Land	TCE	3,837	0.09

APN	Existing Use	Type	Area	
			Sq.Ft.	Acre
131430210	Commercial Sales & Services	TCE	2,235	0.05
134341010	Taxable below min value	Fee Acquisition and TCE	91,249	2.09
134351060	Commercial	TCE	1,929	0.04
133120240	Auto Repair & Dealers	TCE and Utility Easement	9,329	0.22
134480080	Commercial	Utility Easement	219	0.00
		Total:	120,704	2.76

Source: Caltrans, 2014d

Note: Temporary Construction Easement (TCE)

NO-BUILD (NO ACTION) ALTERNATIVE

Under the No-Build Alternative, none of the project features described above would be constructed. The freeway travel lanes along the I-80 corridor would remain as they currently exist. No bridge structures would be widened. Traffic volumes within the project corridor would continue to increase under the No-Build Alternative. Other planned and approved transportation improvements along local routes may be implemented by local agencies or under other projects. **Table 1-8** lists the projects assumed to be completed prior to construction of the project. The No-Build Alternative is considered the environmental baseline for comparing environmental impacts under the National Environmental Policy Act (NEPA).⁴

⁴ Under the California Environmental Quality Act (CEQA), the baseline for environmental impact analysis consists of the existing conditions at the time the Notice of Preparation (NOP) is issued or at the time the environmental studies began. Near-term (2020) and long-term (2040) impacts are also considered under CEQA; similar to the No-Build baseline used for NEPA.

Table 1-8 Planned Improvements to be Completed Prior to Project Construction

Project Name (EA No.)	Project Limits and Description	Status
I-80/I-680/SR 12 Interchange Project Phase 1, Initial Construction Package (EA 04-0A5344)	<p>Limits: From 0.7 mile west on SR-12 West to SR-12 West/I-80 and on WB I-80 from SR-12 West/I-80 to I-80/I-680.</p> <p>Description: Realignment of WB I-80 from east of the I-80/I-680 IC to SR-12 West connector, relocation of the Green Valley Road IC to the east and reconfiguration of the SR-12 West ramps and Green Valley Road on-ramp. The WB I-80 realignment to the north will provide for a wider median to accommodate the future I-680/I-80 HOV Lanes Connector (Package 6 of the I-80/I-680/SR-12 IC Project) and correct the nonstandard typical section on WB I-80 between the relocated Green Valley Road IC and the SR-12 West.</p>	Anticipated Construction Completion 2016
I-80 Ramp Metering (EA 04-153504)	<p>Limits: Along I-80 in Solano County, within the cities of Vallejo, Fairfield and Vacaville; from the Contra Costa County Line to I-505.</p> <p>Description: Install ramp metering, traffic operating systems, metal beam guardrail, and sign structures, and widen ramp</p>	Completed 2014
Bridge Widening (EA 04-0A0904)	<p>Limits: On I-80 in Solano County, in and near Vacaville from 0.2 mile west of Alamo Creek Bridge to 0.2 mile east of Alamo Creek Bridge.</p> <p>Description: Widen bridge and construction drainage</p>	Anticipated Construction Completion 2016

The largest planned improvement project within the project limits is the I-80/I-680/SR-12 Interchange (ICP) – Phase 1 Project, which will be constructed with seven individual construction packages. The project report for the preferred alternative and the corresponding Phase 1, Initial Construction Package for the ICP was approved in October 2012. The Phase 1 of the ICP will include numerous improvements to address existing and future traffic operations and congestion, including relocation of the Cordelia Westbound Truck Inspection Facility. Proposed improvements are intended to add freeway capacity, reduce cut through traffic on local roads, improve local access to and from the freeway, accommodate current and future truck volumes, improve safety and increase the use of HOV lanes and ridesharing. The existing highway geometry on I-80, within the limits of the West Segment, has been adjusted in the design of this I-80 Express Lanes Project to include proposed improvements from Phase 1 of the ICP.

COMPARISON OF ALTERNATIVES

The Build Alternative would convert HOV lanes to express lanes along I-80 from west of Red Top Road to east of I-505, striving to meet the goals discussed in **Section 1.3.1, Purpose**. The No-Build Alternative would not include this conversion, but other planned improvements shown in **Table 1-8** may be implemented. The No-Build Alternative would not address the needs described in **Section 1.3.2, Need**, and therefore would not provide an immediate benefit to the traveling public by maximizing the use of existing freeway infrastructure and expanding capacity.

1.4.3 FINAL DECISION MAKING PROCESS

After the public circulation period, all comments will be considered, and Caltrans will select a preferred alternative and make the final determination of the project's effect on the environment. Under the CEQA, if no immitigable significant adverse impacts are identified, Caltrans will prepare a Negative Declaration (ND) or Mitigated ND. Similarly, if Caltrans determines the action does not significantly impact the environment, Caltrans, as assigned by the FHWA, will issue a Finding of No Significant Impact (FONSI) in accordance with the NEPA.

1.4.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION

PROJECT STUDY REPORT-PROJECT DEVELOPMENT SUPPORT ALTERNATIVE

The Preliminary Study Report was prepared and approved for this project in 2012. Two build alternatives were considered:

- Alternative A would implement continuous access express lanes with minimal improvements to the existing facility; and
- Alternative B would implement 12-foot express lanes with ingress and egress access locations, 4-foot buffer, and improvements to the existing facility to meet current design standards. Improvements to meet current design standards included 36-foot paved median, concrete median barrier, correction for existing nonstandard sight distances, new auxiliary lanes, modification/relocation of 25 roadway and creek bridges, and the modification and construction of soundwalls and retaining walls.

Alternative B was determined to not be viable because it required significant impacts to over 100 urban and rural parcels including displacement of persons/businesses and major relocations of both high and low risks facilities. The project cost was estimated at \$1.4 billion in 2015 dollars which included \$990 million for construction capital, \$75 million for right of way capital and \$335 million for capital outlay support.

The current Build Alternative evaluated in this environmental document is comparable to Alternative A.

MANAGED LANE DESIGN, ACCESS CONSIDERATION

The adopted 2011 Traffic Operations Policy Directive (TOPD) for Managed Lane Design requires consideration for both limited-access design and continuous-access design to better assess the capital costs for construction and operating expenses and the freeway's performance and operations benefits. The TOPD also requires performance of an operational analysis and a safety analysis for any HOV conversion project. The studies would disclose the operational impact due to the proposed express lane and access openings on a limited-access design and safety impact on operating conditions and the potential for collision due to the proposed improvements.

STA prepared a Continuous Access White Paper and presented the findings to Caltrans and MTC on March 9, 2011. The white paper discussed standard design, completed and upcoming express lane projects, access options along the I-80 corridor through Fairfield and Vacaville, and issues influencing continuous access. The recommended access option for I-80 was continuous access since this approach would balance the need to closely match current HOV lane legacy access conditions, promote effective utilization of the express lanes, meet bus transit service requirements, provide the opportunity for monitoring and enforcement at toll zones, and achieve a project operation and design that is able to be expeditiously implemented with minimal ROW and environmental impacts.

There was consensus to consider a continuous access with limited/restricted access where needed for safety and operations for I-80. The Final Traffic Operations Analysis Report (Caltrans, 2014q) indicated that a limited or restricted access at any location would not be required. With the above findings, a limited-access design alternative for I-80 would not be a viable alternative, and 100 percent continuous access is recommended for the I-80 corridor.

1.4.5 PERMITS AND APPROVALS NEEDED

Table 1-9 identifies the permits/approvals that would be required for project construction.

Table 1-9 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	Biological Opinion	Issued during the Project Approval/Environmental Document Phase
California Department of Fish and Wildlife	1602 Agreement	Issued during the Final Design Phase
	Incidental Take Permit	Issued at time of Biological Opinion
California Water Resources Board	NPDES Permit	Issued during the Final Design Phase

Agency	Permit/Approval	Status
Regional Water Quality Control Board	Section 401 Certification	Issued during the Final Design Phase
Metropolitan Transportation Commission (MTC) Air Quality Conformity Task Force/ Federal Highway Administration (FHWA)	Regional Air Quality Conformity	MTC Determination July 18, 2013 FHWA Determination August 12, 2013
	Project-Level Air Quality Conformity	MTC Determination September 25, 2012
State Historic Preservation Officer (SHPO)	Concurrence on Eligibility Determinations/Finding of No Adverse Effect with Standard Conditions – Environmentally Sensitive Area (ESA)	Concurrence Requested January, 2015 Concurrence Received July 2, 2015

Source: Circlepoint, 2014