

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to improve the operation of the Interstate 5 (I-5)/Interstate 80 (I-80) interchange and provide a connection to the proposed High Occupancy Vehicle (HOV) lanes between southbound I-5 and eastbound I-80. The project limits on I-5 are from the Garden Highway off-ramp to the Arena Boulevard off-ramp (PM 25.2/27.8) and on I-80 from West El Camino Avenue to the Truxel Road on-ramp (PM M1.3/M3.8). The total length of the project is 2.6 miles on I-5 and 2.5 miles on I-80 and includes a direct two-lane fly-over connector for the eastbound (EB) I-80 to northbound (NB) I-5 movement and a direct bi-directional fly-over HOV connector for the westbound (WB) I-80 to southbound (SB) I-5 and NB I-5 to EB I-80 movements. Other operational improvements include configuring the interchange for the future construction of continuous HOV lanes on I-5 from downtown Sacramento to the I-5/State Route (SR) 99 interchange, improving the loop connectors in the southwest and northeast quadrants of the I-5/I-80 interchange, eliminating the lane drop on EB I-80 and providing other auxiliary lanes. The project is described in detail below. Figure 1 shows the project location and Figures 2-4 show the project layout.

1.2 Scope of this Environmental Impact Report/Environmental Assessment

This document contains environmental analyses pertaining to the Measure A I-5/I-80 Interchange Modification located at the interchange of I-5 and I-80 in Sacramento County, California. This document satisfies requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

This Draft Environmental Impact Report/Environmental Assessment (EIR/EA) is an informational document that: 1) informs the public agency decision-makers and the public of the environmental effects of the proposed project; and 2) identifies potential mitigation measures to minimize any adverse impacts.

A Notice of Preparation (NOP) to prepare an EIR was released February 20, 2008 and a public notice was published in the Sacramento Bee on March 10, 2008. Two agencies, the California Department of Water Resources, Floodplain Protection Section and the Sacramento Fire Department responded to the notice. (See Chapter 4, Section 4.4 for more information)

Opportunities for public comment on the Draft EIR/EA will occur during the 45-day public availability period and at the public meetings/open houses that Caltrans will hold on this document. The Final EIR/EA will take into account comments received on the Draft EIR/EA during the 45-day comment period.

1.3 Purpose and Need

Traffic on both I-5 and I-80 has steadily increased over the last few decades. Presently, congestion is experienced during peak periods on northbound and southbound I-5 and eastbound I-80, near the I-5/I-80 interchange. Commercial and residential development along the I-5 and I-80 corridors and increasing traffic volumes will further erode operating conditions of this interchange. The purpose of the proposed project is to:

- Provide congestion relief.
- Improve safety and interchange operations.
- Promote the use of high occupancy vehicles (HOV).
- Support the goals of the SACOG 2035 Metropolitan Transportation Plan by providing greater connectivity with the existing and proposed HOV network in the Sacramento region.

The proposed project, partially funded with Sacramento County Measure A funds, is located at the interchange of I-5 and I-80 within the Sacramento city limits in Sacramento County. In 2004, Sacramento County voters approved the extension of the Measure A Transportation Sales Tax program. This half-cent-per dollar sales tax measure will continue from April 2009 to March 2039 and will provide a local funding source for state highway, bridge, and other transportation improvements. The Sacramento Transportation Authority (STA) adopted the sales tax ordinance (STA 04-01) on July 29, 2004. The “I-5/I-80 Interchange Upgrade & Carpool Lane Connector” project was included in STA’s Freeway Safety and Congestion Relief Program.

The need for operational improvements to this interchange was identified in the Sacramento Area Council of Governments (SACOG) High Occupancy Vehicle Planning Study for the Sacramento Metropolitan Area. SACOG completed the Major Investment Study (MIS) in 1997, which included this project. This proposed project is included in the Metropolitan Transportation Plan (MTP) 2035 (March 2008) and the 2009/2012 cost-constrained Metropolitan Transportation Improvement Program (MTIP) (August 2008).

1.3.1 Existing Conditions

The I-5/I-80 interchange is an important freeway-to-freeway interchange constructed in 1968 that serves primarily commuter traffic on weekdays and recreational travel to Lake Tahoe and

Reno, Nevada, and the San Francisco Bay area on weekends. In addition, the interchange also accommodates high volumes of long-distance interstate truck traffic.

Within the study limits, I-5 is an eight-lane divided freeway, with auxiliary lanes to and from the approaches to the interchange.

I-80 is a six-lane divided freeway within the project limits. A portion of the eastbound mainline between I-5 and San Juan Road Overcrossing contains two lanes. The portion of I-80 east of the interchange contains auxiliary lanes to and from the approaches to the interchange.

The project study area is within a heavily urbanized area, with numerous interchanges on both highways.

1.3.2 Operational Deficiencies

The I-5/I-80 interchange presently experiences delays caused by the short weaving distances between the on and off-ramps and the connector ramps. Bottlenecks occurring downstream from the interchange during the morning commute from WB I-80 to SB I-5 and the evening commute from NB I-5 to EB I-80 back up and create congestion within the interchange. It is anticipated that congestion and delays will increase due to the anticipated regional and interregional growth of the surrounding areas.

1.3.3 High Occupancy Vehicles (HOV) Lanes

HOV lanes can promote the movement of more people in fewer vehicles (carpools, vanpools, transit) by:

- Increasing the overall person-moving capacity of a roadway.
- Maintaining free-flow speeds and providing a more dependable, predictable commute compared to the mixed-flow lanes, which typically operate under congested conditions.
- Carrying 2-3 times the passenger volume as mixed-flow lanes.
- Operating during the peak commute times (requiring 2 or more people) between 6 to 10 AM and 3 to 7 PM Monday through Friday.

The proposed project is an important part of the larger existing and planned HOV network in the Sacramento region. The proposed project is a continuation of the existing HOV lanes that currently extend from Watt Avenue to the Sacramento/Placer County line. By 2012, these lanes are planned to extend to SR 65 in Roseville, creating over 22 miles of HOV lanes along I-80 and serving both Sacramento and Placer Counties.

HOV lanes are incorporated in regional transportation plans, including the 2009/2012 Metropolitan Transportation Implementation Plan (MTIP), the Metropolitan Transportation Plan (MTP) 2035, Measure A funding, and the Sacramento Regional Blueprint. The I-5/I-80 HOV lane project is included in each of these plans.

1.3.4 Safety

Table 4 summarizes the traffic accident data compiled by Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) for the mainline freeway sections adjacent to the I-5/I-80 interchange. The data shown is for the three-year period between April 2004 and March 2007.

Within the study area, 536 accidents occurred on the freeway mainline section in the three-year period. Of the four mainline sections, eastbound I-80 is the only one that has a higher than average accident rate. Most collisions involved vehicles, proceeding straight, stopped or slowing, and most occurred in the left lane. This reflects the congestion that occurs during the afternoon commute due to the Northgate Boulevard bottleneck and resulting queue that extends to the I-5 interchange.

All four fatality-related accidents were located on southbound I-5 between West El Camino Avenue and the American River Bridge. Three of the four fatality accidents were alcohol-related, and two of these three involved pedestrians. All fatalities occurred outside of the AM and PM peak periods.

Because I-5 and I-80 are major interstate truck routes, the accident rate according to vehicle type was reviewed. Collisions involving trucks with three or more axles were 15 percent of all accidents on southbound I-5, 22 percent on northbound I-5, and 16 percent on I-80. The percentages of trucks involved in accidents are consistent with the percentage of trucks in the traffic volume.

Table 4 Mainline Accident History

Mainline Freeway Section	Total Accidents	Total Fatalities	Actual Accident Rate ¹			Average Accident Rate ¹		
			F	F&I	Total	F	F&I	Total
Northbound I-5 American River Br to Arena	115	0	0	0.16	0.42	0.005	0.31	0.98
Southbound I-5 Arena Boulevard to American River Br	174	4	0.014	0.24	0.63	0.005	0.31	0.98
Eastbound I-80 W El Camino Ave to Truxel	176	0	0	0.40	1.24	0.007	0.28	0.86
Westbound I-80	71	0	0	0.24	0.50	0.007	0.28	0.86

Truxel Rd to W El Camino								
Bold font indicate actual accident rates that are higher than the statewide average for similar facilities.								
¹ The accident rate is measured in accidents per million vehicle-miles. "F" refers to the fatality rate, and "F&I" refers to the fatality and injury rate.								

All three loop ramps have higher than average accident rates, both for the “fatality and injury” and total accident rates; however, none of the loop ramps had fatality-related accidents. The three other ramp segments that had higher than average accident rates also have the highest volumes: two of these segments are on the westbound to southbound connector, and the other is on the northbound to eastbound connector. In the three-year period, 110 accidents occurred on the I-5/I-80 interchange ramps. Five accidents involved fatalities, and of these five, three were alcohol-related. None of the fatalities occurred during the AM or PM peak periods.

Table 5 categorizes the ramp accidents within the three-year period according to peak period and accident type. For the ramps, the majority of accidents (55 percent) occurred outside of the peak periods. Unlike the mainline section, the highest accident type for the ramps was “hit object,” which includes objects such as curbs, dikes and guardrails, and other vehicles. The percent of overturns was 20 percent.

Table 5 Ramp Accidents by Peak Period and Accident Type

Ramp Segment	Peak Period			Accident Type					Total
	6 to 10 AM	3 to 7 PM	Off-peak	Rear End	Hit Object	Sideswipe	Overturn	Other ¹	
SB I-5 Off	2	0	0	1	1	0	0	0	2
WB I-80 Off	2	9	12	7	8	3	4	1	23
WB I-80 On	0	0	2	0	1	0	0	1	2
EB I-80 Off	0	0	0	0	0	0	0	0	0
EB I-80 Off	0	0	0	0	0	0	0	0	0
EB I-80 On	2	5	6	2	6	0	4	1	13
SB I-5 On	1	1	1	1	1	0	1	0	3
NB I-5 Off	1	0	1	0	1	1	0	0	2
EB I-80 Off	2	3	7	1	4	2	4	1	12
EB I-80 On	1	7	11	4	9	3	2	1	19
WB I-80 Off	5	1	8	3	8	1	2	0	14
WB I-80 On	3	2	7	1	5	2	4	0	12
WB I-80 Off	0	1	2	0	3	0	0	0	3
NB I-5 On	1	1	3	1	2	0	1	1	5
Total	20	30	60	21	49	12	22	6	110
Percentage	18%	27%	55%	19%	45%	11%	20%	5%	100%
¹ The “Other” category includes head-on, broadside and other accident types.									

The 28 truck-related accidents made up 25 percent of all ramp accidents. Since trucks make up 15 to 20 percent of the traffic volume on the freeway, they are involved in a disproportionately high number of accidents at the interchange.

1.3.5 Additional Considerations

Although the proposed build alternatives would provide additional capacity, the following bottlenecks would exist under design-year conditions both within and adjacent to the study area. Under 2040 modeled conditions, bottlenecks are projected to occur on southbound I-5 at the American River resulting in congestion that extends to Metro Air Parkway on I-5 and Truxel Road on westbound I-80. The southbound on-ramp from SR 99 also bottlenecks in 2040, preventing traffic from reaching I-5. During the PM peak hour, northbound I-5 will have a bottleneck at SR 99 that extends to downtown Sacramento on I-5 and the Sacramento River on eastbound I-80. The Sacramento River Bridge also constrains traffic from entering the study area on eastbound I-80. There is a proposal included in the Metropolitan Transportation Plan (MTP) to provide an all modal river crossing near Truxel, which could relieve some of the congestion on I-5 at the American River Bridge.

1.4 Other Planned Projects

The following projects are planned for the study area. The list below was pulled from the Draft Final MTP 2035 Public Transit Including Rail Projects.

Table 6 Planned Transportation Projects within the Study Area

Project Name	Project Description	Year Completed or proposed construction
Transit Projects		
Downtown Light Rail Station Enhancements	Design and construct light rail station enhancements, including better signage, lighting, pedestrian access, and ADA access to encourage greater transit usage.	2009
Northeast Corridor Enhancements	Improve alignment of Northeast Corridor LRT, upgrade the traction power system and signaling to provide limited-stop service, make enhancements to yard track and maintenance facility, and installation of communications infrastructure.	2010
Downtown-Natomas Rail Extension-MOS-1A	This extends light rail via a single track from Downtown Sacramento to Richards Boulevard, a distance of just over 1.1 miles, but stopping short of a crossing of the American River.	2010

Project Name	Project Description	Year Completed or proposed construction
Downtown Sac to West Sac Streetcar	Streetcar Capital to provide starter line service	2014
DNA Light Rail – Overall Study	Provide for additional advanced planning, value engineering, project delivery strategies, advanced conceptual engineering, and update the alternatives analysis. Project includes potential hardship right-of-way acquisition activities.[Phase 1 (MOS-1A) Construction is REG17320,Phase 2 is REG17935, and Phase 3 is REG17325.]	2017
Downtown-Natomas-Airport Rail Extension-MOS2	Extend rail from Richards Boulevard to Natomas Town Center	2017
Downtown-Natomas-Airport Rail Extension-MOS3	Extend rail from Natomas Town Center to Sacramento International Airport.	2020
State and Interstate Highway Projects		
I-5	Add HOV and auxiliary lanes from Elk Grove Boulevard to downtown Sacramento	2015
I-80	New HOV lanes from RT Station (Longview) to the Yolo County line/Sacramento River (western terminus).	2015
I-5	Widen: add NB auxiliary lane from Del Paso Rd. to SR 99.	2016
I-5/I-80	Reconstruct I-5/I-80 Interchange, including high occupancy vehicle (HOV) lane connectors, and construction of HOV lanes from the I-5/I-80 Interchange to downtown Sacramento	2018
U.S. 50 HOV	HOV lanes from Watt Ave. to Downtown Sacramento.	2020
I-5	Add HOV lanes from I-80 to SR 70/SR 99. Add Bus/HOV lanes between I-80 and downtown Sacramento (CAL18410).	2020
I-5/SR 99	I-5/SR 99 interchange	2023
U.S. 50/SR 99	Oak Park Interchange, including HOV lane connectors	2027
I-5/U.S. 50	I-5/U.S. 50 Riverfront Interchange	2029
Local Streets Projects		
Del Paso Rd.	Widen: 6 lanes from El Centro Rd. to SB I-5 offramp.	2008
Del Paso Rd.	Widen: 6 lanes from 500 feet east of Truxel Rd. to Town Center. (Complete frontage improvements and construct a raised/landscaped median).	2008
El Centro Rd.	Widen: 4 lanes from Del Paso Rd. to Arena Boulevard.	2008
El Centro Rd.	Widen: 4 lanes from Arena Boulevard to San Juan Rd.	2008
Main Ave.	Bridge Replacement: Main Ave. Bridge over Natomas east Main Drain: replace	2008

Project Name	Project Description	Year Completed or proposed construction
	existing 2-lane bridge with a 4-lane bridge.	
Ninos Pkwy.	Bike trail: develop a pedestrian bike trail within the Ninos Pkwy. between San Juan Rd. and Edmonton Dr.	2008
Sacramento River Bike Trail	Bike Trail: construct from R St. to Miller Park and from Garcia Bend Park to south city limits along the east levee of the Sacramento River.	2008
I-80	Bike/pedestrian bridge: across I-80 at the West Canal, as well as across the West Canal.	2011
Metro Air Pkwy.	The County of Sacramento is planning to construct an interchange on I-5 at Metro Air Parkway, a new arterial that will serve the planned Metro Air Park development. The proposed interchange would be located about halfway between the Airport Boulevard and SR 99 interchanges.	2011
Del Paso Rd.	Widen: from I-5 NB off-ramp to East Commerce (north side only) .	2016
I-5	New Bridge: Construct connection over I-5 between approximately Capitol Ave. to "O" St.	2016
Richards Boulevard	Richards Boulevard/I-5 reconstruct Interchange	2017
Sacramento River Crossing	New all-modal river crossing (Auto, Transit, Bike & Pedestrian) from Sacramento across the Sacramento River to West Sacramento. The crossing was modeled between Broadway in Sacramento & 15th Street in West Sacramento, but final alignment options will be studied in subsequent planning efforts. Additional 50% of estimated cost identified as a City of West Sacramento project.	2019
Lower American River Crossing	New all-modal river crossing (Transit, Auto, Bike & Pedestrian) across the Lower American River between downtown Sacramento and South Natomas	2019
Northgate Boulevard	Extend: Northgate Boulevard/I-80 Interchange: Extend existing I-5 WB off-ramp onto Northgate Boulevard.; add auxiliary lane to WB on-ramp	2020
W. El Camino Ave./I-80	West El Camino Interchange on I-80: Widen 4 lanes and modify ramps	2020
W. El Camino Ave.	West El Camino Interchange on I-5: new NB entrance ramp and SB exit ramp. Modify: NB I-5 to I-80 ramp to accommodate the proposed interchange ramps.	2030

1.5 Project Development and Project Scoping History

Studies for this project began in 2002. The initial emphasis was on analyzing ramps and fly-overs for all freeway-to-freeway connections, including HOV connectors in all four quadrants of the interchange. In addition, it was proposed to analyze the extension of the southern limit to north of J Street for the purpose of providing HOV lanes from the interchange to downtown Sacramento. Due to budget constraints, the scope was later reduced to include just a mixed flow fly-over connector from EB I-80 to NB I-5, a HOV fly-over from WB I-80 to SB I-5 and NB I-5 to EB I-80, and provide HOV lanes on I-5.

Coordination with the City of Sacramento began with a scoping meeting in April 2006 with a follow up meeting in June 2006. The Federal Highway Administration (FHWA) was consulted in March of 2006 with a follow up meeting for project presentation in August 2006, and a subsequent meeting on December 20, 2007 where the revised scope was presented.

A Traffic Operational Study was completed in July 18, 2008. The study limits were from Airport Boulevard to Richards Boulevard on I-5 and from the Sacramento River to Norwood Avenue on I-80. The Study recommended redesigning or improving the existing loop connectors, and verified the need for direct HOV connectors for the WB I-80 to SB I-5 and NB I-5 to EB I-80 movements.

There are currently several projects under development to provide a network of HOV lanes throughout the Sacramento commuting area. EA 03-37970, currently under development, proposes to construct HOV lanes on I-80 from West El Camino Avenue to the Longview Drive interchange. EA 03-4E330 proposes to construct HOV lanes from the I-5/I-80 Interchange to the I-5/SR 99 interchange and EA 03-3E580 proposes to restripe the “Boat Section” downtown between the Q Street off-ramp to the Richards Boulevard off-ramp, adding an HOV lane. Those three projects together with this project will provide HOV lanes from Downtown Sacramento to the I-5/SR 99 interchange and possibly continue on SR 99 and are projected to be constructed by 2025. In addition, 03-0F410 proposes to reconfigure the I-5/SR 99 interchange to provide for HOV lanes and 03-3c000 from downtown to Elk Grove proposes HOV lanes.

The project has been included in various studies, plans, and programs since 1988 including:

- The National Strategic Transportation Study (U.S. Department of Transportation) 1988 study that recommended widening I-80 with HOV lanes between I-5 and the City of Roseville.
- Corridor System Management Plan, May 2009.
- 2003 Traffic Operational Study Report recommending bi-directional HOV connection for WB I-80 to SB-5 and NB I-5 to EB I-80.
- Sacramento Transportation Authority (STA) Congestion Management Program: The Program has recommended HOV lanes between I-5 and the Placer County line since 1991.
- Sacramento County Strategic Plan: The Plan has listed HOV lanes between I-5 and the Placer County line since 1994.
- Metropolitan Transportation Improvement Program (MTIP): The program includes a listing of all transportation-related projects requiring federal funding or other approval by the federal transportation agencies. (2009/2012) The current SACOG MTIP includes the

proposed project. Projects included in the MTIP are consistent with SACOG's Metropolitan MTP and are part of the area's overall strategy for providing mobility, congestion relief, and reduction of transportation-related air pollution in support of efforts to attain federal air quality standards for the region.

- Metropolitan Transportation Plan (MTP): The MTP is a 28-year plan for transportation improvements in a six-county region (El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba). The project is included in the MTP 2035, which has been adopted by SACOG.
- Measure A Half-Cent Sales Tax, Sacramento County 2004. The Measure A Half-Cent sales tax extended an existing half-cent from 2009 to 2030.
- The HOV project was listed under Freeway Safety and Congestion Relief Program, Regional HOV Lane Connectors/Extensions in the 2004 election ballot. All projects included on the ballot are also included in the 2035 MTP.
- Sacramento Region Blueprint. Joint effort of SACOG and Valley Vision. SACOG conducted two years of study and public involvement, resulting in the adoption the Blueprint's Preferred Blueprint Scenario in December 2004. The Blueprint scenario adopted became part of SACOG's Metropolitan Transportation Plan update for 2035, a formal document that serves as a long-range transportation plan for the six-county region. It also will serve as a framework to guide local government in growth and transportation planning through 2050.
- California Transportation Plan 2030: The California Transportation Plan 2030 is a blueprint for meeting the State's future transportation needs. Specific policies and strategies include completing the HOV network and maximizing the use of HOV lanes by encouraging transit operators to provide express bus service on HOV lanes.
- Proposition 1B, California State Propositions 2006. The proposition directed the State of California to sell \$19.9 billion in general obligation bonds to fund state and local transportation and safety projects, including completing the state's network of carpool lanes. The proposed project was one of the projects listed as part of the proposition.

Figure 2 Alternative 1A

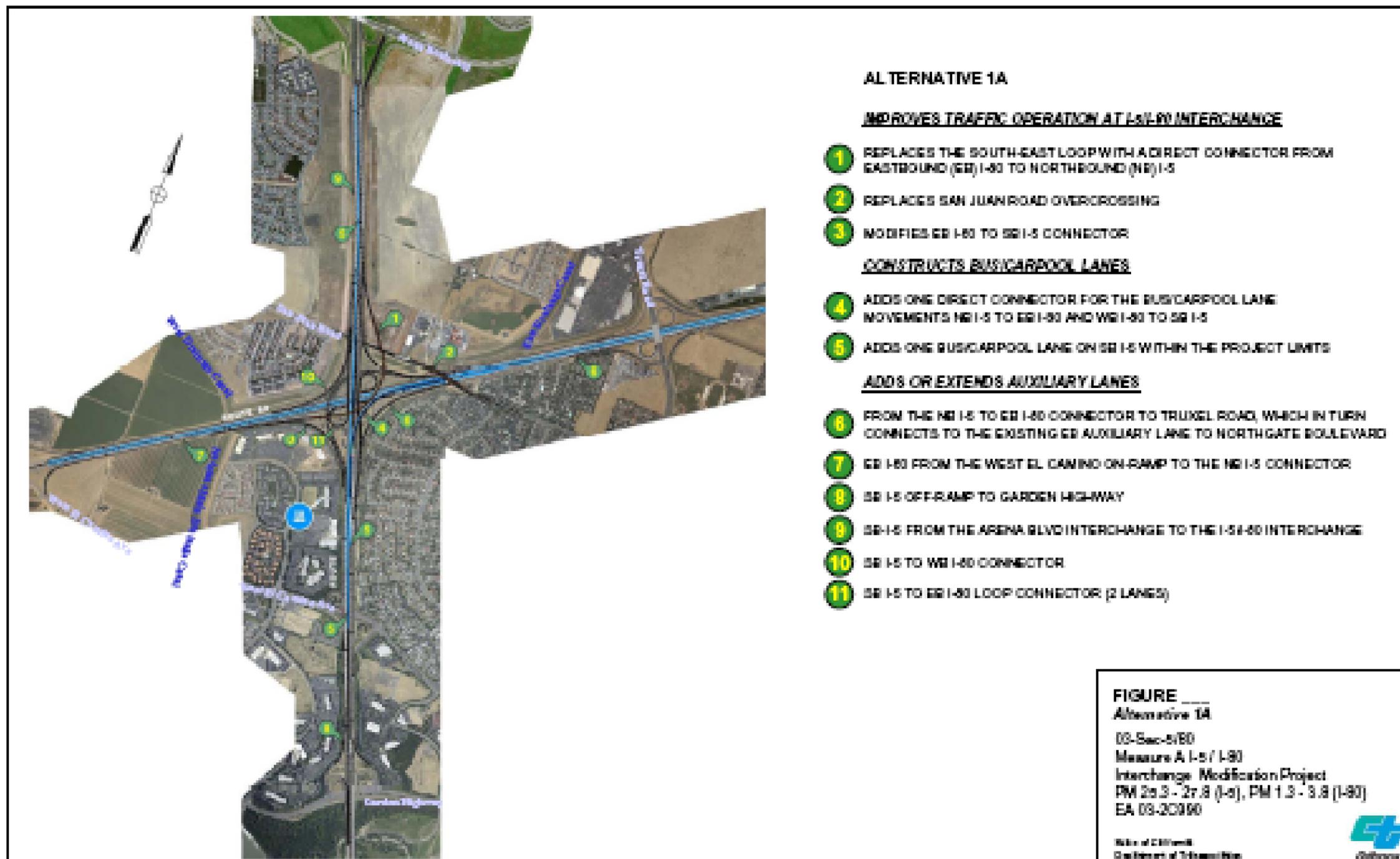


Figure 3 Alternative 1B

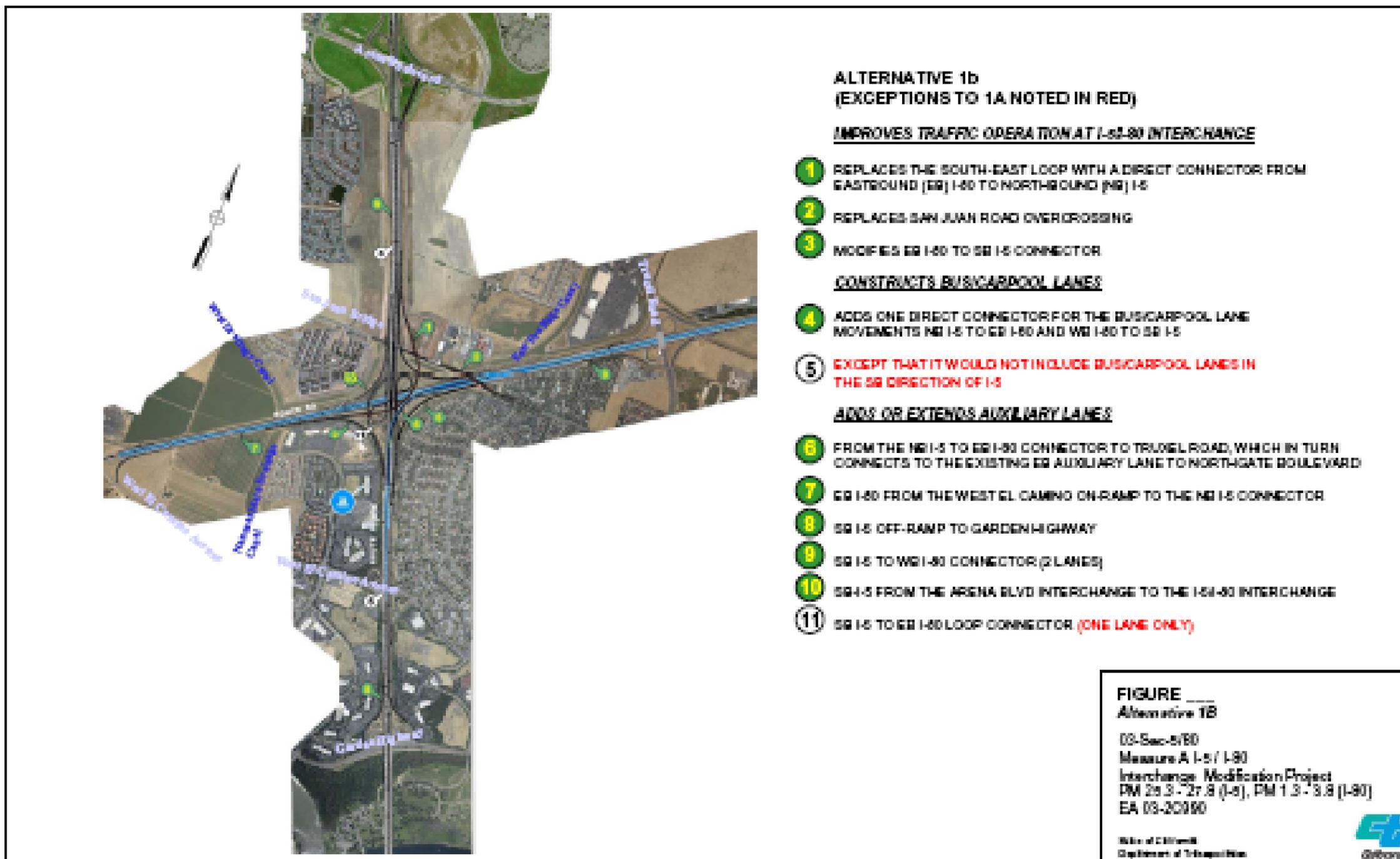
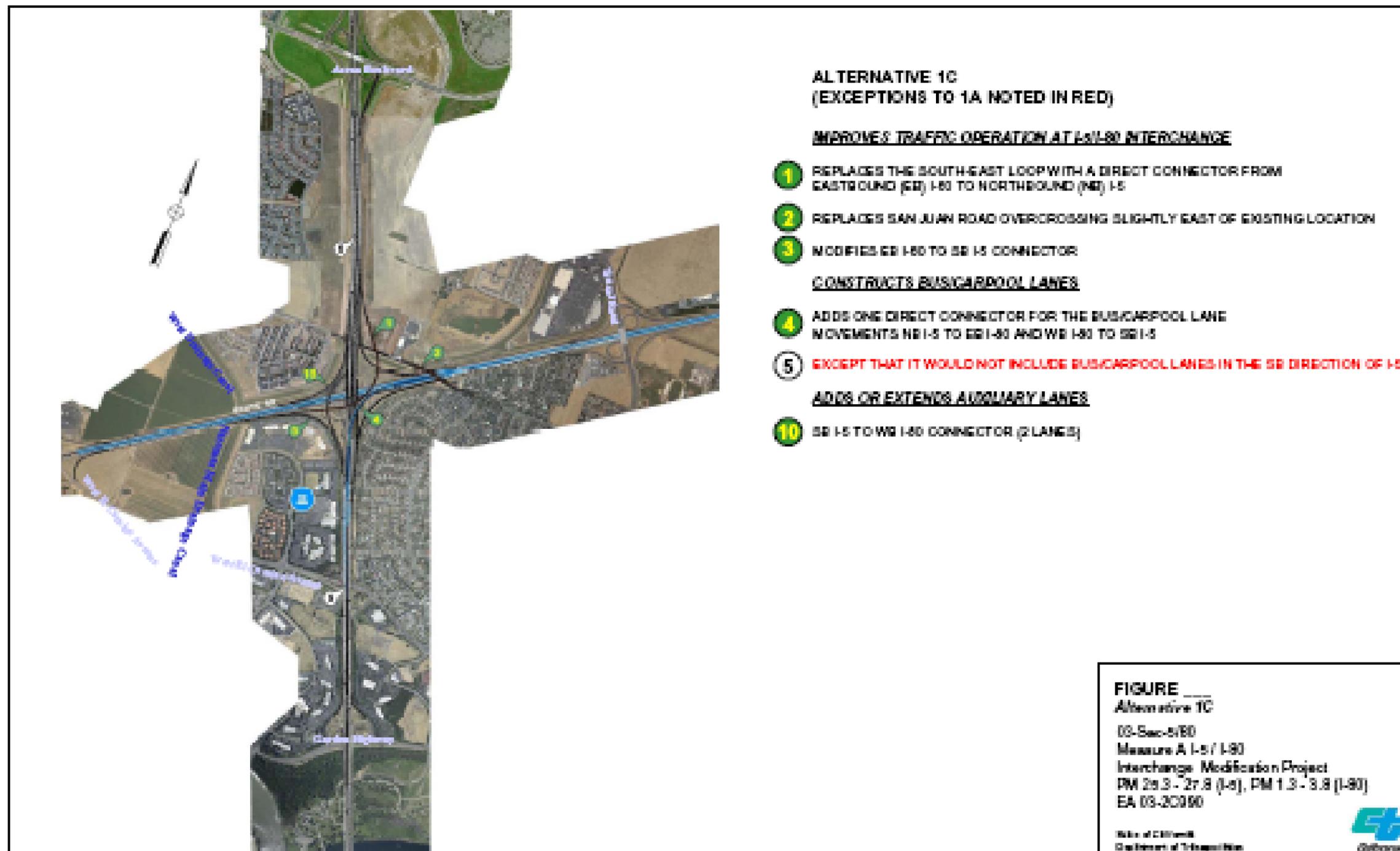


Figure 4 Alternative 1C



1.6 Alternatives under Consideration

This section describes the proposed project and the design alternatives that were developed by a multidisciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. (See Appendix F for Layouts and Figures 2-4)

Common Design Features of the Build Alternatives

The proposed improvements consist of:

- A direct two-lane mixed flow fly-over connector for the EB I-80 to NB I-5 movement and eliminating the loop in the southeast quadrant.
- A bi-directional fly-over HOV connector for the WB I-80 to SB I-5 and NB I-5 to EB I-80 movements.
- Replace the existing San Juan Road overcrossing to accommodate the widening required by the HOV connector.
- Eliminate the lane drop thereby providing three mixed flow lanes on EB I-80 between the I-5/I-80 interchange and the Truxel Road interchange.
- Add lanes as detailed below.
 - Adding an auxiliary lane on EB I-80 from the I-5/I-80 interchange to the Truxel Road interchange, which connects to the existing auxiliary lane to Northgate Boulevard.
 - Adding an auxiliary lane on SB I-5 from the West El Camino Avenue interchange to the Garden Highway SB on-ramp.

The mixed-flow I-80 EB to I-5 NB connector will fly over I-5 (second level) to constitute a third level. It will be on an embankment supported by retaining walls at the beginning where it exits EB I-80, on a structure in the middle part, and on an embankment at the end where it enters NB I-5. The existing direct connector from EB I-80 to SB I-5 will be relocated as a one-lane mixed-flow connector that will operate the same as the existing one. It will be on an embankment supported by a retaining wall on the southwest side. The relocation is due to the new mixed-flow from EB I-80 to SB I-5, which moves the freeway exit to the west.

The bi-directional HOV connector from NB I-5 to EB I-80 and WB I-80 to SB I-5 will be on an embankment supported by retaining walls at the beginning and end in the median of I-5 and I-80, and on a structure in the middle part. At the beginning and at the end there will be a widening in the median of the roadway to accommodate the two HOV lanes, the retaining

walls, and the shoulders for the mainline freeway lanes. The space required for this widening will trigger the need for additional pavement and additional right-of-way.

San Juan Road Overcrossing

The four spans of the existing San Juan Road Overcrossing structure obstruct the proposed HOV lane connector structure and I-80 lane addition. The structure needs to be reconstructed slightly longer and with only two spans. The new structure would be built in two stages, maintaining traffic on one half of the existing bridge, and then shifting traffic to the newly constructed half. The City of Sacramento will be consulted for a complete closure during construction. The bike path on San Juan Road overcrossing, beginning at Azevedo Road and ending at Airport Boulevard will be perpetuated.

1.6.1 Alternative 1A – Improve interchange and construct HOV Lanes to Garden Highway

In addition to the features common to all the alternatives, Alternative 1A will construct the following auxiliary lanes:

- A lane will be added to the SB-5 to WB-80 connector.
- A lane will be added to the SB-5 to EB-80 connector.
- A shortened auxiliary lane will be added on SB I-5 from the Arena Boulevard interchange to the I-5/I-80 interchange.
- An auxiliary lane will be added on SB I-5 between the Garden Highway SB off-ramp nose and the Garden Highway SB on-ramp: this will create a continuous auxiliary lane from the I-5/I-80 interchange to the Richards Boulevard interchange.
- An auxiliary lane will be added on EB I-80 from the West El Camino on-ramp to the NB I-5 fly-over.
- An auxiliary lane will be added from the NB I-5 to EB I-80 connector to Truxel Road, which connects to the existing auxiliary lane to Northgate Boulevard. This includes a partial modification of both Truxel EB I-80 on-ramps.
- A shortened auxiliary lane will be added between the EB I-80 to NB I-5 Mixed Flow Connector and Arena Boulevard.

1.6.2 Alternative 1B – Alternative 1A without HOV lanes on SB I-5

This alternative includes all the features of Alternate 1A, except that it does not have HOV lanes in the SB direction of I-5, and it only has one lane for the SB I-5 to EB I-80 connector. Due to the limited extent of I-5 in this project, the HOV lanes begin shortly before the interchange, and end shortly thereafter, limiting their usefulness. Therefore this alternative terminates the HOV lane at the end of the WB I-80 to SB I-5 HOV direct connector. This location is also more favorable to a lane reduction than farther south as proposed in Alternative 1A.

1.6.3 Alternative 1C – Alternative 1A without improvements to the loops and to other features

To keep the project cost within budget, it may be necessary to postpone some project features, which will save roadway and retaining wall costs. Features of the project that would be postponed until funding becomes available in this alternative include:

- Construct an auxiliary lane on EB I-80 from the West El Camino interchange to the I-5/I-80 interchange.
- Construct a shortened auxiliary lane on SB I-5 from the Arena interchange to the I-5/I-80 interchange.
- Add a lane to the SB I-5 to EB I-80 Connector, including widening of two structures on I-5: 5/80 Separation and North Connector UC.
- Improvement of the SW loop on Truxel Road.
- Improvements to the WB I-80 to NB I-5 Connector.
- Reduce improvements of the SB on-ramp loop at West El Camino on I-5.
- Add a shortened auxiliary lane between the EB I-80 to NB I-5 Mixed Flow Connector and Arena Boulevard.
- Improvements to the above mentioned loops in the NE and SW quadrants.
- Construct an auxiliary lane on EB I-80 from the I-5/I-80 interchange to the Truxel Road interchange, which connects to the existing auxiliary lane to Northgate Boulevard.

1.6.4 Alternative 2—No Build

Alternative 2 is the No Build Alternative. Alternative 2 would not add any improvements to the existing facility and would not accommodate existing and anticipated traffic growth. The existing condition and the comparison with the No Build alternative is the basis for identifying environmental impacts occurring as a result of the propose project. The no-build alternative would still have normal maintenance and necessary construction to maintain a modern, safe and structurally adequate facility without increasing capacity.

1.6.5 Transportation System Management (TSM) and Transportation Demand Management (TDM)

Transportation System Management (TSM) strategies consist of actions that increase the efficiency of existing roadways; they are actions that increase the number of vehicle trips a roadway can carry without increasing the number of through lanes. Examples of TSM strategies include ramp metering, auxiliary lanes, turning lanes, reversible lanes, and traffic signal coordination. Transportation Demand Management (TDM) focuses on regional strategies for reducing the number of vehicle trips and vehicle miles traveled, as well as increasing vehicle occupancy.

Although Transportation System Management measures alone could not satisfy the purpose and need of the project, the proposed project includes a number of TSM strategies. Auxiliary lanes will be constructed in several locations. Traffic Operations System (TOS) elements, such as ramp metering, changeable message signs, and closed circuit television cameras, will be installed as specified by the Caltrans District 3 Office of Traffic Operations.

Transportation Demand Management (TDM) focuses on regional strategies for reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. It facilitates higher vehicle occupancy or reduces traffic congestion by expanding the traveler's transportation choice in terms of travel method, travel time, travel route, travel costs, and the quality and convenience of the travel experience. TDM recognizes that as urban areas continue to grow, opportunities for investments in transportation infrastructure ("supply" or capacity side) become limited and that urban transportation corridors increasingly lack the physical space to accommodate more lanes. Thus, typical TDM strategies focus on the "demand" side to make existing transportation facilities work better (Association for Commuter Transportation, et al. 2004). Demand-side strategies are designed to better balance people's need to travel a particular route at a particular time with the capacity of available facilities to efficiently handle this demand. General TDM activities can range from infrastructure investments like high occupancy vehicle lanes and preferential parking spaces, to more programmatic investments like tax-based incentives and marketing. More targeted strategies can include guaranteed ride home programs for carpoolers, transit pass programs, flexible work schedules and real-time route information. The purpose of this project is to provide congestion relief by carrying more people in fewer vehicles during peak periods and promote ride sharing and the use of high occupancy vehicles, such as carpools, vanpools, and express bus services. The proposed project will construct an HOV flyover and connect future HOV lanes to provide continuity of HOV lanes in the vicinity of the project. As such, this project is a transportation demand project by definition.

1.6.6 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. In accordance with CEQA, Caltrans will certify that the project complies with CEQA, prepare findings for all significant impacts identified, and if necessary, prepare a Statement of Overriding Considerations for impacts that will not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered prior to project approval. Caltrans will then file a Notice of Determination with the State Clearinghouse that will identify whether the project will have significant impacts, whether mitigation measures were included as conditions of project approval, whether findings were made, and whether a Statement of Overriding Considerations was adopted. Similarly, if Caltrans, as assigned by the FHWA, determines the NEPA action does

not significantly impact the environment, Caltrans will issue a Finding of No Significant Impact (FONSI) in accordance with NEPA.

1.7 Alternatives Considered but Withdrawn From Further Discussion

The following alternatives were evaluated, but were determined to be infeasible primarily due to the relative high cost and lower benefits compared with the costs and benefits provided by the alternatives chosen for further study.

1.7.1 Alternative 2A and 2B - Improve interchange and construct HOV to the West End Viaduct

Alternative 2 proposed to end the HOV lanes south of Richards Boulevard interchange. This alternative had two options: Alternative 2A decked the American River Bridge with some widening on the outside; Alternative 2B widened on the outside only, without decking the American River Bridge.

These alternatives had a much higher cost because of the longer project and the complexity of the structure, especially the bridge over the American River. The necessary widening of Richards Boulevard would also increase the cost. The City has several Richards Boulevard scenarios under study at this time, but has not determined which one to implement.

1.7.2 Alternative 3 – Improve interchange, construct HOV lanes to the West End Viaduct and construct dedicated HOV ramp to future Rail Yard improvements.

In addition to ending the HOV lanes at the West End Viaduct, as in Alternative 2, Alternative 3 adds a centerline HOV on/off-ramp connecting to the future City of Sacramento's Rail Yard project. This alternative was eliminated due to the high cost and potential environmental impacts of widening the I-5 American River Bridge.

1.7.3 Mixed Flow Alternative

As required by the Federal Highway Administration, a mixed flow alternative was analyzed in the Traffic Report. This alternative would have been very similar to the current Alternative 1A, but would have constructed mixed flow or general-purpose lanes, rather than HOV lanes.

The Mixed Flow Alternative would have served a similar number of vehicles as the proposed project; however, the HOV lane would serve 7,000 more people in the northbound direction and 4,000 more people in the southbound direction.

Since the purpose of the project is to promote ride sharing and the use of high occupancy vehicles, such as carpools, vanpools, and express bus services, the Mixed Flow Alternative would not meet the purpose and need of the project. This project is an important part of the larger existing and planned HOV network proposed for the Sacramento region. The projects in this network will be funded by Measure A, the half-cent sales tax extension from 2009 to 2030 for transportation projects that passed with approximately 75% approval by voters.

1.8 Permits and Approvals Needed

The following permits, reviews, and approvals would be required for project construction:

- California Department of Fish and Game, 2080.1 consistency determination under Fish and Game Code Section 2080.
- United States Army Corps of Engineers (USACE) Section 404 authorization under the Federal Clean Water Act.
- Regional Water Quality Control Board (RWQCB) Section 401 certification.
- United States Fish and Wildlife Service (USFWS) formal consultation under Section 7 of the Federal Endangered Species Act.
- National Emissions Standards for Hazardous Air Pollutants (NESHAP) notification to the Sacramento Metropolitan Air Quality Management District for Asbestos Demolition and Renovation.

