

**Attachment A**  
**Projects Seeking PM2.5 Project Conformity Interagency Consultation**

**Project Information**

Project Name: **Transit Security Project**  
Sponsor: **Alameda Contra Costa Transit District (AC Transit)** TIP ID: **ALA050064** RTP ID: **94526**  
Agency: **Alameda Contra Costa Transit District (AC Transit)** Mode: **OTHER TRANSIT** Sub Mode:  
Project Type: **STRUCTURE/BLDG** Trans. System: **TRANSIT** Purpose: **SYSTMGMT** County: **Alameda**  
Proj. Desc.: **AC Transit: District facilities and Buses; Install cameras on District's buses and at District's facilities, including the passenger transfer stations, also fund design and fabrication of a mobile emergency-operating center.**  
RTP Tittle: **AC Transit – transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements for rolling stock, equipment, fixed facilities and other capital assets; does not include system expansion)**

**Step 1: Project Identification**

1: Does this project have any federal funding?	Yes
2: Does this project (or any phases of the project) require any federal action (such as federal authorization or approval for funding or environmental review) after December 14, 2010?	Yes
3: Is the project exempt from both regional and project-level air quality conformity under 40 CFR 93.126? Project Type Selected: <b>None Applies</b>	No
4: Is the project exempt from regional air quality conformity under 40 CFR 93.127? Project Type Selected: <b>Bus terminals and transfer points.</b>	Yes
5: Is the project exempt from regional air quality conformity under 40 CFR 93.128? Project Type Selected: <b>None Applies</b>	No
6: Does this project meet the definition of a "project of air quality concern" under 40 CFR 93.123(b)(1)? Project Type Selected: <b>None Applies</b>	No

**Dates for Interagency Consultation**

Requested Date of Interagency Consultation:  
Meeting Date of PM2.5 consultation via Air Quality Conformity Task Force to determine POAQC:  
Action Date of PM2.5 consultation via Air Quality Conformity Task Force to determine POAQC:

**Dates for PM2.5 Hot-Spot Analysis**

Meeting Date of PM2.5 consultation via Air Quality Conformity Task Force to determine review hot-spot analysis:  
Action Date of PM2.5 consultation via Air Quality Conformity Task Force to determine review hot-spot analysis:

**Project Assessment Form for PM<sub>2.5</sub> Interagency Consultation**

<b>RTIP ID#</b> <i>(required)</i> 94526					
<b>TIP ID#</b> <i>(required)</i> ALA050064					
<b>Air Quality Conformity Task Force Consideration Date</b>					
<b>Project Description</b> <i>(clearly describe project)</i> Install security cameras on District's buses and facilities, including the passenger transfer stations, installation of security gates at the AC Transit divisions; also fund design and fabrication of a mobile emergency-operating center.					
<b>Type of Project:</b> installation of security equipment <i>Pick one project type:</i> New State highway, Change to existing State highway, New regionally significant street, Change to existing regionally significant street, New interchange, Reconfigure existing interchange, Intersection Channelization, Intersection signalization, Roadway realignment, Bus, rail or intermodal facility/terminal/transfer point, Truck weight/inspection station					
<b>County</b> Alameda/Contra Costa		<b>Narrative Location/Route &amp; Postmiles</b> N/A  <b>Caltrans Projects – EA#</b> N/A			
<b>Lead Agency:</b>					
<b>Contact Person</b> kate Miller		<b>Phone#</b> 5108914859	<b>Fax#</b> 5108917139	<b>Email</b> kmiller@actr	
<b>Federal Action for which Project-Level PM Conformity is Needed</b> <i>(check appropriate box)</i>					
<input checked="" type="checkbox"/>	<b>Categorical Exclusion (NEPA)</b>	<input type="checkbox"/> <b>EA or Draft EIS</b>	<input type="checkbox"/> <b>FONSI or Final EIS</b>	<input type="checkbox"/> <b>PS&amp;E or Construction</b>	<input type="checkbox"/> <b>Other</b>
<b>Scheduled Date of Federal Action:</b>					
<b>NEPA Delegation – Project Type</b> <i>(check appropriate box)</i>					
<input checked="" type="checkbox"/>	<b>Exempt</b>	<input type="checkbox"/> <b>Section 6004 – Categorical Exemption</b>	<input type="checkbox"/> <b>Section 6005 – Non-Categorical Exemption</b>		
<b>Current Programming Dates</b> <i>(as appropriate)</i>					
	<b>PE/Environmental</b>	<b>ENG</b>	<b>ROW</b>	<b>CON</b>	
<b>Start</b>				3/10	
<b>End</b>				6/13	

**PM<sub>2.5</sub> Project Assessment Form for Interagency Consultation**

**Project Purpose and Need (Summary):** *(please be brief)*

The project is intended to protect the critical public infrastructure. Project components include installation of cameras on District's buses to include data storage and recovery systems; design and fabrication of a mobile emergency-operating center with interoperable communication capabilities between other transit and law enforcement agencies, along with CERES radio capabilities; and installation of cameras at District's facilities, including high-density passenger stations, to include data storage and recovery systems along with site hardening (i.e. intrusion alarms, gates, and access systems). The cameras to be installed at the facilities will be equipped with digital systems with real-time recovery capabilities and be monitored from two anti-terrorist surveillance centers.

**Surrounding Land Use/Traffic Generators** *(especially effect on diesel traffic)*

N/A

**Opening Year:** If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

N/A

**RTP Horizon Year / Design Year:** If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

N/A

**Project Assessment Form for PM<sub>2.5</sub> Interagency Consultation**

**Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT**

N/A

**RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT**

N/A

**Opening Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses**

N/A

**RTP Horizon Year / Design Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses**

N/A

**Describe potential traffic redistribution effects of congestion relief *(impact on other facilities)***

N/A

**Comments/Explanation/Details *(please be brief)***

**Project Information**

Project Name: **Zero Emission Bus Advanced Demonstration**  
 Sponsor: **Alameda Contra Costa Transit District (AC Transit)** TIP ID: **ALA070046** RTP ID: **94526**  
 Agency: **Alameda Contra Costa Transit District (AC Transit)** Mode: **BUS** Sub Mode:  
 Project Type: **LOCAL BUS** Trans. System: **TRANSIT** Purpose: **ENHANCEMENT** County: **Alameda**  
 Proj. Desc.: **AC Transit: Zero Emission Bus Advanced Demonstration project required by CARB regulations, including purchase of 12 new ZEBs, and associated fueling, maintenance facilities, testing/monitoring of buses, solar panels for hydrogen generation.**  
 RTP Title: **AC Transit – transit operating and capital improvement program (including replacement, rehabilitation and minor enhancements for rolling stock, equipment, fixed facilities and other capital assets; does not include system expansion)**

**Step 1: Project Identification**

1: Does this project have any federal funding?	Yes
2: Does this project (or any phases of the project) require any federal action (such as federal authorization or approval for funding or environmental review) after December 14, 2010?	Yes
3: Is the project exempt from both regional and project-level air quality conformity under 40 CFR 93.126? Project Type Selected: <b>None Applies</b>	No
4: Is the project exempt from regional air quality conformity under 40 CFR 93.127? Project Type Selected: <b>None Applies</b>	No
5: Is the project exempt from regional air quality conformity under 40 CFR 93.128? Project Type Selected: <b>None Applies</b>	No
6: Does this project meet the definition of a "project of air quality concern" under 40 CFR 93.123(b)(1)? Project Type Selected: <b>None Applies</b>	No

**Dates for Interagency Consultation**

Requested Date of Interagency Consultation:  
 Meeting Date of PM2.5 consultation via Air Quality Conformity Task Force to determine POAQC:  
 Action Date of PM2.5 consultation via Air Quality Conformity Task Force to determine POAQC:

**Dates for PM2.5 Hot-Spot Analysis**

Meeting Date of PM2.5 consultation via Air Quality Conformity Task Force to determine review hot-spot analysis:  
 Action Date of PM2.5 consultation via Air Quality Conformity Task Force to determine review hot-spot analysis:

**Project Assessment Form for PM<sub>2.5</sub> Interagency Consultation**

<b>RTIP ID# (required)</b> 94526					
<b>TIP ID# (required)</b> ALA070046					
<b>Air Quality Conformity Task Force Consideration Date</b>					
<p><b>Project Description (clearly describe project)</b>                  This project includes expanding AC Transit's Zero Emission hydrogen-electric hybrid bus fleet by 9 buses (12 new buses; we will be retiring 3 existing buses), building two hydrogen stations, and modifying and/or building 2 new maintenance bays to accommodate the new hydrogen-electric buses. It also entails the installation of alternative energy power support, including solar panels and potentially stationary fuel cell stacks to generate energy for the hydrogen fueling, maintenance bays, and other elements at the Seminary (East Oakland), Emeryville, and Central Maintenance Facilities.</p>					
<p><b>Type of Project:</b> Bus facility  <i>Pick one project type:</i> New State highway, Change to existing State highway, New regionally significant street, Change to existing regionally significant street, New interchange, Reconfigure existing interchange, Intersection Channelization, Intersection signalization, Roadway realignment, Bus, rail or intermodal facility/terminal/transfer point, Truck weight/inspection station</p>					
<b>County</b> Alameda		<b>Narrative Location/Route &amp; Postmiles</b>  <b>Caltrans Projects – EA#</b>			
<b>Lead Agency:</b> AC Transit					
<b>Contact Person</b> Kate Miller		<b>Phone#</b> (510) 891-4859	<b>Fax#</b> (510) 891-7139	<b>Email</b>	
<b>Federal Action for which Project-Level PM Conformity is Needed (check appropriate box)</b>					
x	<b>Categorical Exclusion (NEPA)</b>	<b>EA or Draft EIS</b>	<b>FONSI or Final EIS</b>	<b>PS&amp;E or Construction</b>	<b>Other</b>
<b>Scheduled Date of Federal Action:</b> 2010/2011 depending on project element and when funding becomes available					
<b>NEPA Delegation – Project Type (check appropriate box)</b>					
x	<b>Exempt</b>	<b>Section 6004 – Categorical Exemption</b>	<b>Section 6005 – Non-Categorical Exemption</b>		
<b>Current Programming Dates (as appropriate)</b>					
	<b>PE/Environmental</b>	<b>ENG</b>	<b>ROW</b>	<b>CON</b>	
<b>Start</b>	6/2009	10/2009	N/A	6/2009	
<b>End</b>	6/2011 (depending on element)	9/2011		6/2012	

**PM<sub>2.5</sub> Project Assessment Form for Interagency Consultation**

**Project Purpose and Need (Summary):** *(please be brief)*

This project has been mandated by the California Air Resources Board as part of the Zero Emission Bus regulation. Its purpose is to advance alternative fuel technology so that it can be commercialized for a mass transit application.

**Surrounding Land Use/Traffic Generators** *(especially effect on diesel traffic)*

N/A

**Opening Year:** If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

N/A

**RTP Horizon Year / Design Year:** If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

N/A

**Project Assessment Form for PM<sub>2.5</sub> Interagency Consultation**

**Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT**

N/A

**RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT**

N/A

**Opening Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses**

Project will be completed no later than 12/2012 but various elements will open prior to that, as follows:

Buses – all expected to arrive prior to 2/2011

Emeryville Hydrogen Station – to be completed by 2/2011

Seminary Station – to be completed by 6/2011

Solar panels – to be completed by 2/2011

Other alternative fuel sources (fuel cell stacks/electrolyzer) – 12/2012 – depending on when funding is acquired – pending federal action

**RTP Horizon Year / Design Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses**

All by 2011; 0% diesel

**Describe potential traffic redistribution effects of congestion relief (*impact on other facilities*)**

N/A

**PM<sub>2.5</sub> Project Assessment Form for Interagency Consultation**

**Comments/Explanation/Details** *(please be brief)*

**Project Information**

Project Name: **NCTPA Multi-modal Transit Center Terminal/Park and**  
Sponsor: **Napa County Transportation Planning Agency** TIP ID: **NAP990011** RTP ID: **94076**  
Agency: **Napa County Transportation Planning Agency** Mode: **OTHER TRANSIT** Sub Mode:  
Project Type: **STRUCTURE/BLDG** Trans. System: **TRANSIT** Purpose: **EXPANSION** County: **Napa**  
Proj. Desc.: **Napa Vine: Relocate existing downtown terminal in a new location with better access and more office and bus space.**  
RTP Title: **Construct the Trancas intermodal facility adjacent to the Route 29 and Redwood Road/Trancas Street interchange**

**Step 1: Project Identification**

- 1: Does this project have any federal funding? **Yes**
- 2: Does this project (or any phases of the project) require any federal action (such as federal authorization or approval for funding or environmental review) after December 14, 2010? **Yes**
- 3: Is the project exempt from both regional and project-level air quality conformity under 40 CFR 93.126?  
Project Type Selected: **None Applies** **No**
- 4: Is the project exempt from regional air quality conformity under 40 CFR 93.127?  
Project Type Selected: **Bus terminals and transfer points.** **Yes**
- 5: Is the project exempt from regional air quality conformity under 40 CFR 93.128?  
Project Type Selected: **None Applies** **No**
- 6: Does this project meet the definition of a "project of air quality concern" under 40 CFR 93.123(b)(1)? **No**  
Project Type Selected: **None Applies**

**Dates for Interagency Consultation**

Requested Date of Interagency Consultation: **JUL-SEP, 2010**  
Meeting Date of PM2.5 consultation via Air Quality Conformity Task Force to determine POAQC:  
Action Date of PM2.5 consultation via Air Quality Conformity Task Force to determine POAQC:

**Dates for PM2.5 Hot-Spot Analysis**

Meeting Date of PM2.5 consultation via Air Quality Conformity Task Force to determine review hot-spot analysis:  
Action Date of PM2.5 consultation via Air Quality Conformity Task Force to determine review hot-spot analysis:

## Attachment A-1: Project Assessment Form for PM<sub>2.5</sub> Interagency Consultation

**FTIP ID# (required):** 94070/94076

**TIP ID# (required):** NAP990011

**Air Quality Conformity Task Force Consideration Date:** TBD

### Project Description:

The project entails the relocation of a transit center and construction of an 8,000 square foot administrative office building. NCTPA buses would utilize the relocated transit center; NCTPA administrative offices would occupy the new building.

As further explained in the discussion of project need below, NCTPA needs to move the transit center to this location from the center's existing location on Pearl Street in Downtown Napa.

A detailed project description is provided in the Draft Mitigated Negative Declaration (attached).

The Federal Transit Administration (FTA) made findings in support of a categorical exclusion for the transit center aspect of this project in 2007, insofar as the transit center project has requested federal funding. FTA's 2007 categorical exclusion was based on conceptual plans for the transit center included within the City of Napa's *Soscol Gateway Redevelopment Plan*. As of August 2010, NCTPA will request FTA to re-evaluate its categorical exclusion in light of greater project detail now available.

**Type of Project (pick one project type):** Circle "Bus, rail or intermodal facility/terminal/transfer point"

**County:** Napa

### Narrative Location/Routes & Postmiles:

The project site is bounded by Soscol Avenue and the Napa Wine Train right-of-way, Burnell Street and Fourth Street - all in the City of Napa.

**Caltrans Projects – EA#:** (Not applicable)

**Lead Agency:** NCTPA

### Federal Action for which Project-Level PM Conformity is Needed (check appropriate box):

Check "Categorical Exclusion (NEPA)" box

**Scheduled Date of Federal Action:** October 2010

### NEPA Delegation – Project Type (check appropriate box):

Check "Section 6004 – Categorical Exemption" box

**Current Programming Dates (as appropriate):** Fill out box as done below:

	<b>PE/Environmental</b>	<b>ENG</b>	<b>ROW</b>	<b>CON</b>
<b>Start</b>	March 2010	September 2010	N/A	April 2010
<b>End</b>	October 2010	April 2010	N/A	October 2011

**Project Purpose and Need (Summary): *(please be brief)***

The current location of NCTPA’s transit center on Pearl Street in Downtown Napa will have severe access problems starting in late 2012 due to a decision by the United States Army Corps of Engineers (Corps) to remove the Coombs Street Bridge as a part of the multi-year, multiple component Napa River flood control project. In addition, the NCTPA’s current office space (at 707 Randolph Street) is inadequate to meet the agency’s operational needs.

The NCTPA has chosen the Soscol location after more than 7 years of studying various sites and plans. A transit center on the proposed project site was considered in the City of Napa’s 2006 *Soscol Gateway Redevelopment Plan* and associated EIR. In that EIR, the City of Napa identified several transportation and traffic related impacts of the larger redevelopment project. The EIR noted that the relocation of the NCTPA transit center to the project site now under consideration would help to mitigate certain transportation and traffic related impacts of the redevelopment project.

**Surrounding Land Use/Traffic Generators:**

North: residential

South: light industrial

East: Napa Exposition (Fairgrounds)

West: commercial, Napa Valley Wine Train right-of-way

Notably, light industrial properties to the south are expected to redevelop into more of a mixed-use area, potentially reducing the proportion of heavy diesel vehicles in the project’s vicinity.

**Opening Year: If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility – Not Applicable**

**RTP Horizon Year / Design Year: If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility – Not Applicable**

**Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT – Not Applicable**

**RTP Horizon Year / Design Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT – Not applicable**

**Opening Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses**

**Opening Year: 2012**

Daily Trips 173

Number Diesel Trips 52 (30%)

Number CNG/Gas-Hybrid trips 121 (70%)

**RTP Horizon Year / Design Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses**

**(Answer is the same as Opening year of 2012)**

Daily Trips 173

Number Diesel Trips 52 (30%)

Number CNG/Gas-Hybrid trips 121 (70%)

**Describe potential traffic redistribution effects of congestion relief (impact on other facilities)**

NCTPA commissioned a traffic study for the project in association with the environmental review process.

As documented in the traffic study, the project would result in very few (if any) new trips to downtown Napa, though it would create a shift in existing traffic patterns as existing uses several blocks to the west (the transit center and NCTPA's offices) are consolidated on this new site. Such traffic shifts would be most apparent at the intersections immediately surrounding the site.

Impacts were studied for the intersections of Soscol Avenue/3<sup>rd</sup> Street, Burnell Street/3<sup>rd</sup> Street, and Soscol Avenue/8<sup>th</sup> Street.

All three study intersections are currently operating at acceptable levels of service. With the incremental increase in traffic associated with the new transit center, the three study intersections would continue to operate acceptably, with changes in average overall vehicle delay of 0.2 seconds or less overall.

Under the cumulative timeframe (which includes buildout of the General Plan and Soscol Gateway Plan) without the project the three study intersections would be expected to operate acceptably. With the proposed transit center, the three intersections would be expected to continue operating acceptably at the same levels of service, with incremental increases in average overall vehicle delay of 0.1 seconds or less.

The traffic study included a sensitivity analysis to determine how the amount of office space on the project site could influence levels of service at the three study intersections. With a hypothetical five-fold increase in office space to 40,000 square feet, acceptable levels of service would still be expected, with incremental increases in delay of less than one second at all three intersections.

It should be noted that other City of Napa studies have identified the intersection at Silverado Trail/3<sup>rd</sup> Street (east of the project site) as operating unacceptably in both the near and long term, but since the proposed transit center is expected to add no traffic to this intersection (no bus lines would be added or removed from this intersection; any cars now traveling from the east to the current office site on Randolph Street would continue to need to traverse this intersection), no impact would occur.

# NCTPA Soscol Gateway Transit Terminal Planned Location





707 Randolph Street, Suite 100 • Napa, CA 94559-2912  
Tel: (707) 259-8631  
Fax: (707) 259-8638

September 2, 2010

Grace Cho  
Air Quality Conformity Task Force  
Metropolitan Transportation Commission  
101 8th Street  
Oakland, CA 94607

Re: Soscol Gateway Transit Center Project: PM<sub>2.5</sub> Interagency Consultation

Dear Ms. Cho,

The Napa County Transportation and Planning Agency (NCTPA) has completed the Project Assessment Form for PM<sub>2.5</sub> Interagency Consultation and uploaded it to MTC's FMS system. NCTPA respectfully requests review of the project by the Air Quality Conformity Task Force.

NCTPA believes that given several factors, the project does not require a project-level PM<sub>2.5</sub> hotspot analysis.

**Background**

Due to the Napa River Flood Control Project, NCTPA's existing transit center located at 1151 Pearl Street will no longer be accessible due to the removal of the Coombs Street Bridge. Over the past several years, NCTPA and the City of Napa have conducted several studies to determine the best location for the new transit center. The proposed site was selected based on its central location and connectivity to area transportation corridors and close proximity to the current transit center that it replaces.

The project site is approximately 1 acre in size and is bounded by Soscol Avenue and the Napa Wine Train right-of-way to the west, Burnell Street to the east and Fourth Street to the north. The attached figure shows the boundaries of the proposed project. Currently, light industrial businesses reside on the project site. The proposed project includes a 10 bus bay transit center, passenger shelters, boarding areas, street improvements, and ancillary uses. NCTPA has also incorporated into project plans an 8,000 square foot building that would serve as new permanent office space for NCTPA.



707 Randolph Street, Suite 100 • Napa, CA 94559-2912

Tel: (707) 259-8631

Fax: (707) 259-8638

The project simply entails the relocation of the transit center from its present location on Pearl Street to this proposed location. There would be no increase in bus frequency. Moreover, NCTPA is making several fleet acquisitions that would substantially reduce the number of its diesel-powered buses. By 2012, the expected opening year of the proposed transit center, six of eight NCTPA routes would be served by a fleet of gas/hybrid vehicles. On the remaining two routes, the fleet would be composed of a mix of compressed natural gas (CNG) and diesel-powered. The few remaining diesel-powered buses are equipped with diesel emission control devices that reduce emissions of particulate matter.

Based on the foregoing, NCTPA requests a finding that no project-level PM<sub>2.5</sub> hot-spot analysis is required for this project. Please feel free to contact me with any questions regarding this matter.

Sincerely,

Paul Price

Executive Director

**Project Information**

Project Name: **I-80/I-680/SR 12 Interchange Project**  
Sponsor: **Solano Transportation Authority** TIP ID: **SOL070020** RTP ID: **230326**  
Agency: **Solano Transportation Authority** Mode: **STATE HIGHWAY** Sub Mode:  
Project Type: **FREEWAY I/C** Trans. System: **STATE HWY** Purpose: **EXPANSION** County: **Solano**  
Proj. Desc.: **Fairfield: Improve I-80/I-680/Route 12 I/C(Ph 1), including connecting I-80 to SR 12 W, I-680 NB to SR 12W (Jameson Canyon), I-80 to I-680 (+ Express Lane Direct connectors), build local I/C and build new connecting local roads to SR 12/Red Top I/C.**  
RTP Title: **Improve I-80/I-680/Route 12 interchange, including connecting I-680 northbound to Route 12 westbound (Jamieson Canyon), adding connectors and reconstructing local interchanges (Phase 1)**

**Step 1: Project Identification**

1: Does this project have any federal funding?	Yes
2: Does this project (or any phases of the project) require any federal action (such as federal authorization or approval for funding or environmental review) after December 14, 2010?	Yes
3: Is the project exempt from both regional and project-level air quality conformity under 40 CFR 93.126? Project Type Selected: <b>None Applies</b>	No
4: Is the project exempt from regional air quality conformity under 40 CFR 93.127? Project Type Selected: <b>None Applies</b>	No
5: Is the project exempt from regional air quality conformity under 40 CFR 93.128? Project Type Selected: <b>None Applies</b>	No
6: Does this project meet the definition of a "project of air quality concern" under 40 CFR 93.123(b)(1)? Project Type Selected: <b>None Applies</b>	No

**Dates for Interagency Consultation**

Requested Date of Interagency Consultation: **JUL-SEP, 2010**  
Meeting Date of PM2.5 consultation via Air Quality Conformity Task Force to determine POAQC:  
Action Date of PM2.5 consultation via Air Quality Conformity Task Force to determine POAQC:

**Dates for PM2.5 Hot-Spot Analysis**

Meeting Date of PM2.5 consultation via Air Quality Conformity Task Force to determine review hot-spot analysis:  
Action Date of PM2.5 consultation via Air Quality Conformity Task Force to determine review hot-spot analysis:

<b>RTIP ID# 230326</b>					
<b>Project Description</b> <i>See attached project description – Attachment A.</i>					
<b>Type of Project</b> Change to existing state highway New interchange Reconfigure existing interchange Roadway realignment					
<b>County</b> Solano	<b>Narrative Location/Route &amp; Postmiles:</b> Near the Cities of Fairfield and Suisun City Solano County, California 04-SOL-80 PM 10.8–17.0; 04-SOL-680 PM 10.0–13.1; 04-SOL-SR 12W PM 1.7–2.8; and 04-SOL-SR 12E PM 1.8–4.8  <b>Caltrans Projects – EA# 04-0A5300</b>				
<b>Lead Agency:</b> Caltrans					
<b>Contact Person</b> Howell Chan	<b>Phone#</b> (510) 286-5623	<b>Fax#</b> (510)286-5600	<b>Email</b> <a href="mailto:Howell_chan@dot.ca.gov">Howell_chan@dot.ca.gov</a>		
<b>Hot Spot Pollutant of Concern</b> ( <i>check one or both</i> ) <b>PM2.5 X</b> <b>PM10</b>					
<b>Federal Action for which Project-Level PM Conformity is Needed</b> ( <i>check appropriate box</i> )					
<b>Categorical Exclusion (NEPA)</b>	<input checked="" type="checkbox"/>	<b>EA or Draft EIS</b>	<b>FONSI or Final EIS</b>	<b>PS&amp;E or Construction</b>	<b>Other</b>
<b>Scheduled Date of Federal Action:</b>					
<b>Current Programming Dates</b> <i>as appropriate</i>					
	<b>PE/Environmental</b>	<b>ENG</b>	<b>ROW</b>	<b>CON</b>	
<b>Start</b>	2006			2012	
<b>End</b>	2/2011			2022	
<b>Project Purpose and Need (Summary):</b> <i>See attached project description – Attachment A.</i>					

**Surrounding Land Use/Traffic Generators**

Various sensitive receptors are located in the vicinity of the project area are summarized in Figure 3.2 and may include: residences, schools, playgrounds, child care facilities, athletic facilities, health care facilities, convalescent centers, or rehabilitation centers. Land use compatibility issues relative to the siting of pollution-emitting sources or the siting of sensitive receptors must be considered. In the case of schools, state law requires that siting decisions consider the potential for toxic or harmful air emissions in the surrounding area. Figure 3.2 does not include the locations of scattered or individual sensitive receptors.

Surrounding land uses include a school and residential developments. As shown in Figure 3.2, sensitive land uses include the high school and residences west of I-680, residences north of I-80 northeast of the SR 12 West connector and north along most of I-80, residences just east of the current I-80/I-680 interchange, and residences north of SR 12 East.

SR 12 East would not be widened northward: therefore these residences would not be placed closer to the freeway. Also, the build alternative would result in the construction of the new interchange that is further away from the residences that are currently located just east of the I-80/I-680 interchange.

However, the build alternative would place the freeway closer to the high school west of I-680 and residences north of the I-80 near the SR-12 West connector. The proposed interchange ramp on I-680 would be placed approximately 1000 feet from the northeast corner of the high school, which is approximately 500 feet closer than the existing alignment at the same location. However, the new ramp would help to reduce congestion and improve traffic flow, especially in the opening year. Also, the residential development north of I-80 near the interchange with SR-12 West would be placed approximately 1500 feet from the freeway mainline, which is approximately 200 feet closer than the existing alignment. Again, the project would help to improve freeway operations at the nearest freeway segment in the opening year build scenario, with little change seen in the horizon year. Since motor vehicle emissions tend to be reduced with increased speed and reduced congestion, the project would result in improvements to air quality in the vicinity of these nearby receptors. See Attachment B for a comparison of these sensitive land uses and freeway conditions for the different scenarios.

**Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility**

**LOS:** The project would have a negligible impact on overall AM peak hour operations but would dramatically improve system-wide operations in the PM peak hour. See Attachment C.

**AADT:** Mainline AADT on I-80 in the vicinity of the Cordelia truck scales were calculated from peak hour volumes based on guidance from Fehr & Peers. This location on I-80 was chosen because it reflects the roadway segment in the project area with the highest traffic volumes. Mainline AADT at this location is estimated to be 173,265. See Attachment D.

**Truck Percentages:** AADT is 3.49% diesel trucks (estimated to be 6,047 AADT), based on Caltrans 2007 Annual Average Daily Truck Traffic on the California State Highway System data (See Attachment E) and the methodology from Section B.3.1.1 of the Caltrans CO Protocol.

In addition, project traffic engineer indicates truck percentages would not increase between the no build and build alternatives (i.e. the proportion of truck to total volume would not increase between the build and no build conditions). See Attachment F.

**RTP Horizon Year / Design Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility**

**LOS:** The project would improve both AM and PM peak hour operations, with the most drastic improvements seen in the PM peak hour. See Attachment G.

**AADT:** Mainline AADT on I-80 in the vicinity of the Cordelia truck scales were calculated from peak hour volumes based on guidance from Fehr & Peers. This location on I-80 was chosen because it reflects the roadway segment in the project area with the highest traffic volumes. Mainline AADT at this location is estimated to be 173,330. See Attachment D.

**Truck Percentages:** AADT is 3.49% diesel trucks (estimated to be 6,049 AADT) based on Caltrans 2007 Annual Average Daily Truck Traffic on the California State Highway System data (See Attachment E) and the methodology from Section B.3.1.1 of the Caltrans CO Protocol.

In addition, project traffic engineer indicates truck percentages would not increase between the no build and build alternatives (i.e. the proportion of truck to total volume would not increase between the build and no build conditions). See Attachment F.

**Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT**

**AADT:** Overall, intersection AADT would decrease at both ramp and non-ramp intersections with project implementation. Intersection volumes would decrease at the majority of intersections, with a 4.5% decrease in overall intersection AADT and the biggest reductions at ramp intersections. LOS and delay would improve further due to signalization. Overall, AADT would generally decrease at other intersections (non-ramp terminals) and LOS and delay would generally remain the same or improve. See Attachment H.

**Truck Percentages:** AADT is 3.49% diesel trucks based on Caltrans 2007 Annual Average Daily Truck Traffic on the California State Highway System data (See Attachment E) and the methodology from Section B.3.1.1 of the Caltrans CO Protocol. The project traffic engineer indicates truck percentages would not increase between the no build and build alternatives (i.e. the proportion of truck to total volume would not increase between the build and no build conditions). See Attachment F.

**RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT**

**AADT:** Overall, intersection AADT would decrease at both ramp and non-ramp intersections with project implementation. Intersection volumes would decrease at just over half of the intersections, with a 4.7% decrease in overall intersection AADT, with the biggest reductions at ramp terminals. LOS and delay would improve slightly at both ramp and non-ramp intersections (See Attachment H).

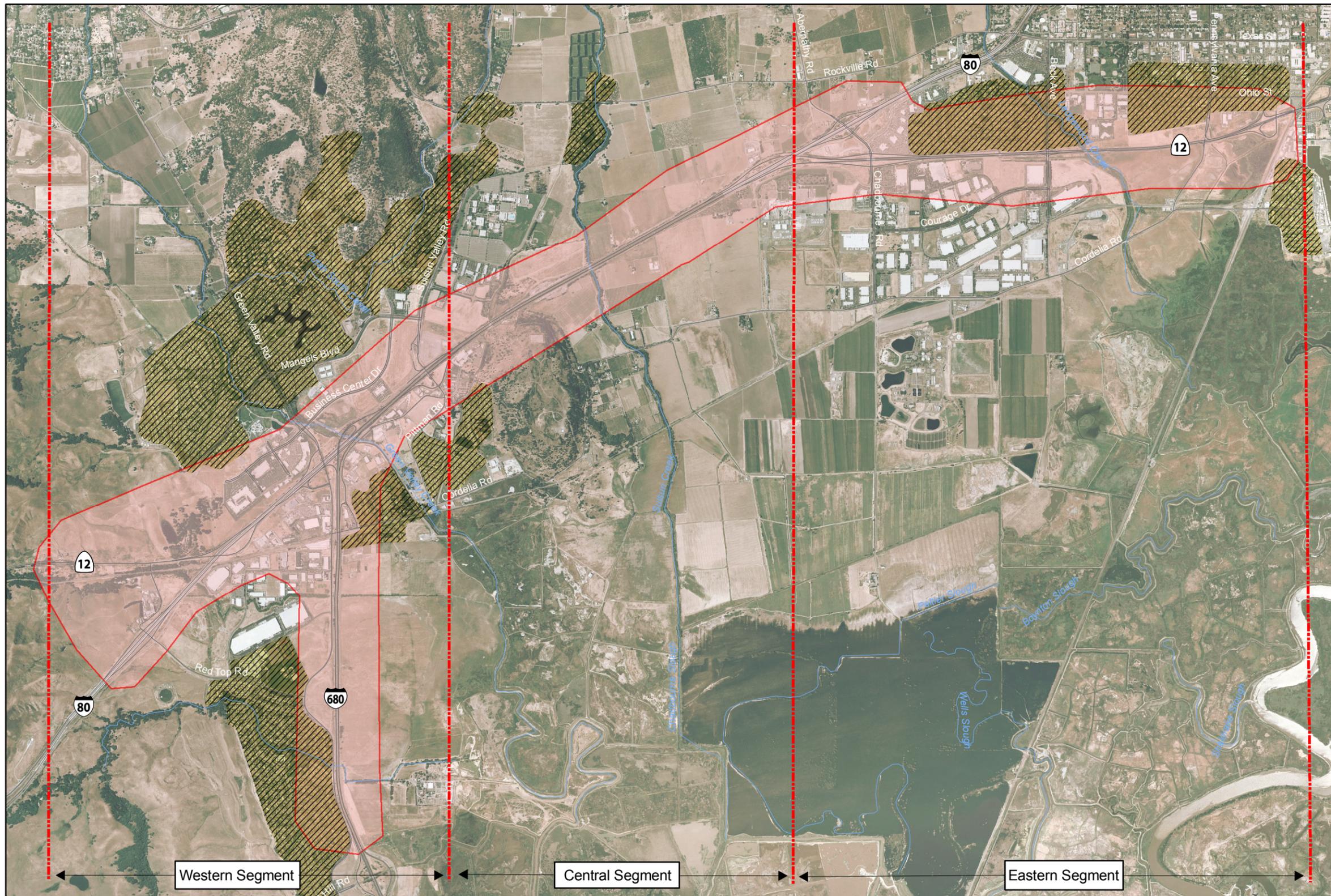
**Truck Percentages:** AADT is 3.49% diesel trucks based on Caltrans 2007 Annual Average Daily Truck Traffic on the California State Highway System data (See Attachment E) and the methodology from Section B.3.1.1 of the Caltrans CO Protocol. The project traffic engineer indicates truck percentages would not increase between the no build and build alternatives (i.e. the proportion of truck to total volume would not increase between the build and no build conditions). See Attachment F.

**Describe potential traffic redistribution effects of congestion relief**

The project would provide congestion relief and improve system-wide operations. The project would reduce system-wide travel times and increase overall speeds during both the opening and horizon years. For example, opening year average system-wide travel time in the PM peak hour would decrease by about four minutes while average speeds would increase by approximately five miles per hour for the build scenario over the no build scenario. Similarly, the horizon year build scenario would result in approximately a six minute savings in travel time and would increase average speeds by approximately nine miles per hour during the PM peak hour. System-wide congestion would improve in both the horizon year AM and PM peak hours as delay would decrease with increased average network speeds over no build conditions. See Attachment I for a summary of travel times and speeds for the different scenarios. Overall, the project would provide congestion relief by improving traffic flow and reducing vehicle hours of delay. See Attachment J.

**Comments/Explanation/Details** *(attach additional sheets as necessary)*

Design year ADT on I-80 is expected to exceed the FHWA and EPA's POAQC threshold of 125,000. However truck percentages are not in excess of the FHWA and EPA's POAQC threshold of 8 percent (10,000 diesel truck ADT), as the current diesel truck percentage of approximately 3.49% within the project area equates to truck AADT between 6047 and 6049, and truck percentages would not increase under the build alternative.. The proposed project is not considered a POAQC because truck AADT are below the EPA's POAQC threshold of 8 percent (10,000 diesel truck ADT) and implementation of the proposed project would not significantly affect diesel truck volumes and percentages between build and no build alternatives (i.e., effects to truck percentages are below 5% between the no-build and build alternatives). In addition, implementation of the project would generally result in travel time savings, decreases in hours of delay, and improvements in average network speed relative to the no build alternative. Finally, the project would not result in increased congestion at nearby intersections resulting from increased diesel vehicle traffic, as diesel traffic would remain the same between the no build and build alternatives. Note that PM10 and PM2.5 emissions were modeled within the Air Quality Study Report, and daily PM exhaust emissions would increase slightly over no build conditions in 2015 but would decrease in 2035 over no build conditions. Therefore, by the horizon year the project would result in fewer PM emissions over no build conditions.

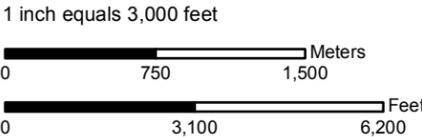


**Legend**

**I680/I80/SR12 Interchange**

-  Proposed Project Area
-  Segment Lines
-  General Location of Sensitive Receptors in Vicinity of Project Area \*

\* Does not include locations of scattered sensitive receptors in the project area.



Source: Nolte 2007, ESRI 2005, CirclePoint 2007, NAIP 2006.



Source: Circle Point 2008.

**Figure 3.2**  
Project Area Map and General Locations of Sensitive Receptors

# Attachment A

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## **Project Description**

# Attachment A Project Description

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This report was prepared for the Interstate 80/Interstate 680/State Route 12 Interchange Project (proposed project). The California Department of Transportation (the Department) is proposing to construct interchange improvements, freeway auxiliary lanes, and connecting ramps and collector-distributor roadways within its regional freeway system. The project is located along Interstate 80 (I-80), Interstate 680 (I-680), and State Route 12 (SR 12) in Solano County, California. Specifically, the project involves improvements on I-80 between Red Top Road and Abernathy Road, I-680 between Gold Hill Road and I-80, SR 12 West (SR 12W) between 0.5 mile west of Red Top Road and I-80, and SR 12 East (SR 12E) between I-80 and Civic Center Boulevard (see Figure 1-1).

This report is intended to support the preparation of joint National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA) documentation for the Department, the NEPA lead agency as delegated by the Federal Highway Administration (FHWA), and the CEQA lead agency. This report also supports efforts to obtain agreements, permits, and concurrence needed to construct the proposed project. This report evaluates the effects of the proposed project on air quality resources, based on system-wide measures of effectiveness and intersection traffic volumes under design-year (2035) conditions as reported in the traffic operations report for this project (Fehr & Peers 2008).

Two project alternatives and two first phases are being considered for the improvement of the I-80/I-680/SR 12 interchange: Alternative B; Alternative C; Alternative B, Phase I; and Alternative C, Phase I. Alternatives B and C are full buildout alternatives addressing comprehensive improvements to the interchange; the widening of I-680 and I-80; and the upgrade, expansion, and relocation of the westbound truck scales on I-80 (improvement of the eastbound truck scales have been addressed in a separate project).

Alternatives B and C each include an option (Option 1 or Option 2) for improvements to SR 12E. For the analysis presented here, Alternative B has been paired with Option 2, and Alternative C has been paired with Option 1. However, the options have been designed so that they are interchangeable. The two Phase I alternatives represent the fundable portions of the full buildout alternatives.

## 2.1 Project Purpose

The purpose of the project is to accommodate existing and future traffic volumes, to reduce congestion, and to improve safety, as well as to encourage the use of high-occupancy vehicle (HOV) lanes and improve local interchange access.

- **Reduce congestion through the I-80/I-680/SR12 interchange.** Highway widening and interchange improvement will accommodate current and future traffic volumes, including trucks.
- **Reduce the amount of cut-through traffic on local roads.** Improvements to the mainline and highway interchanges will reduce highway traffic attempts to avoid congestion on the

freeway system by utilizing local roads. The project will also improve access to local community resources and businesses and reduce delays for emergency service vehicles.

- **Accommodate current and future truck volumes on highways.** The project will improve the westbound truck scales and access to them from I-80 and SR 12E, accommodate current and future truck volumes, reduce trucks queuing to exit at the truck scales, and provide longer on-ramps to allow trucks to gain speed before entering traffic.
- **Accommodate current and future truck volumes at the truck scales facility.** The new westbound truck scales facility will be sized to accommodate anticipated truck traffic growth to at least 2040, ensuring that all trucks are weighed and inspected according to CHP requirements.
- **Improve safety conditions.** By relieving congestion through highway widening and reducing weaving by providing adequately sized off- and on-ramps for interchanges and the westbound truck scales, the project would reduce accidents and improve safety in the I-80, I-680, and SR 12 corridors.
- **Encourage the use of HOV lanes and ridesharing.** The addition of HOV connectors will encourage the use of HOV lanes and therefore encourage ridesharing.

### 2.1.1 Need for the Project

I-80 is a critical east-west connector between the San Francisco Bay Area (Bay Area), Sacramento, and regions eastward (i.e., the Sierra Nevada and beyond). Along the I-80 corridor, many segments experience extensive congestion. Traffic congestion on I-80 is particularly high within Solano County, especially along the segment where I-80, I-680, and SR 12 converge in the vicinity of the city of Fairfield.

When constructed in the 1960s the interchange was located in a relatively rural setting immediately surrounded by agricultural lands with mountains to the north and the vast Suisun Marsh to the south. Since the 1960s the Bay Area and Northern California experienced rapid population growth. The Bay Area's population has grown by more than 86% during this time and Solano County's population has more than tripled. This tremendous rate of growth has resulted in substantial increases in regional traffic passing through the interchange area as well as substantial changes in the land uses immediately surrounding the interchange.

Regional truck scale facilities are also located within the I-80/I-680/SR 12 interchange. The location of the truck scales is ideal for monitoring and enforcing truck weight and safety requirements because it provides one location that can monitor truck traffic on I-80, I-680, and SR 12. However, the volume of trucks that need to be weighed and inspected has increased dramatically since the 1960s. Trucks must exit then re-enter the freeway within the I-80/I-680/SR 12 interchange area after inspection at the truck scales facility. The exiting and entering of a large volume of trucks creates a severe weaving problem that is made worse by the size, limited maneuverability, and lower speeds of large trucks.

In response to this issue, STA in cooperation with the Department and the CHP conducted the *Cordelia Truck Scales Relocation Study*, adopted February 2005. This study evaluated

alternatives for relocating and expanding the truck scales facility and determined that the preferred alternative is to relocate and expand the truck scales within the existing interchange complex. The Department and STA have moved forward with a project to relocate and expand the eastbound Cordelia Truck Scales facility as a separate project. Relocation and expansion of the westbound truck scales facility is included as part of the I-80/I-680/SR12 interchange project.

The specific deficiencies to be addressed by the proposed project are described below.

### **2.1.2 Traffic Congestion**

The I-80/I-680/SR 12 interchange is vital to the mobility of both the local area and the entire northern California region because it serves a multitude of destinations. It is a critical corridor for local and regional commute travel. Over the past ten years, commute travel through the area has increased substantially in response to the growing Bay Area economy and expansion of employment centers, which has pushed commuters further east as they search for affordable housing. By 2030, commute traffic is projected to constitute between 40% and 75% of the total number of vehicles traveling through the project area.

Current traffic volumes along segments of I-80 and I-680 in the project area create heavy traffic congestion. The afternoon peak hour period represents the heaviest congestion period within the project area.

During the morning peak hour, a queue typically develops on westbound I-80 at the SR 12W connector primarily due to trucks that are not able to keep up speed on the grade on SR 12W toward Napa, resulting in slow traffic in the shoulder lane on I-80. This combined with trucks entering from the truck scales and weaving vehicles headed to the Suisun Valley Road off-ramp or southbound I-680 connector, results in slow-moving queues in lanes 4 and 5. The congestion typically extends from the SR 12W westbound off-ramp to SR 12E.

During the afternoon peak hour, a bottleneck develops on eastbound I-80 between the Travis Boulevard on-ramp and the Air Base Parkway off-ramp, resulting in queues that extend back to the West Texas interchange, slowing traffic between the Beck Avenue eastbound on-ramp and the Travis Boulevard eastbound on-ramp. The signalized intersections on SR 12E at Beck and Pennsylvania Avenues also cause some queuing on eastbound SR 12E.

Currently the following roadway segments within the project area experience traffic operating speeds of less than 35 miles per hour (mph) during the peak periods:

- Westbound I-80 (shoulder lane only) between the I-80/I-680 interchange and SR 12W during the morning peak period.
- Westbound I-80 (right two lanes only) between SR 12E and the Suisun Valley Road off-ramp during the morning peak period.
- Northbound I-680 between Central Avenue and I-80 during the afternoon peak period.
- Eastbound I-80 between SR 12W and the Cordelia Truck Scales during the afternoon peak period.

- Eastbound I-80 between the Beck Avenue and Travis Boulevard during the afternoon peak period.

The current average freeway travel speed through the project area is 46 mph during the morning peak period and 33 mph during the afternoon peak period. These average speeds are well below the threshold of 59.7 miles per hour identified by the Highway Capacity Manual as the minimum operating speed associated with acceptable mainline freeway operations (Fehr & Peers 2009). Analysis indicates that travel speeds will drop to 42 mph during the morning peak period and 16 mph during the afternoon peak period by 2035 without the project. The duration of congestion, with the freeway system operating at or near capacity, would increase from 1 to 2 hours in the morning peak period to 3 to 4 hours; in the evening peak period, the duration of congestion would increase from 1.5 to 2.5 hours to 6 to 7 hours.

### 2.1.3 Traffic Diverting to Local Roads

The congestion and delays experienced on the freeway system encourage some motorists to exit the freeway at local interchanges and use local surface streets to bypass the congestion. Most notable is the amount of traffic using local streets to bypass the congestion experienced at the transition from northbound I-680 to eastbound I-80. This segment operates poorly during the evening peak period, particularly on Fridays, when long queues develop between I-80 and the Gold Hill Road interchange. The diversion will increase substantially in 2035 without the project, as freeway travel times are projected to increase by up to 300% in the p.m. peak hour.

The diversion of freeway traffic to local streets creates increased congestion and delay on local roads, reduced accessibility for local properties, and increased delay for transit and emergency service vehicles.

### 2.1.4 Truck Related Congestion

The Cordelia Truck Scales (formally known as the Cordelia Commercial Vehicle Enforcement Facility), located on I-80 between Suisun Valley Road and SR 12E, were built in 1958. Two truck scale facilities are located within the I-80/I-680/SR 12 interchange: one serving the eastbound direction and one serving the westbound direction. The replacement of the eastbound facility has been addressed in a previous project. Only the facility serving westbound truck traffic is addressed here.

Although the truck scales are currently in an optimum location to capture virtually all freeway truck traffic traveling on I-80, I-680, and SR 12, they also are located on the most congested freeway segment in Solano County. Trucks slowing to enter the short (approximately 500 feet) off-ramp to the scales, and accelerating to enter I-80 on the short on-ramp from the scales, exacerbate the congestion problem, as do trucks queuing onto the mainline from the short off-ramp to the facility. The *I-80/I-680/I-780 MIS and Corridor Study* states,

The Cordelia Truck Scales generate significant congestion in Segment 1 [the I-80/I-680/SR 12 Interchange complex] during peak hours. The scales also constrain the widening of I-80 in

Segment 1 in their current location, and need to be relocated prior to additional improvements being pursued in this section. The recommendation of the STA Board of Directors is to relocate/reconstruct the scales in a location east of Suisun Creek within Segment 1.

Currently, congestion develops during the commute peak hours as a result of trucks weaving with traffic streams to and from the I-680 connector ramps, the local Suisun Valley/Green Valley ramps, and the SR 12E and SR 12W connector ramps. This congestion will worsen significantly by 2035. The a.m. peak hour congestion in the westbound direction extends from the I-80/I-680 junction to West Texas Street, a distance of nearly 4.5 miles. Heavy westbound on-ramp volumes from the SR 12E and Air Base Parkway interchanges also contribute to the congestion during the a.m. peak period.

While the current combination of general vehicle traffic volumes and truck volumes create congestion, the I-80 mainline traffic volume is projected to increase by about 2% per year, to 270,000 daily vehicles, in 2035. Along with the truck traffic increase described above, the traffic increases will severely worsen current congestion and safety conditions if the scales are not expanded to accommodate the higher truck volumes and moved to a location that provides for maximum weaving lengths and for braiding critical traffic streams.

### **2.1.5 Unreliable Freight Transport**

Currently, travel times for truck trips through the corridor are unpredictable due to the queues that develop within the scales facility and congestion that is partially caused by trucks maneuvering into and out of the scales facility, described above. This unpredictability will increase as vehicle and truck volumes grow, also as described above. Further unpredictability results from the increased likelihood of breakdowns due to un-inspected trucks that have been allowed to bypass the scales when they are periodically closed due to queues backing up onto the mainline.

### **2.1.6 Traffic Safety**

The total accident rates for most segments of I-80 between Red Top Road and West Texas Street exceed the average rate for similar facilities (see Table 2-1). Fatal and/or fatal plus injury accident rates exceed the statewide average on each I-80 segment. The total accident rate also exceeds the statewide average for similar facilities on SR 12W just west of the I-80 connector, and for three of the four segments of SR 12E between the I-80 connector and Civic Center Boulevard. The fatal plus injury accident rate exceeds the statewide average on the same three segments of SR 12E.

**Table 2-1. Accident History from January 1, 2004 to December 31, 2006**

Location	Post Mile	Number of Accidents			Actual Accident Rate (acc/million veh miles)			Average Accident Rate (acc/million veh miles)		
		Total	Fatal	F + I	Total	Fatal	F + I	Total	Fatal	F + I
I-80—Westerly Project Limit to Red Top Road U/C	10.89 to 11.39	86	0	19	1.29	0.000	0.29	0.82	0.004	0.26
I-80—Red Top Road U/C to SR 12W/I-80 Connector Structure	11.39 to 11.98	83	0	19	1.05	0.000	0.24	0.83	0.004	0.24
I-80—SR 12W/I-80 U/C to Green Valley Road O/C	11.98 to 12.74	157	1	36	1.20	0.008	0.27	0.94	0.005	0.30
I-80—Green Valley Road O/C to I-680/I-80 Connector Structure	12.74 to 13.09	117	1	24	1.63	0.014	0.33	1.05	0.005	0.33
I-80—I-680/I-80 Connector Structure to Suisun Valley Road O/C	13.09 to 13.49	158	0	34	1.81	0.000	0.39	1.10	0.006	0.35
I-80—Suisun Valley Road O/C to SR 12E/I-80 Connector Structure	13.49 to 15.81	598	1	137	1.10	0.002	0.25	1.04	0.006	0.34
I-80—SR 12E/I-80 Connector Structure to Abernathy Road O/C	15.81 to 16.17	61	1	18	0.83	0.014	0.24	1.05	0.005	0.33
I-80—Abernathy Road O/C to West Texas Street U/C	16.17 to 17.20	200	2	63	0.95	0.010	0.30	1.05	0.005	0.33
I-680—½ Mile South of Gold Hill O/C to I-80/I-680 Connector	9.5 to 13.1	120	1	56	0.61	0.005	0.28	1.03	0.011	0.38
SR 12 West—½ Mile West of Red Top Road to SR 12W/I-80 Connector	1.75 to 2.76	52	0	14	1.44	0.000	0.39	1.35	0.028	0.64
SR 12 East—SR 12E/I-80 Connector to Chadbourne Road U/C	1.85 to 2.22	7	0	3	0.48	0.000	0.21	0.76	0.008	0.28
SR 12 East—Chadbourne Road U/C to Beck Avenue	2.22 to 3.20	64	2	31	1.54	0.048	0.75	1.13	0.011	0.44
SR 12 East—Beck Avenue to Pennsylvania Avenue	3.20 to 4.07	108	1	50	2.49	0.023	1.15	1.82	0.022	0.84
SR 12 East—Pennsylvania Avenue to Civic Center Blvd.	4.07 to 4.74	55	0	25	1.51	0.000	0.68	1.27	0.012	0.50

Source: TASAS data, 2004 – 2006.

Notes: Shading denotes locations that exceed the statewide average accident rate.

## 2.2 Project Background

### 2.2.1 Project History

The I-80/I-680/SR 12 Interchange Project (the proposed project) is located in the Bay Area and is included in the Metropolitan Transportation Commission's (MTC's) 2035 regional transportation plan (RTP) (Metropolitan Transportation Commission 2008). Planning efforts that have led to development of the proposed project began in the late 1980s. The following is a summary of those efforts.

- **1989:** The MTC and the Sacramento Area Council of Governments (SACOG) completed the *Strategic Transportation Planning Study (STPS)*. The STPS was a joint study of the regional I-80 corridor that forecast long-term congestion on I-80 and showed that use of I-80 by local traffic in Solano County was a major contributing factor to that congestion.
- **1996:** The MTC completed the *Interstate 80 Corridor Study*, which advanced a long-term multimodal strategy and investment plan for improving mobility in the I-80 corridor.

- **1998:** The STA completed the *Solano Travel Safety Plan*, which identified the 40 intersections with the highest accident rates and provided accident data for the 13 freeway segments in the county.
- **2001:** The STA completed the *I-80/I-680/I-780 Major Investment Study [MIS], Segment 1: I-80/I-680/SR 12 Tier 2 Evaluation Report*. The I-80/I-680/I-780 MIS provided a set of implementable projects to improve traffic flow on all of the Solano County freeways. The MIS built on the *Solano County Comprehensive Transportation Plan*, which established policies for non-highway elements of the transportation system.
- **2003:** The FHWA, the Department, and the STA began scoping for the environmental impact statement/environmental impact report (EIS/EIR) for improvements to the I-80/I-680/SR 12 interchange. The three agencies also had initial discussions about the potential need for NEPA/Clean Water Act (CWA) Section 404 integration, which is a formal effort to coordinate the review and approval of key EIS/EIR elements and how they address waters of the United States and associated sensitive species. A memorandum of understanding (MOU) between the FHWA, the Federal Transit Administration (FTA), the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the Department outlines the NEPA/CWA Section 404 integration process.
- **2004:** The STA completed the *I-80/I-680/I-780 Major Investment & Corridor Study, Final Report*, which developed a long-range, multimodal transportation plan for the I-80, I-680, and I-780 corridors in Solano County. The study made recommendations for funded near-term, recommended mid-term, and long-term multimodal improvements, including HOV lanes and park-and-ride lots along the I-80/I-680/I-780 corridors.
- **2004:** The STA completed the *I-80/I-680/I-780 Transit Corridor Study*. The study reviewed the express bus capital and operating needs along the I-80/I-680/I-780 corridors and presented recommendations for short- and medium-range improvements to the current system, a long-range vision plan for park-and-ride facilities, increased express bus services, and expanded maintenance facilities (Solano Transportation Authority 2004).
- **2005:** The STA completed the *Cordelia Truck Scales Relocation Study* in cooperation with the CHP and the Department to identify potential sites along the I-80, I-505, SR 12, and SR 113 corridors that could satisfactorily accommodate the relocation of the existing truck scales located in the I-80/I-680/SR 12 interchange. The study documented the screening of the various location options and recommended that the truck scales be relocated approximately 0.5 mile to the east of the I-80/I-680/SR 12 interchange.

## 2.2.2 Related Projects

Several related transportation projects are being planned or were recently completed in the general project area. These projects are listed below (with their Department Expense Authorization (EA) project numbers where appropriate) in order of anticipated completion:

- **I-80/I-680 Auxiliary Lanes Project:** The I-80/I-680 Auxiliary Lanes Project created a continuous fifth lane on I-80 between I-680 and SR 12E and added a second lane to the I-80

ramps connecting I-680. This project was completed in 2004 and cost \$26 million to construct.

- **Benicia-Martinez Bridge Replacement Project:** The new Benicia-Martinez Bridge Replacement Project, which provides a new I-680 crossing over the Carquinez Strait between Contra Costa and Solano Counties was completed in 2007. This construction project includes the new five-lane bridge (four mixed-use and one slow-vehicle lane), a new 17-booth toll plaza, reconstruction of the I-680/I-780 and I-680/Marina Vista Road interchanges, and modifications to the existing bridge.
- **State Route 12 West Truck Climbing Lane Project:** This project constructed a truck climbing lane in the westbound direction on SR 12W from I-80 to west of Red Top Road. This project reduces congestion on SR 12W and the I-80/SR 12W interchange by providing an additional lane for slow-moving trucks, thereby allowing automobiles to pass. Construction of this project was complete in late 2008.
- **North Connector Project:** The North Connector Project will construct a parallel route to the north of I-80 between Abernathy Road at I-80 on the east and SR 12 at Red Top Road on the west. This project is proposed to provide increased east/west capacity and provide an alternative to I-80 for local traffic. Construction of the east end of the North Connector Project began in summer 2009.
- **I-80 HOV Lanes Project:** Construction of the eastbound and westbound HOV lanes along an approximate 7.5-mile-long segment of I-80 from SR 12W in Solano County to 0.5 mile east of Air Base Parkway in Fairfield started in June 2008. Completion is scheduled for late 2009. This project (EA-04-0A5300) will increase the overall carrying capacity of I-80 in the project area and facilitate the high demand for ridesharing on I-80.
- **Transit improvements:** To support increased transit ridership and expanded bus routes in the County, the *I-80/I-680/I-780 Transit Corridor Study* identifies numerous potential locations for park-and-ride lots in these major corridors, three of which could be located in the project area. These include Red Top Road at I-80, a surface lot at Abernathy Road between I-80 and SR 12, or as an expanded parking structure at the Fairfield Multimodal Transportation Center, and Gold Hill Road at I-680. These potential lots are expected to be constructed between 2010 and 2015.

## 2.3 Overview of the Project

Two full-build alternatives (Alternatives B and C) and two first phases (Alternative B Phase I and Alternative C Phase I) are currently being considered for the improvement of the I-80/I-680/SR 12 interchange. Alternatives B and C are full-build alternatives addressing comprehensive improvements to the I-80/I-680/SR 12W interchange; the widening of I-680 and I-80; and the relocation, upgrade, and expansion of the westbound truck scales on I-80. Alternatives B and C each include an option (Option 1 or Option 2) for improvements to SR 12E. For the analysis presented here, Alternative B has been paired with Option 2, and Alternative C has been paired with Option 1. Alternatives B and C and Options 1 and 2 are designed so that either option can be combined with either alternative. Should it be determined that a different

pairing is preferable, it would be feasible to construct either alternative with either option. This document addresses environmental impacts of each option and each alternative.

The two Phase I alternatives represent the initially fundable portions of the full-build alternatives. Phase I construction is expected to begin in 2012. There are no projected dates for later phases of construction. All the alternatives are discussed more completely below.

Because of the geographical extent of the project, the project area is divided into three segments: western, central, and eastern (Figure 2-1). The western segment begins just west of the I-80/Red Top Road interchange and ends at the I-80/Suisun Valley Road interchange. The central segment begins at the I-80/Suisun Valley Road interchange and ends at the SR 12E/Chadbourne Road interchange. The eastern segment begins at the SR 12E/Chadbourne Road interchange and ends at the Fairfield overhead where SR 12E crosses over the Union Pacific Railroad (UPRR) tracks just west of Suisun City.

## **2.4 Full-Build Alternatives**

### **2.4.1 Features Common to Full-Build Alternatives**

#### **2.4.1.1 Summary**

The proposed improvements that are common to both alternatives are described below.

- I-80 would be widened to a minimum of 10 lanes and a maximum of 19 lanes.
- I-680 would be widened to a minimum of six lanes and a maximum of eight lanes.
- A new road would be constructed to connect the I-80/Red Top Road interchange with Business Center Drive. A new interchange would be constructed at I-680/Red Top Road, and another would be constructed where the relocated Red Top Road and the extension of Business Center Drive meet at SR 12W. Improvements would be made at the I-80/SR 12E interchange, the Green Valley Road interchange, the Red Top Road/I-80 undercrossing, the Abernathy Road/I-80 interchange, and the Chadbourne Road/SR 12E undercrossing.
- The westbound truck scales would be relocated east of the existing truck scales and east of Suisun Creek, and would be upgraded and expanded.
- SR 12E would be widened to six lanes, and the at-grade intersections would be replaced with overcrossings.
- Westbound SR 12E would be widened to three lanes and a separate exit into the westbound truck scales facility would be added. The connectors between SR 12W (Jameson Canyon) and I 80 to the east would be reconstructed.
- Single-span bridges would replace existing bridges over Green Valley, Dan Wilson, and Suisun Creeks, and one new single-span bridge would be constructed over Suisun Creek. The existing UPRR underpass at I-80 would be replaced 45 feet west of the existing structure.

- Local road improvements would be made to Red Top Road, Business Center Drive, Green Valley Road, Neitzel Road, Suisun Valley Road, Abernathy Road, Chadbourne Road, Beck Avenue, Ramsey Road, West Street, Meyer Way, and Pennsylvania Avenue.

#### **2.4.1.2 Specific Elements**

##### ***Western Segment***

###### **Mainline Improvements**

Under both alternatives, I-80 and I-680 would be widened. I-80 would be widened to a minimum of 10 lanes (four mixed-flow lanes and one HOV lane in each direction) and a maximum of 19 lanes east of the interchange with I-680. I-680 would be widened to a minimum of six lanes (two mixed-flow lanes and one HOV lane in each direction) and a maximum of eight lanes (three mixed-flow lanes and one HOV lane in each direction).

Single-span bridges would replace existing bridges over Green Valley Creek.

###### **Freeway-to-Highway Interchange Improvements**

Under both alternatives, the connectors between SR 12W (Jameson Canyon) and I-80 to the east would be reconstructed as two-lane connectors on new alignments. These connectors would also be braided with the new ramps for the Green Valley Road/I-80 interchange. The existing UPRR underpass at I-80 would be replaced 45 feet west of the existing structure.

###### **Local Road Improvements**

A new road would be constructed to connect the I-80/Red Top Road interchange with Business Center Drive. Between I-80 and SR 12W, Red Top Road would be realigned to cross over the UPRR and SR 12W approximately 0.25 mile west of the existing SR 12W/Red Top Road intersection. From SR 12W to Business Center Drive, the new road would be an extension of Business Center Drive, originally proposed as part of the overall North Connector Project. Construction of the new road would necessitate considerable excavation, the spoils of which would be used as fill in the construction of embankment associated with the project.

###### **Local Interchange Improvements**

There would be a new diamond interchange where the relocated Red Top Road and the extension of Business Center Drive meet at SR 12W. The existing Red Top Road undercrossing at I-80 would be widened to accommodate additional HOV lanes on I-80. The westbound on- and off-ramps would be realigned. Under all alternatives, traffic in both directions traveling between I-80 west of Red Top Road and SR 12W (Jameson Canyon) would use the realigned portion of Red Top Road.

The Green Valley Road interchange would be reconstructed under both alternatives. The general configuration would be the same for each alternative, with diagonal westbound off- and on-ramps and a diagonal off-ramp and loop on-ramp in the eastbound direction. The addition of the diagonal westbound off-ramp would allow the removal of Neitzel Road, the frontage road connecting Suisun Valley Road to Green Valley Road.

A new interchange would be constructed at I-680/Red Top Road, consisting of an extension of Red Top Road from Lopes Road to an overcrossing over I-680 connecting to on- and off-ramps. Southbound I-680 on- and off-ramps would be located within the existing curve of Lopes Road. Ramsey Road would be realigned to accommodate the northbound on- and off-ramps, but would not be connected to the interchange. There would be a loop on-ramp to northbound I-680. Access between the interchange and Ramsey Road would not be provided.

## **Central Segment**

### **Mainline Improvements**

Both alternatives propose the same basic improvements for I-80 east of Dan Wilson Creek. There would be 19 lanes on I-80 in the central segment, dropping to 12 lanes at the SR 12E interchange. Single-span bridges would replace existing bridges over Dan Wilson and Suisun Creeks. Additionally, one new single-span bridge would be constructed over Suisun Creek to accommodate traffic from the westbound truck scales.

The westbound truck scales would be relocated east of the existing truck scales and east of Suisun Creek and would be upgraded and expanded. The truck scales' connectivity from SR 12E would be improved by a new direct connection from westbound SR 12E to the westbound truck scales. The ramp from I-80 to the truck scales would be braided (pass under) with the connector from SR 12E to westbound I-80.

### **Freeway-to-Freeway Interchange Improvements**

The I-80/SR 12E interchange would be improved by grade-separating the I-80/SR 12E connector from the off-ramp from I-80 into the westbound truck scales. Westbound SR 12E would be widened to three lanes, and a separate exit into the westbound truck scales facility would be added.

Access from westbound I-80 to eastbound SR 12E and from westbound SR 12E to eastbound I-80 would continue to be provided by the I-80/Abernathy Road (Suisun Parkway) and SR 12E/Chadbourne Road interchanges.

### **Local Interchange Improvements**

The I-80 Suisun Valley Road overcrossing would be rebuilt with four lanes in each alternative. The ramp configurations are different under each alternative.

The Abernathy Road/I-80 interchange would be improved. The existing westbound on- and off-ramps would be reconstructed to accommodate a loop on-ramp. This interchange would become the Suisun Parkway/I-80 interchange with completion of the eastern segment of STA's North Connector Project.

## **Eastern Segment**

### **Mainline Improvements**

SR 12E would be widened from four to six mixed-flow lanes (three in each direction), and the at-grade intersections of SR 12E with Beck Avenue and Pennsylvania Avenue would be replaced with overcrossings.

To accommodate additional lanes on SR 12E, two box culverts containing Ledgewood Creek and a drainage canal (Alonzo Drain) west of Ledgewood Creek would be lengthened.

### Local Interchange Improvements

The Chadbourne Road undercrossing at SR 12E would be widened on each side to accommodate additional SR 12E lanes.

### Local Road Improvements

Beck Avenue would be reconstructed on a retaining wall-supported embankment between Meyer Way and Diamond Way. Beck Avenue (between Meyer Way and SR 12E) would be widened by one through lane northbound.

Pennsylvania Avenue would be reconstructed on fill from 1,000 feet south of SR 12E to Illinois Street. Between Illinois Street and SR 12E, Pennsylvania Avenue would be widened by one through lane southbound. On the south side of SR 12E, Pennsylvania Avenue would be widened from one through lane in each direction to two through lanes in each direction.

A road located south of SR 12E (the southern frontage road, Meyer Way, in Alternative B and the eastbound off-ramp to Pennsylvania Avenue in Alternative C) would intersect with Pennsylvania Avenue and then cross above the UPRR, connecting to an extended West Street in Suisun City. West Street in Suisun City would be extended from Solano Street north to Spring Street. It would be on an embankment supported by retaining walls to intersect the roadway crossing over the UPRR tracks.

## **2.4.2 Alternative B**

This section describes improvements under Alternative B that are different from those under Alternative C.

### **2.4.2.1 Summary**

Alternative B would retain the same basic alignments for I-80 and I-680 that currently exist (Figure 2-2). However, the I-80/I-680 interchange would be reconfigured so that the main I-680 connectors, along with HOV lane connectors, come into and out of the median of I-80. There would also be two-lane connectors provided primarily for trucks between the outside lanes of I-80 at Suisun Valley Road and I-680; these would be braided and combined with the ramps for Suisun Valley Road.

Alternative B would improve access between I-80 and SR 12 (east and west), widen I-80 up to a total of 19 lanes between I-680 and the truck scales, and improve on- and off-ramps. All bridges over creeks would be replaced with single-span structures. The new westbound off-ramp to Green Valley Road would necessitate the removal of Neitzel Road. Separate connector ramps for trucks between I-680 and eastbound I-80 would be braided with the Suisun Valley Road ramps.

The direct connection from northbound I-680 to westbound I-80 and westbound SR 12W would be eliminated. Traffic would need to use Red Top Road via a new I-680/Red Top Road interchange to complete these movements.

Improvement of the I-80/I-680 interchange would necessitate realigning Central Way.

#### **2.4.2.2 Specific Elements**

The section below describes elements of Alternative B by segment.

##### ***Western Segment***

###### ***Mainline Improvements***

I-80 eastbound would be realigned to the south in the vicinity of Green Valley Creek to accommodate both the I-680 connectors and through I-80 HOV lanes in the median.

The UPRR overhead on I-680 (where I-680 crosses the UPRR) would be widened to accommodate the widening of the highway.

I-80 westbound would be realigned to the north in the vicinity of Green Valley Creek to accommodate both the I-680 connectors and through I-80 HOV lanes in the median.

###### ***Freeway-to-Freeway Interchange Improvements***

Improvements to the I-80/SR 12W interchange would include widening existing facilities and braiding the ramps for SR 12W and Green Valley Road. A new, wider grade separation structure between SR 12W and I-80 accommodating three mixed-flow lanes would be constructed to provide access from SR 12W to eastbound I-80 and southbound I-680. The connector would split after the bridge, with a two-lane branch providing access to eastbound I-80 and a one-lane branch providing access to southbound I-680 with an undercrossing at Lopes Road. The existing connector ramp from westbound I-80 to westbound SR 12W would be reconstructed to the north and would cross over the on-ramp to westbound I-80 from Green Valley Road.

The I-80/I-680 interchange would be reconstructed at the existing location. Access from northbound I-680 to eastbound I-80 would be via a grade separation crossing the eastbound lanes of I-80 and entering the highway between the mixed-flow and HOV through lanes on eastbound I-80. This connector would have three lanes, two mixed-flow and one HOV lane, with the mixed-flow lanes adding lanes to I-80 and the HOV lane merging with the through HOV lane on eastbound I-80. A two-lane connector from northbound I-680 would provide access to Suisun Valley Road and eastbound I-80 (for trucks accessing the truck scales). This connector would include single-span bridges over Green Valley Creek and the Suisun Valley Road off-ramp from I-80.

The two left mixed-flow lanes from westbound I-80 would transition to southbound I-680, together with a single HOV lane diverging from the through HOV lane of I-80. A separate right-side connector accommodating trucks leaving the westbound truck scales for southbound I-680 would be provided, crossing underneath the Suisun Valley Road overcrossing before crossing I-80. Access to this connector from Suisun Valley Road would also be provided.

The through HOV lanes on I-80 would pass through the I-680 interchange on their own alignment between the three-lane connectors described above.

Eastbound traffic on I-80 would access southbound I-680 via a slip ramp from the eastbound I-80 off-ramp to Green Valley Road and then transitioning to the adjacent connector from westbound SR 12W to southbound I-680.

#### **Local Interchange Improvements**

The Green Valley Road interchange would be reconstructed with a four-lane overcrossing connecting to existing Lopes Road on the south side of I-80. Access from Green Valley Road to southbound I-680 via the loop ramp connecting eastbound I-80 with I-680 would be removed (traffic would continue down Green Valley Road/Lopes Road to the proposed I-680/Red Top Road interchange). See the discussion of common features for the proposed ramps.

The northbound I-680 exit to Central Way would be removed. Alternate traffic routes would be via the new off-ramp from I-680 to Red Top Road and then Lopes Road or via the new ramp from I-680 to Suisun Valley Road.

#### **Local Road Improvements**

Central Way would be realigned to accommodate the I-80/I-680 interchange. A new single-span bridge would be constructed on Central Way over Green Valley Creek to accommodate two lanes of traffic.

### **Central Segment**

#### **Local Interchange Improvements**

The I-80/Suisun Valley Road interchange would be reconstructed incorporating a loop on-ramp in the eastbound direction. The road would be realigned and a replacement Suisun Valley Road overcrossing would be constructed over I-80. The westbound I-80-to-southbound I-680 right-side connector for trucks would also pass underneath the Suisun Valley Road overcrossing. In the westbound direction, ramps would be elevated to meet the overcrossing in a tight diamond configuration. The westbound on-ramp would provide access to I-80 and to southbound I-680. The eastbound on-ramp would loop under the overcrossing, and the eastbound off-ramp would be accessible from eastbound I-80 and northbound I-680.

### **Eastern Segment**

#### **Local Interchange Improvements**

Alternative B would construct one combined diamond interchange to serve both Beck Avenue and Pennsylvania Avenue with one-way frontage road couplet between Beck Avenue and Pennsylvania Avenue. The existing SR 12E ramps at Jackson Street and Webster Street (both in Fairfield) would remain.

The eastbound off-ramp from SR 12E to Beck Avenue would become a two-lane, one-way eastbound frontage road on the south side of the highway between Beck Avenue and Pennsylvania Avenue. There would be a two-lane, one-way westbound frontage road on the north side of the highway from Pennsylvania Avenue to Beck Avenue, where it would become

the westbound on-ramp to SR 12E. Midway between Beck Avenue and Pennsylvania Avenue there would be a central overcrossing connecting the one-way frontage road couplet and extending south to intersect the extended Meyer Way. Eastbound traffic to Pennsylvania Avenue would exit SR 12E west of Beck Avenue and continue on the south-side eastbound frontage road, past the on-ramp to SR 12E to access Pennsylvania Avenue. Traffic from Pennsylvania Avenue would access westbound SR 12E via the north-side frontage road and the on-ramp at Beck Avenue. Westbound traffic on SR 12E would exit the highway west of Pennsylvania Avenue to the north-side westbound frontage road and continue on to Beck Avenue. Traffic from Pennsylvania Avenue would access eastbound SR 12E by heading west on the north-side westbound frontage road and then circling back to use the south-side eastbound on-ramp at the central overcrossing.

Separate bridges over LedgeWood Creek would be constructed to support the frontage road couplet.

### Local Road Improvements

The intersection at Beck Avenue and Meyer Way would be widened, and Meyer Way would be extended east from Beck Avenue to Pennsylvania Avenue as a four-lane, two-way road with a new three-span bridge constructed over LedgeWood Creek. A “T” intersection on Meyer Way just east of LedgeWood Creek would provide access to the new central SR 12E interchange. Meyer Way would continue east through a new intersection with Pennsylvania Avenue, over the UPRR tracks to intersect West Street in Suisun City.

## **2.4.3 Alternative C**

This section describes improvements under Alternative C that are different from those under Alternative B.

### **2.4.3.1 Summary**

This alternative would realign I-680 to the west to connect directly with the I-80/SR 12W interchange, consolidating the existing two half-interchanges (Figure 2-3). All of the I-80, I-680, and SR 12W connections would be freeway-to-freeway connections and would be braided with the adjacent local interchange (Green Valley Road) ramps to reduce weaving and merging movements. Separate HOV direct connectors would be provided from the median of I-680 to the median of I-80 to the east. The abandoned portion of the original alignment of I-680 would be relinquished to the City of Fairfield and converted to a local street. Interchanges on SR 12E would be constructed at Beck Avenue and Pennsylvania Avenue.

Alternative C would improve access between I-80 and SR 12 (west and east), widen I-80 to a total of up to 19 lanes between I-680 and the truck scales, and improve on- and off-ramps. All bridges over creeks would be replaced with single-span structures.

### **2.4.3.2 Specific Elements**

Below is a description of the elements of Alternative C by segment.

## **Western Segment**

### **Mainline Improvements**

I-680 would be realigned to the west to connect with SR 12W. The former alignment of I-680 would be relinquished to the City of Fairfield and become Lopes Road.

The existing bridges over Green Valley Creek on eastbound and westbound I-80 would be replaced with single-span structures, and a westbound diagonal off-ramp would be constructed (including a bridge crossing Green Valley Creek).

### **Freeway-to-Freeway Interchange Improvements**

The I-80/I-680/SR 12W interchange would be consolidated in the location of the existing I-80/SR 12W interchange. Both I-680/SR 12W movements would be via direct connectors. These direct connectors would cross over I-80, the UPRR tracks, and Fulton Drive before merging/diverging with the I-680/eastern leg of I-80 connectors.

I-80/I-680 movements would be via freeway-to-freeway ramps. Motorists' access from northbound I-680 to westbound I-80 would be served by a loop ramp off the I-680-to-SR 12W connector. A separate direct connector structure would be provided for HOV traffic between the median of I-680 and the median of the eastern leg of I-80; the two directions would be separated by a barrier. A two-lane mixed-flow connector ramp would cross over the UPRR tracks and local roads and would allow traffic to transfer from northbound I-680 to eastbound I-80. Traffic from eastbound I-80 to southbound I-680 would use a new two-lane ramp. A connector would carry traffic from westbound I-80 to southbound I-680 over I-80, the UPRR tracks, Fulton Drive, and Lopes Road.

### **Local Interchange Improvements**

Improvements to I-680 would include the construction of an interchange at Red Top Road.

Green Valley Road would be realigned and connected with the former location of I-680 south of I-80 to provide access for local residents as well as a north-south arterial. The I-80/Green Valley Road interchange would be reconstructed with a seven-lane overcrossing. The westbound on-ramp to I-80 and eastbound off-ramp from I-80 would be braided with the ramps between I-80 and SR 12W and therefore would not provide access to and from SR 12W (this connection is provided by Business Center Drive connecting to the proposed SR 12W/Red Top Road interchange).

### **Local Road Improvements**

An undercrossing would be constructed at Lopes Road and I-680. Lopes Road would be realigned to the west between Jameson Creek and Red Top Road. Fermi Drive would be realigned to intersect Lopes Road west of I-680. Between the UPRR overhead and the Green Valley Road overcrossing of I-80, Auto Plaza Court would be extended to provide access to Old Lopes Road/Green Valley Road and Central Way. There would be new at-grade intersections on Auto Plaza Court with Old Green Valley Road, Lopes Road (formerly I-680 embankment), and Central Way. Old Lopes Road would have a cul-de-sac between Fulton Drive and Jameson Creek.

## **Central Segment**

### **Local Interchange Improvements**

The Suisun Valley Road interchange on I-80 would be improved, incorporating a loop off-ramp and diagonal on-ramp in the westbound direction. Suisun Valley Road would be realigned, and the overcrossing at I-80 would be reconstructed. The eastbound on- and off-ramps would be reconstructed in a tight diamond configuration.

## **Eastern Segment**

### **Local Interchange Improvements**

Alternative C would construct separate interchanges at Beck Avenue and Pennsylvania Avenue. The existing SR 12E ramps between Jackson Street and Webster Street (both in Fairfield) would be removed. Jackson Street would terminate at Illinois Street. Webster Street would continue south under SR 12E connecting to the proposed south-side frontage road west of the proposed UPRR crossing.

A tight diamond interchange, including an overcrossing, would be constructed at Beck Avenue. Elevated two-lane on- and off-ramps would intersect the overcrossing of SR 12E. The LedgeWood Creek box culvert would be lengthened to accommodate the westbound off-ramp and eastbound on-ramp, as well as additional lanes on SR 12E.

The interchange at Pennsylvania Avenue would include an overcrossing and loop on-ramps in both directions. The westbound off-ramp would provide access to northbound and southbound Pennsylvania Avenue.

### **Local Road Improvements**

Jackson Street would terminate at Illinois Street. Webster Street would continue south under SR 12E, connecting to the proposed south-side frontage road west of the proposed UPRR crossing.

A two-way street would connect to Pennsylvania Avenue at the eastbound ramp terminal, providing access to Suisun City (as in Alternative B) and also to an extension of Webster Street.

## **2.5 Phase I Alternatives**

### **2.5.1 Alternative B, Phase I**

#### **2.5.1.1 Summary**

This alternative is a subset of Alternative B that represents a funded phase with logical termini and independent utility; it is being analyzed here as an independent alternative for the purposes of NEPA compliance. This alternative includes improvements to the Green Valley Road Interchange, the I-80/I-680 interchange, and the Suisun Valley Road interchange, all on I-80; and improvements to the Beck Avenue interchange on SR 12E (Figures 2-4a and 2-4b).

### 2.5.1.2 Specific Elements

#### ***Mainline Improvements***

Eastbound I-80 would be widened from six lanes to eight lanes between I-680 and the eastbound truck scales off-ramp, where it would conform to the existing lane configuration after construction of the eastbound truck scales project. Westbound I-80 would be widened from six to seven lanes between the existing westbound truck scales and I-680. New single-span bridges over Green Valley Creek would replace the current bridges to accommodate the realignment of the through lanes on I-80 and the separate HOV roadway in the new interchange with I-680. The existing bridge for I-80 at Dan Wilson Creek would be widened on both sides to accommodate the additional through lanes between I-680 and the truck scales.

A third mixed-flow lane would be added to northbound I-680 beginning about 1,000 feet south of the Cordelia overhead, and an HOV lane would be added just north of the Cordelia overhead. Southbound I-680 would be widened per the full-build Alternative B in the vicinity of the I-80/I-680 interchange, continuing with four lanes (three mixed-flow and one HOV) from just after the merge from the outside truck connector to around the future Red Top Road interchange. From that point to just north of the Gold Hill Road interchange, there would be three mixed-flow lanes, with the third lane dropping at the Gold Hill Road exit. The southbound HOV designation would drop within the limits of the Red Top Road interchange.

#### ***Freeway-to-Freeway Interchange Improvements***

Improvements to the I-80/I-680 interchange would include all four ultimate connectors between I-680 and I-80 to the east and would provide for direct connection between HOV facilities on I-80 to the east and I-680. See the detailed discussion of this interchange in the Alternative B section above. The improvements include the direct ramp from northbound I-680 to Suisun Valley Road. The outside truck connector from westbound I-80 to southbound I-680 would exit from I-80 just west of the Suisun Valley Road overcrossing in this phase, forcing the postponement of the ultimate direct connection from Suisun Valley Road to westbound I-80 and southbound I-680. (This movement will continue to use a relocated Neitzel Road to Green Valley Road to I-680 or westbound I-80.)

The ramp from northbound I-680 to westbound I-80 would be removed, consistent with ultimate improvements for Alternative B. Traffic from northbound I-680 to westbound I-80 and SR 12W would exit on the Suisun Valley Road ramp, cross over the freeway on the overcrossing, take Neitzel Road to Business Center Drive to Green Valley Road, and use the westbound Green Valley Road on-ramp.

#### ***Local Interchange Improvements***

The Green Valley Road overcrossing at I-80 would be replaced to accommodate the proposed realignment and widening of I-80. The overcrossing would consist of the four western lanes of the ultimate seven-lane structure. Green Valley Road approaching from the north would be widened. The on- and off-ramps would be realigned in Phase I and changed in later phases, as would the Neitzel Road off-ramp at Suisun Valley Road.

Improvements to the Suisun Valley Road interchange would include reconstructing the Suisun Valley Road interchange and realigning the eastbound on- and off-ramps. Eastbound on- and off-

ramps would be the same as under the full-build project, incorporating a loop on-ramp. The westbound off-ramp and access to Neitzel Road (the westbound frontage road) would be realigned slightly to accommodate the widening of westbound I-80 and Suisun Valley overcrossing. This realignment would be temporary and Neitzel Road would be removed under the full-build project when a new westbound I-80 off ramp is built to Green Valley Road.

A tight diamond interchange with an overcrossing would be constructed at Beck Avenue on SR 12E. The associated on- and off-ramps would include lengthening the existing culverts carrying Ledge Creek and the Alonzo Drain.

### **Local Road Improvements**

Neitzel Road would be realigned to the north to accommodate the new outside I-680 truck connector.

The intersections at Beck Avenue and Diamond Way (north of the highway) and Beck Avenue and Courage Drive (south of the highway) would be improved.

## **2.5.2 Alternative C, Phase I**

### **2.5.2.1 Summary**

This alternative is a subset of Alternative C that represents a funded phase with logical termini and independent utility; it is being analyzed here as an independent alternative for the purposes of NEPA compliance. This alternative would improve the connections from westbound I-80 to I-680 and SR 12W; directly connect northbound I-680 and SR 12W; connect the I-80/Red Top Road interchange with Business Center Drive; and construct or improve interchanges at SR 12W/Red Top Road, I-80/Red Top Road, I-80/Green Valley Road, and I-680/Red Top Road (see Figure 2-5).

### **2.5.2.2 Specific Elements**

#### **Mainline Improvements**

Westbound I-80 would be realigned between a point west of Suisun Valley Road to just west of the SR 12W/I-680 interchange by constructing a new six-lane highway alignment north of the existing highway alignment. The realignment would create space in the median for direct HOV connector ramps to be built between I-80 and I-680 as well as future widening of the eastbound lanes. The realigned westbound I-80 would have six lanes, including an HOV lane and an auxiliary lane matching the existing cross section at the existing Suisun Valley Road overcrossing. Immediately west of the Suisun Valley Road overcrossing, a seventh lane would be added and an eighth lane added with the on-ramp from Suisun Valley Road. A ninth lane would be added immediately west of the Green Valley Road off-ramp. The four right lanes would exit from I-80 to connect to SR 12W and I-680. There would be a left exit from the HOV lane to an HOV connector to I-680. A wider, single-span bridge would replace the existing bridge over Green Valley Creek. The existing loop on-ramp from northbound I-680 to westbound I-80 would be removed. The connector from northbound I-680 to SR 12W would be constructed to replace this movement.

The portion of I-680 north of Red Top Road would be realigned.

A third lane would be added to eastbound SR 12E. This lane would connect (start) at the eastbound SR 12E/Chadbourne Road interchange and would extend east connecting and ending at the eastbound SR 12E/Webster Street exit.

### **Freeway-to-Freeway Interchange Improvements**

New connector ramps from westbound I-80 to westbound SR 12W and southbound I-680 would be constructed, similar to those described under the full-build alternative. The proposed westbound I-80-to-southbound I-680 connector would cross over I-80, the eastbound SR 12W connector to eastbound I-80, the UPRR tracks, Fulton Drive, and the realigned Lopes Road. Access from westbound I-80 to westbound SR 12W would be braided with (cross over) the Green Valley Road on-ramp to westbound I-80. A separate direct connector structure would be built to carry the HOV lanes in both directions between I-680 and I-80 east of the I-80/I-680/SR 12 interchange. The direct connection from SR 12W to southbound I-680 would not be built as part of Phase I; traffic would use Red Top Road from the new SR 12W/Red Top Road interchange to the new I-680/Red Top Road interchange.

Motorists traveling eastbound on SR 12W wishing to go to southbound I-680 would exit SR 12W at the proposed SR 12W/Red Top Road interchange and continue along Red Top Road to an on-ramp at the new I-680/Red Top Road interchange.

### **Local Interchange Improvements**

The Green Valley Road/I-80 interchange would have a tight diamond configuration westbound and a partial cloverleaf (loop on-ramp) configuration in the eastbound direction. The same interchange and overcrossing would provide access to the existing alignment of I-680 (which would be relinquished as a local arterial, as above).

The connection from eastbound SR 12W and eastbound I-80 to southbound I-680 would be removed, with traffic expected to use Red Top Road from the new SR 12W/Red Top Road interchange to the new I-680/Red Top Road interchange. A new on-ramp at Green Valley Road would provide access to the new westbound I-80 alignment.

The I-80/Red Top Road interchange would be partially reconstructed to have a westbound exit loop. Red Top Road would be realigned to connect this interchange on I-80 with a new interchange of Red Top Road and SR 12W, as under the full-build alternative. The I-680/Red Top Road interchange would be constructed as under the full-build alternative.

### **Local Road Improvements**

During the initial construction of Phase I, a bicycle path would be relocated along the western boundary of the business park at the west end of the existing Business Center Drive parking lot and along the north side of the new connector from westbound I-80 to westbound SR 12W to maintain access between the existing bicycle path along Jameson Canyon (SR 12W) and Business Center Drive. This path would be removed when the North Connector roadway (Business Center Drive/Red Top Road) had been extended to the SR 12W/Red Top Road interchange. The existing Green Valley Road overcrossing at I-80 would be removed, and a new

one would be constructed on a different alignment. The overcrossing would consist of the western four lanes of the ultimate seven-lane structure.

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## Acronyms

Interstate 80/Interstate 680/State Route 12 Interchange Project (proposed project .....	1
California Department of Transportation (the Department.....	1
Interstate 80 (I-80) .....	1
Interstate 680 (I-680) .....	1
State Route 12 (SR 12) .....	1
State Route 12 West (SR 12W) .....	1
SR 12 East (SR 12E).....	1
National Environmental Policy Act (NEPA .....	1
California Environmental Quality Act (CEQA) .....	1
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# Attachment B

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## **Sensitive Land Use Distances and Freeway Conditions**

## Sensitive Land Uses and PM Peak Hour Freeway Conditions

Sensitive Land Use	Traffic Conditions (AM/PM)				
	Existing	2015 No Build	2015 Build C1	2035 No Build	2035 Build C1
High School west of I-680					
Distance from Mainline (feet)	1500	1500	1000	1500	1000
Speed (mph)	≥60 / 50-59 <sup>1</sup>	≥60 / <30 <sup>1</sup>	≥ 60 / 50-59 <sup>2</sup>	50-59 / <30 <sup>1</sup>	≥60 / <30 <sup>2</sup>
LOS	D/B	C/F	B/D	E/F	D/F
Density	27/16	20/115	18/30	36/148	29/167
Residences north of I-80 WB at SR-12 West WB					
Distance from Mainline (feet)	1700	1700	1500	1700	1500
Speed (mph)	50-59 / 50-59 <sup>3</sup>	≥ 60 / ≥ 60 <sup>3</sup>	≥ 60 / ≥ 60 <sup>4</sup>	50-59 / ≥ 60 <sup>3</sup>	≥60/ ≥60 <sup>4</sup>
LOS	E/D	C/B	B/B	D/B	C/B
Density	66/33	26/19	16/14	33/13	21/15

The roadway segment in the Traffic Report is identified as the following:

- 1 NB-680, between Gold Hill and Central Wy
- 2 NB-680, to SR 12 West
- 3 WB I-80, to Jameson Canyon Rd (SR12 W connector)
- 4 WB I-80, to SR 12 West/I-680 Connector

Source: Draft TRAFFIC OPERATIONS REPORT FOR THE I-80/ I-680/SR 12 INTERCHANGE PROJECT REPORT. June 2009

# Attachment C

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## 2015 AM Freeway LOS

**TABLE 6-4  
 2015 ALTERNATIVE C PHASE I AM PEAK HOUR  
 FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
<b>Eastbound I-80</b>					
EB I-80, west of Red Top Road	Mainline	17	B	17	B
EB I-80, to Red Top Road	Diverge	14	B	14	B
EB I-80, from Red Top Road	Merge	9	A	N/A <sup>3</sup>	
EB I-80, between Red Top Road and SR 12 West	Mainline	22	C	14	B
EB I-80, between SR 12 West and Green Valley Road / I-680 SB	Weave <sup>2</sup>	17	B	N/A <sup>3</sup>	
EB I-80, from SR 12 West Connector	Merge	N/A <sup>3</sup>		11	B
EB I-80, from NB I-680 Connector	Merge	18	B	19	B
EB I-80, between I-680 and Green Valley Road	Mainline	N/A <sup>3</sup>		18	B
EB I-80, from Green Valley Road	Merge	11	B	N/A <sup>3</sup>	
EB I-80, between Green Valley Road and Pittman Road	Weave <sup>2</sup>	N/A <sup>3</sup>		19	B
EB I-80, between Pittman Road and Truck Scales	Weave <sup>2</sup>	18	B	19	B
EB I-80, to EB SR 12 East Connector	Diverge	11	B	15	B
EB I-80, between SR 12 East and Truck Scales	Mainline	N/A <sup>3</sup>		16	B
EB I-80, between Truck Scales and Abernathy Road	Weave <sup>2</sup>	19	B	17	B
EB I-80, between Abernathy Road and West Texas Street	Weave <sup>2</sup>	16	B	17	B
EB I-80, between Beck Avenue and Travis Boulevard	Weave <sup>2</sup>	15	B	16	B
EB I-80, from Travis Boulevard	Merge	10	B	11	B
EB I-80, between Travis Blvd. and Air Base Prkwy. / Waterman Blvd.	Mainline	14	B	15	B
EB I-80, to Air Base Parkway / Waterman Boulevard	Diverge	12	B	13	B
EB I-80, from Air Base Parkway / Waterman Boulevard	Merge	13	B	14	B
EB I-80, east of Air Base Parkway / Waterman Boulevard	Mainline	18	C	17	B
<b>Westbound I-80</b>					
WB I-80, east of Waterman Boulevard / Air Base Parkway	Mainline	31	D	30	D
WB I-80, to Waterman Boulevard Diagonal	Diverge	24	C	24	C
WB I-80, to Air Base Parkway Loop	Diverge	22	C	22	C
WB I-80, from Air Base Parkway / Waterman Boulevard	Merge	30	D	32	D
WB I-80, between Waterman Blvd. / Air Base Pkwy. and Travis Blvd.	Mainline	34	D	34	D
WB I-80, to Travis Boulevard	Diverge	30	D	33	D
WB I-80, from Travis Boulevard	Merge	24	C	25	C
WB I-80, between Travis Boulevard Loop and Oliver Road	Weave <sup>2</sup>	30	D	30	D
WB I-80, from Oliver Road / West Texas Street	Merge	31	D	33	D
WB I-80, to Abernathy Road	Diverge	34	D	33	D
WB I-80, from Abernathy Road	Merge	23	C	22	C
WB I-80, from SR 12 East	Merge	22	C	24	C
WB I-80, between SR 12 East Connector and Truck Scales	Mainline	33	D	32	D

**TABLE 6-4  
 2015 ALTERNATIVE C PHASE I AM PEAK HOUR  
 FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
WB I-80, to Truck Scales	Diverge	18	B	25	C
WB I-80, between Truck Scales and Suisun Valley Road	Weave <sup>2</sup>	37	E	31	D
WB I-80, between Suisun Valley Road and Green Valley Road	Weave <sup>2</sup>	N/A <sup>3</sup>		24	C
WB I-80, to Southbound I-680 Connector	Diverge	24	C	N/A <sup>3</sup>	
WB I-80, from NB I-680	Merge	30	C	N/A <sup>3</sup>	
WB I-80, to SR 12 West/I-680 Connector	Diverge	N/A <sup>3</sup>		16	B
WB I-80, between Green Valley Road and SR 12 West	Weave <sup>2</sup>	26	C	N/A <sup>3</sup>	
WB I-80, between SR 12 West/I-680 Connector and Green Valley Rd	Mainline	N/A <sup>3</sup>		19	C
WB I-80, between SR 12 West and Red Top Road	Mainline	21	C	N/A <sup>3</sup>	
WB I-80, from Green Valley Rd	Merge	N/A <sup>3</sup>		15	B
WB I-80, to Red Top Road	Diverge	23	C	21	C
WB I-80, from Red Top Road	Merge	19	B	23	C
WB I-80, west of Red Top Road	Mainline	14	B	22	C
<b>Northbound I-680</b>					
NB I-680, to Gold Hill Road	Diverge	20	B	20	C
NB I-680, from Gold Hill Road	Merge	19	B	22	C
NB I-680, to Red Top Road	Diverge	N/A <sup>3</sup>		21	C
NB I-680, from Red Top Road	Merge	N/A <sup>3</sup>		19	B
NB I-680, between Gold Hill Road and Central Way	Mainline	20	C	N/A <sup>3</sup>	
NB I-680, to Central Way	Diverge	21	C	N/A <sup>3</sup>	
NB I-680, to SR 12 West	Diverge	N/A <sup>3</sup>		18	B
NB I-680, to Suisun Valley Road	Diverge	17	B	N/A <sup>3</sup>	
NB I-680, off HOV Bypass	Diverge	N/A <sup>3</sup>		16	B
<b>Southbound I-680</b>					
SB I-680, from HOV Bypass	Merge	N/A <sup>3</sup>		19	B
SB I-680, from EB I-80 / Green Valley Road	Merge	28	C	N/A <sup>3</sup>	
SB I-680, between I-80 and Gold Hill Road	Mainline	27	D	N/A <sup>3</sup>	
SB I-680, to Red Top Road	Diverge	N/A <sup>3</sup>		25	C
SB I-680, from Red Top Road	Merge	N/A <sup>3</sup>		26	C
SB I-680, to Gold Hill Road	Diverge	26	C	27	C
SB I-680, from Gold Hill Road	Merge	27	C	26	C
<b>Eastbound SR 12 West</b>					
EB SR 12 West, west of Red Top Road	Mainline	N/A <sup>3</sup>		10	A
EB SR 12 West, to Red Top Road	Diverge	N/A <sup>3</sup>		10	B
EB SR 12 West, from Red Top Road	Merge	N/A <sup>3</sup>		8	A

**TABLE 6-4  
 2015 ALTERNATIVE C PHASE I AM PEAK HOUR  
 FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
<b>Westbound SR 12 West</b>					
WB SR 12 West, from I-680	Merge	N/A <sup>3</sup>		18	B
WB SR 12 West, from Red Top Road	Merge	N/A <sup>3</sup>		22	C
WB SR 12 West, west of Red Top Road	Mainline	N/A <sup>3</sup>		24	C
<b>Eastbound SR 12 East</b>					
EB SR 12 East, between Truck Scales and Chadbourne Road	Weave <sup>2</sup>	10	A	10	B
EB SR 12 East, from Chadbourne Road	Merge	12	B	12	B
EB SR 12 East, to Webster Street	Diverge	15	B	15	B
EB SR 12 East, between Webster Street and Civic Center Boulevard	Weave <sup>2</sup>	11	B	11	B
EB SR 12 East, from Civic Center Boulevard	Merge	14	B	14	B
<b>Westbound SR 12 East</b>					
WB SR 12 East, to Main Street	Diverge	<b>68</b>	<b>F</b>	<b>79</b>	<b>F</b>
WB SR 12 East, between Main Street and Jackson Street	Weave <sup>2</sup>	<b>74</b>	<b>F</b>	<b>85</b>	<b>F</b>
WB SR 12 East, from Jackson Street	Merge	<b>105</b>	<b>F</b>	<b>111</b>	<b>F</b>
WB SR 12 East, to Abernathy Road	Diverge	26	C	26	C
WB SR 12 East, from Abernathy Road	Merge	21	C	24	C
Notes: [No Shading] = Under Capacity, [Light Gray] = Near Capacity, [Medium Gray] = At/Over Capacity, [Dark Gray] = 25% Over Capacity, [Black] = More than 50% Over Capacity					
<b>BOLD</b> = segment operates unacceptably. * = Denotes segment operates at capacity.					
1. Density is expressed in vehicles per hour per lane. Speed is expressed in miles per hour and is the speed over all lanes (excluding HOV).					
2. Level of service thresholds for weaving sections are different than mainline sections. Refer to Table 1 for thresholds.					
3. N/A – This segment is not applicable for this scenario. It is a ramp or freeway segment that isn't present in one scenario, but is in the other.					
Source: Fehr & Peers, May 2009.					

# Attachment C

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## 2015 PM Freeway LOS

**TABLE 6-6  
2015 ALTERNATIVE C PHASE I PM PEAK HOUR  
FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
<b>Eastbound I-80</b>					
EB I-80, west of Red Top Road	Mainline	25	C	25	C
EB I-80, to Red Top Road	Diverge	20	B	20	B
EB I-80, from Red Top Road	Merge	18	B	N/A <sup>3</sup>	
EB I-80, between Red Top Road and SR 12 West	Mainline	18	C	23	C
EB I-80, between SR 12 West and Green Valley Road / I-680 SB	Weave <sup>2</sup>	29	D	N/A <sup>3</sup>	
EB I-80, from SR 12 West Connector	Merge	N/A <sup>3</sup>		32	D
EB I-80, from NB I-680 Connector	Merge	<b>100</b>	<b>F</b>	<b>49</b>	<b>F</b>
EB I-80, between I-680 and Green Valley Road	Mainline	N/A <sup>3</sup>		<b>47</b>	<b>F</b>
EB I-80, from Green Valley Road	Merge	<b>50</b>	<b>F</b>	N/A <sup>3</sup>	
EB I-80, between Green Valley Road and Pittman Road	Weave <sup>2</sup>	N/A <sup>3</sup>		<b>53</b>	<b>F</b>
EB I-80, between Pittman Road and Truck Scales	Weave <sup>2</sup>	<b>96</b>	<b>F</b>	<b>64</b>	<b>F</b>
EB I-80, to EB SR 12 East Connector	Diverge	<b>136</b>	<b>F</b>	<b>71</b>	<b>F</b>
EB I-80, between SR 12 East and Truck Scales	Mainline	N/A <sup>3</sup>		23	C
EB I-80, between Truck Scales and Abernathy Road	Weave <sup>2</sup>	22	C	26	C
EB I-80, between Abernathy Road and West Texas Street	Weave <sup>2</sup>	21	C	25	C
EB I-80, between Beck Avenue and Travis Boulevard	Weave <sup>2</sup>	21	C	25	C
EB I-80, from Travis Boulevard	Merge	21	C	23	C
EB I-80, between Travis Blvd. and Air Base Prkwy. / Waterman Blvd.	Mainline	24	C	27	D
EB I-80, to Air Base Parkway / Waterman Boulevard	Diverge	20	B	22	C
EB I-80, from Air Base Parkway / Waterman Boulevard	Merge	26	C	27	C
EB I-80, east of Air Base Parkway / Waterman Boulevard	Mainline	28	D	29	D
<b>Westbound I-80</b>					
WB I-80, east of Waterman Boulevard / Air Base Parkway	Mainline	24	C	24	C
WB I-80, to Waterman Boulevard Diagonal	Diverge	21	C	21	C
WB I-80, to Air Base Parkway Loop	Diverge	15	B	15	B
WB I-80, from Air Base Parkway / Waterman Boulevard	Merge	26	C	26	C
WB I-80, between Waterman Blvd. / Air Base Pkwy. and Travis Blvd.	Mainline	26	D	27	D
WB I-80, to Travis Boulevard	Diverge	25	C	26	C
WB I-80, from Travis Boulevard	Merge	20	C	20	C
WB I-80, between Travis Boulevard Loop and Oliver Road	Weave <sup>2</sup>	24	C	24	C
WB I-80, from Oliver Road / West Texas Street	Merge	25	C	25	C
WB I-80, to Abernathy Road	Diverge	26	C	27	C
WB I-80, from Abernathy Road	Merge	19	B	20	B
WB I-80, from SR 12 East	Merge	20	B	18	B
WB I-80, between SR 12 East Connector and Truck Scales	Mainline	27	D	26	D

**TABLE 6-6  
 2015 ALTERNATIVE C PHASE I PM PEAK HOUR  
 FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
WB I-80, to Truck Scales	Diverge	34	D	21	C
WB I-80, between Truck Scales and Suisun Valley Road	Weave <sup>2</sup>	40	E	25	C
WB I-80, between Suisun Valley Road and Green Valley Road	Weave <sup>2</sup>	N/A <sup>3</sup>		19	B
WB I-80, to Southbound I-680 Connector	Diverge	19	B	N/A <sup>3</sup>	
WB I-80, from NB I-680	Merge	15	B	N/A <sup>3</sup>	
WB I-80, to SR 12 West/I-680 Connector	Diverge	N/A <sup>3</sup>		14	B
WB I-80, between Green Valley Road and SR 12 West	Weave <sup>2</sup>	19	B	N/A <sup>3</sup>	
WB I-80, between SR 12 West/I-680 Connector and Green Valley Rd	Mainline	N/A <sup>3</sup>		15	B
WB I-80, between SR 12 West and Red Top Road	Mainline	17	B	N/A <sup>3</sup>	
WB I-80, from Green Valley Rd	Merge	N/A <sup>3</sup>		15	B
WB I-80, to Red Top Road	Diverge	18	B	19	B
WB I-80, from Red Top Road	Merge	17	B	22	C
WB I-80, west of Red Top Road	Mainline	23	C	20	C
<b>Northbound I-680</b>					
NB I-680, to Gold Hill Road	Diverge	<b>98</b>	<b>F</b>	37	E
NB I-680, from Gold Hill Road	Merge	<b>105</b>	<b>F</b>	39	E
NB I-680, to Red Top Road	Diverge	N/A <sup>3</sup>		35	D
NB I-680, from Red Top Road	Merge	N/A <sup>3</sup>		30	D
NB I-680, between Gold Hill Road and Central Way	Mainline	<b>115</b>	<b>F</b>	N/A <sup>3</sup>	
NB I-680, to Central Way	Diverge	<b>124</b>	<b>F</b>	N/A <sup>3</sup>	
NB I-680, to SR 12 West	Diverge	N/A		30	D
NB I-680, to Suisun Valley Road	Diverge	<b>126</b>	<b>F</b>	N/A	
NB I-680, off HOV Bypass	Diverge	N/A		28	D
<b>Southbound I-680</b>					
SB I-680, from HOV Bypass	Merge	N/A <sup>3</sup>		18	B
SB I-680, from EB I-80 / Green Valley Road	Merge	24	C	N/A <sup>3</sup>	
SB I-680, between I-80 and Gold Hill Road	Mainline	22	C	N/A <sup>3</sup>	
SB I-680, to Red Top Road	Diverge	N/A <sup>3</sup>		23	C
SB I-680, from Red Top Road	Merge	N/A <sup>3</sup>		22	C
SB I-680, to Gold Hill Road	Diverge	22	C	23	C
SB I-680, from Gold Hill Road	Merge	22	C	23	C
<b>Eastbound SR 12 West</b>					
EB SR 12 West, west of Red Top Road	Mainline	N/A <sup>3</sup>		22	C
EB SR 12 West, to Red Top Road	Diverge	N/A <sup>3</sup>		22	C
EB SR 12 West, from Red Top Road	Merge	N/A <sup>3</sup>		14	B

**TABLE 6-6  
 2015 ALTERNATIVE C PHASE I PM PEAK HOUR  
 FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
<b>Westbound SR 12 West</b>					
WB SR 12 West, from I-680	Merge	N/A <sup>3</sup>		11	B
WB SR 12 West, from Red Top Road	Merge	N/A <sup>3</sup>		12	B
WB SR 12 West, west of Red Top Road	Mainline	N/A <sup>3</sup>		12	B
<b>Eastbound SR 12 East</b>					
EB SR 12 East, between Truck Scales and Chadbourne Road	Weave <sup>2</sup>	<b>159</b>	<b>F</b>	<b>130</b>	<b>F</b>
EB SR 12 East, from Chadbourne Road	Merge	<b>144</b>	<b>F</b>	<b>145</b>	<b>F</b>
EB SR 12 East, to Webster Street	Diverge	20	C	27	C
EB SR 12 East, between Webster Street and Civic Center Boulevard	Weave <sup>2</sup>	18	B	22	C
EB SR 12 East, from Civic Center Boulevard	Merge	24	C	28	C
<b>Westbound SR 12 East</b>					
WB SR 12 East, to Main Street	Diverge	19	B	19	B
WB SR 12 East, between Main Street and Jackson Street	Weave <sup>2</sup>	15	B	15	B
WB SR 12 East, from Jackson Street	Merge	<b>67</b>	<b>F</b>	<b>83</b>	<b>F</b>
WB SR 12 East, to Abernathy Road	Diverge	19	B	19	B
WB SR 12 East, from Abernathy Road	Merge	18	B	18	B

Notes: [No Shading] = Under Capacity, [Light Gray] = Near Capacity, [Medium Gray] = At/Over Capacity, [Dark Gray] = 25% Over Capacity, [Black] = More than 50% Over Capacity

**BOLD** = segment operates unacceptably. \* = Denotes segment operates at capacity.

1. Density is expressed in vehicles per hour per lane. Speed is expressed in miles per hour and is the speed over all lanes (excluding HOV).
2. Level of service thresholds for weaving sections are different than mainline sections. Refer to Table 1 for thresholds.
3. N/A – This segment is not applicable for this scenario. It is a ramp or freeway segment that isn't present in one scenario, but is in the other.

Source: Fehr & Peers, May 2009.

# Attachment D

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## **I-80 ADT, Truck Volumes, and Truck Percentages**

I-80 ADT Near Cordelia Truck Scales (Worst-Case Traffic Volumes in Project Area)

Condition	WB		EB		Total			Calculated ADT <sup>1</sup>	Calculated Truck ADT <sup>2</sup>
	am Peak Hour	pm Peak Hour	am Peak Hour	pm Peak Hour	am total Peak Hour	pm total Peak Hour	total Peak Hour		
Existing	8,470	6,780	5,650	8,080	14,120	14,860	28,980	144,900	5,057
2015 No Project	10,207	8,164	6,352	8,198	16,559	16,362	32,921	164,605	5,745
2015 Alt C, Phase 1	10,261	8,471	6,324	9,597	16,585	18,068	34,653	173,265	6,047
2035 No Project	11,139	5,310	8,461	6,767	19,600	12,077	31,677	158,385	5,528
2035 Alt C, Phase 1	11,645	8,607	8,879	5,535	20,524	14,142	34,666	173,330	6,049

Notes

<sup>1</sup> Based on guidance provided by Rabinovitz pers. comm.

<sup>2</sup> Assumes 3.49% diesel trucks based on Caltrans 2007 Annual Average Daily Truck Traffic on the California State Highway System data (Attachment D) and methodology from Section B.3.1.1 of the Caltrans CO Protocol

Sources:

- Existing Figure A3
- 2015 No Project Figure A28 Draft TRAFFIC OPERATIONS REPORT FOR THE I-80/ I-680/SR 12 INTERCHANGE PROJECT REPORT. June 2009
- 2015 Alt C, Phase 1 Figure A42 Draft TRAFFIC OPERATIONS REPORT FOR THE I-80/ I-680/SR 12 INTERCHANGE PROJECT REPORT. June 2009
- 2035 No Project Figure A7 Draft TRAFFIC OPERATIONS REPORT FOR THE I-80/ I-680/SR 12 INTERCHANGE PROJECT REPORT. June 2009
- 2035 Alt C, Phase 1 Figure A56 Draft TRAFFIC OPERATIONS REPORT FOR THE I-80/ I-680/SR 12 INTERCHANGE PROJECT REPORT. June 2009

Caltrans 2008. 2007 Annual Average Daily Truck Traffic on the California State Highway System. State of California, Business, Transportation and Housing Agency. Sacramento, CA, Division of Traffic Operations Office of System Planning Management Traffic Data Branch.

# Attachment E

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## Caltrans Truck Percentage Data

2007

Annual Average Daily Truck Traffic  
on the  
California State Highway System

Compiled by  
Traffic Data Branch  
Division of Traffic Operations

State of California  
Business, Transportation and Housing Agency  
Department of Transportation

Prepared in cooperation with the  
U.S. Department of Transportation  
Federal Highway Administration

SEPTEMBER 2008

## PREFACE

The annual average daily truck traffic is shown for selected locations on the State Highway System. Truck traffic is classified by number of axles. The two-axle class includes 11/2-ton trucks with dual rear tires and excludes pickups and vans with only four tires. Total vehicle AADT for the same year is taken from the Traffic Volumes on California State Highways booklet also published by the California Department of Transportation.

Annual average daily truck traffic is the total truck traffic volume divided by 365 days. Truck counting is done throughout the state in a program of continuous truck count sampling. The sampling includes a partial day, 24-hour, 7-day and continuous vehicle classification counts. The partial day and 24-hour counts are usually made on high volume, urban highways. The 7-day counts are made on low volume, rural highways. The counts are usually taken only once in the year. About one-sixth of the locations are counted annually. The resulting counts are adjusted to an estimate of annual average daily truck traffic by compensating for seasonal influence, weekly variation, and other variables that may be present. Annual average daily truck traffic is necessary for presenting a statewide picture of truck flow, evaluating truck trends, planning and designing highways and for other purposes.

The column entitled "Year Ver/Est" indicates the year the truck percents were either verified (V) or estimated (E). It represents the year the truck percentages were verified (counted continuously or quarterly) or estimated. Selected points on a route will be counted and the ones in between will be estimated. At some locations, truck volumes are static and no new counts are made until there is a change in traffic on the route. All truck AADT's listed are for 2007.

California State Highways are listed in legislative route number order. The legislative route number is the same as the signed route number in most cases.

Each count location is identified by the post mile value corresponding to that point on the highway. The post mile values increase from the beginning of a route within a county to the next county line. The post mile values start over again at each county line. Post mile values increase usually from south to north or west to east depending on the general direction the route follows within the state.

The post mile at a given location will remain the same year after year except in a few cases when the route was relocated/redesignated. When a section of road is relocated, new post miles (usually noted by an alphabetical prefix such as "R" or "M") are established for it. If relocation results in a change in length, "post mile equations" are introduced so that post miles on the remainder of the route within the county will remain unchanged. Post mile equations are not shown on this listing.

A leg is given for each count location and is denoted by an A, B or O. For traffic volumes purposes, a highway intersection or interchange has two legs. According to ascending post miles (route direction) and a post mile reference at the center of the intersection or interchange, B = back leg, A = ahead leg, and O = traffic volume is equal for the back and ahead legs.

**Truck AADT's are shown as two-way traffic. Equivalent axle loading (EAL) are calculated to represent two-way travel.**

**Data compiled by:**

**Division of Traffic Operations, Office of System Planning Management  
Traffic Data Branch  
(916) 654-3072**

**Price: \$15.00**

RTE	DIST	CNTY	POST MILE	L E G DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK AADT				% TRUCK AADT				EAL 2-WAY (1000)	YEAR VER/ EST
								By	By	By	By	By	By	By	By		
								2	3	4	5+	2	3	4	5+		
012	04	SON	9.23	A SEBASTOPOL, JCT. RTE. 116	27000	1094	4.05	911	112	25	46	83.25	10.24	2.28	4.24	62	99V
012	04	SON	9.54	B SEBASTOPOL EAST CITY LIMITS	26000	1089	4.19	789	136	21	143	72.45	12.51	1.94	13.09	93	99V
012	04	SON	R14.45	A SANTA ROSA, STONY POINT ROAD	64000	1926	3.01	976	343	133	474	50.69	17.79	6.92	24.6	249	02V
012	04	SON	R16.039	B SANTA ROSA, JCT. RTE. 101	77000	2618	3.4	1471	539	141	466	56.2	20.6	5.4	17.8	283	96V
012	04	SON	R16.039	A SANTA ROSA, JCT. RTE. 101	78000	1880	2.41	1076	280	83	441	57.25	14.89	4.42	23.45	228	05V
012	04	SON	T17.53	B SANTA ROSA, FARMERS LANE	62000	1488	2.4	966	281	31	210	64.9	18.9	2.1	14.1	137	96V
012	04	SON	20.1	A SANTA ROSA, CALISTOGA ROAD	30500	1403	4.6	706	236	53	408	50.3	16.8	3.8	29.1	195	96V
012	04	SON	27.03	B KENWOOD, WARM SPRINGS ROAD	17000	697	4.1	456	100	21	121	65.4	14.3	3	17.3	70	96V
012	04	SON	30.65	A ARNOLD DRIVE	16000	650	4.06	366	120	48	117	56.28	18.44	7.31	17.97	71	02V
012	04	SON	37.505	B SONOMA, FIRST STREET WEST	16300	579	3.55	376	70	36	97	64.92	12.03	6.27	16.78	58	02V
012	04	SON	41.36	B JCT. RTE. 121	6900	234	3.39	111	21	18	85	47.58	8.81	7.49	36.12	38	02V
012	04	NAP	0	A JCT. RTE. 29, NAPA, SOUTH	25000	1988	7.95	616	181	120	1070	31.01	9.11	6.06	53.82	425	02V
012	04	NAP	.24	A KELLY ROAD	32500	2503	7.7	914	218	73	1298	36.51	8.72	2.92	51.86	511	02V
012	04	SOL	R2.794	B JCT. RTE. 80 WEST	32500	2340	7.2	719	214	118	1290	30.71	9.13	5.05	55.11	507	02V
012	04	SOL	L1.801	A JCT. RTE. 80 EAST	35500	1807	5.09	460	150	36	1160	25.47	8.32	2	64.22	435	99V
012	04	SOL	7.16	B SCANDIA ROAD	15500	1497	9.66	411	200	78	808	27.48	13.34	5.23	53.96	323	02V
012	04	SOL	8.89	B SCALLY ROAD	14500	2546	17.56	531	424	132	1459	20.84	16.66	5.19	57.32	580	02V
012	04	SOL	19.169	B JCT. RTE. 113 NORTH	14000	1544	11.03	149	89	76	1229	9.66	5.78	4.93	79.63	449	05V
012	04	SOL	19.169	A JCT. RTE. 113 NORTH	18900	1803	9.54	290	55	32	1426	16.07	3.05	1.79	79.09	512	05V

RTE	DIST	CNTY	POST MILE	L E G DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK AADT TOTAL			% TRUCK AADT				EAL 2-WAY (1000)	YEAR VER/ EST	
								By	Axle	-----	By	Axle	-----	-----			
								2	3	4	5+	2	3	4	5+		
012	04	SOL	26.276	B JCT. RTE. 84 NORTH	23000	2056	8.94	402	156	51	1446	19.57	7.6	2.5	70.33	535	05V
012	04	SOL	26.276	A JCT. RTE. 84 NORTH	22200	2240	10.09	431	102	46	1661	19.23	4.57	2.06	74.14	604	05V
012	03	SAC	0	A SOLANO/SACRAMENTO COUNTY LINE	22200	3019	13.6	435	652	103	1830	14.4	21.6	3.4	60.6	722	95E
012	03	SAC	.571	A JCT. RTE. 160	17100	2480	14.5	357	508	84	1530	14.4	20.5	3.4	61.7	599	95V
012	03	SAC	6.2	O SACRAMENTO/SAN JOAQUIN COUNTY LINE	17500	2468	14.1	269	499	94	1607	10.9	20.2	3.8	65.1	624	96V
012	10	SJ	0	O SACRAMENTO/SAN JOAQUIN COUNTY LINE	17500	2468	14.1	269	499	94	1607	10.9	20.2	3.8	65.1	624	96V
012	10	SJ	10.167	B JCT. RTE. 5	18200	2530	13.9	271	392	78	1789	10.7	15.5	3.1	70.7	674	96V
012	10	SJ	10.167	A JCT. RTE. 5	17200	2632	15.3	437	421	82	1692	16.6	16	3.1	64.3	650	96E
012	10	SJ	15.155	B LOWER SACRAMENTO ROAD	15400	1371	8.9	260	247	58	806	19	18	4.2	58.8	318	96V
012	10	SJ	15.155	A LOWER SACRAMENTO ROAD	28500	2537	8.9	515	639	142	1241	20.3	25.2	5.6	48.9	526	96E
012	10	SJ	16.44	B SOUTH HAM LANE	42500	3825	9	826	1239	230	1530	21.6	32.4	6	40	705	96V
012	10	SJ	16.931	A LODI, SOUTH HUTCHINS STREET	32000	3008	9.4	800	803	177	1227	26.6	26.7	5.9	40.8	551	96E
012	10	SJ	17.95	B LODI, CHEROKEE LANE	27500	2695	9.8	854	563	129	1148	31.7	20.9	4.8	42.6	497	96E
012	10	SJ	18.07	B LODI, JCT. RTE. 99 SOUTH	23000	2346	10.2	861	357	87	1042	36.7	15.2	3.7	44.4	435	95E
012	10	SJ	18.08	A LODI, JCT. RTE. 99 NORTH	12400	744	6	187	266	37	254	25.1	35.8	5	34.1	124	96V
012	10	SJ	20.9	B VICTOR BRUELLA ROAD	9700	553	5.7	116	217	32	188	21	39.2	5.8	34	94	96V
012	10	SJ	20.9	A VICTOR BRUELLA ROAD	8400	428	5.1	116	138	24	151	27	32.3	5.5	35.2	72	96V
012	10	SJ	L23.286	B LOCKEFORD, JCT. RTE. 88 WEST	7100	483	6.8	100	80	15	287	20.7	16.6	3.2	59.5	112	96V
012	10	SJ	23.168	A LOCKEFORD, JCT. RTE. 88 EAST	7700	554	7.2	138	146	22	249	24.9	26.3	3.9	44.9	107	96V
012	10	CAL	9.927	B VALLEY SPRINGS, JCT. RTE. 26 SOUTH	9000	568	6.31	156	182	22	208	27.5	32.1	3.8	36.6	97	96V

RTE	DIST	CNTY	POST MILE	L E G	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK AADT			% TRUCK AADT				EAL 2-WAY (1000)	YEAR VER/ EST	
									By	Axle		2	3	4	5+			
080	04	SOL	1.144	B	VALLEJO, JCT. RTE. 29 NORTHWEST	124000	5940	4.79	1783	470	290	3398	30.02	7.91	4.88	57.2	1321	03V
080	04	SOL	1.144	A	VALLEJO, JCT. RTE. 29 NORTHWEST	117000	5850	5	1714	474	140	3522	29.3	8.1	2.4	60.2	1339	01E
080	04	SOL	2.22	B	VALLEJO, JCT. RTE. 780 SOUTHEAST	124000	5778	4.66	1513	350	242	3674	26.18	6.05	4.19	63.59	1388	03V
080	04	SOL	5.634	B	VALLEJO, JCT. RTE. 37 WEST	135000	6980	5.17	1839	496	302	4343	26.35	7.11	4.32	62.22	1653	03V
080	04	SOL	5.634	A	VALLEJO, JCT. RTE. 37 WEST	119000	6033	5.07	1906	373	216	3538	31.59	6.19	3.58	58.64	1353	02V
080	04	SOL	R11.976	B	JCT. RTE. 12 WEST	120000	6720	5.6	2218	551	222	3730	33	8.2	3.3	55.5	1448	01E
080	04	SOL	R11.976	A	JCT. RTE. 12 WEST	156000	8112	5.2	2344	625	251	4892	28.9	7.7	3.1	60.3	1864	01E
080	04	SOL	12.839	B	JCT. RTE. 680 SOUTH	156000	10234	6.56	2576	677	788	6193	25.17	6.62	7.7	60.51	2405	00V
080	04	SOL	12.839	A	JCT. RTE. 680 SOUTH	197000	11308	5.74	2925	704	1083	6596	25.87	6.23	9.58	58.33	2602	00V
080	04	SOL	15.815	B	FAIRFIELD, EAST JCT. RTE. 12	213000	9819	4.61	2905	633	468	5813	29.59	6.45	4.77	59.2	2234	03V
080	04	SOL	15.815	A	FAIRFIELD, EAST JCT. RTE. 12	185000	10730	5.8	3240	719	354	6417	30.2	6.7	3.3	59.8	2445	01E
080	04	SOL	20.925	B	FAIRFIELD, NORTH TEXAS STREET	170000	6239	3.67	1815	397	230	3798	29.09	6.36	3.68	60.88	1444	03V
080	04	SOL	20.925	A	FAIRFIELD, NORTH TEXAS STREET	140000	7350	5.25	2154	573	265	4359	29.3	7.8	3.6	59.3	1671	01E
080	04	SOL	R28.36	B	JCT. RTE. 505 NORTH	125000	8000	6.4	2112	808	272	4808	26.4	10.1	3.4	60.1	1847	01E
080	04	SOL	R28.36	A	JCT. RTE. 505 NORTH	101000	6212	6.15	1948	490	163	3612	31.36	7.88	2.62	58.14	1383	00V
080	04	SOL	38.21	B	JCT. RTE. 113 SOUTH	106000	7123	6.72	2072	494	515	4042	29.09	6.93	7.23	56.75	1588	00V
080	04	SOL	38.21	A	JCT. RTE. 113 SOUTH	116000	7795	6.72	2455	834	281	4225	31.5	10.7	3.6	54.2	1662	01E
080	04	SOL	42.67	B	JCT. RTE. 113 NORTH	118000	7906	6.7	2293	767	324	4522	29	9.7	4.1	57.2	1759	01E
080	03	YOL	.237	B	RICHARDS BOULEVARD	129000	11313	8.77	3226	856	389	6841	28.52	7.57	3.44	60.47	2609	00E
080	03	YOL	R9.905	B	WEST SACRAMENTO, JCT. RTE. 50	149000	10981	7.37	3132	831	378	6640	28.52	7.57	3.44	60.47	2532	00E

RTE	DIST	CNTY	POST MILE	L E G DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK AADT			% TRUCK AADT				EAL 2-WAY (1000)	YEAR VER/ EST	
								By	Axle		By	Axle					
								2	3	4	5+	2	3	4	5+		
680	04	CC	R.01	A SAN RAMON, ALCOSTA BOULEVARD	164000	8692	5.3	4097	844	474	3277	47.13	9.71	5.45	37.7	1421	00V
680	04	CC	14.383	B WALNUT CREEK, JCT. RTE. 24 WEST	171000	10910	6.38	5039	942	529	4399	46.19	8.63	4.85	40.32	1858	00V
680	04	CC	14.383	A WALNUT CREEK, JCT. RTE. 24 WEST	254000	10465	4.12	5002	1226	414	3822	47.8	11.72	3.96	36.52	1667	00V
680	04	CC	15.606	B WALNUT CREEK, NORTH MAIN STREET	242000	9220	3.81	4770	989	460	3001	51.73	10.73	4.99	32.55	1361	00V
680	04	CC	15.606	A WALNUT CREEK, NORTH MAIN STREET	266000	7049	2.65	3474	641	357	2576	49.29	9.1	5.06	36.55	1122	03V
680	04	CC	R18.707	B CONCORD, JCT. RTE. 242 NORTH	245000	9482	3.87	4780	956	398	3348	50.41	10.08	4.2	35.31	1469	00V
680	04	CC	R18.707	A CONCORD, JCT. RTE. 242 NORTH	130000	6422	4.94	3359	634	246	2182	52.31	9.87	3.83	33.98	965	00V
680	04	CC	21.191	B JCT. RTE. 4	135000	3645	2.7	1890	543	129	1084	51.84	14.91	3.53	29.73	509	00V
680	04	CC	21.191	A JCT. RTE. 4	115000	7832	6.81	4062	904	237	2629	51.86	11.54	3.03	33.57	1167	00V
680	04	SOL	.679	B JCT. RTE. 780 NORTHWEST	100000	5700	5.7	1106	798	211	3585	19.4	14	3.7	62.9	1380	95E
680	04	SOL	.679	A JCT. RTE. 780 NORTHWEST	56000	2968	5.3	1097	188	192	1491	36.95	6.35	6.46	50.24	598	03V
680	04	SOL	R2.819	B LAKE HERMAN ROAD	58000	3091	5.33	1032	223	127	1710	33.38	7.22	4.1	55.31	665	00V
680	04	SOL	R2.819	A LAKE HERMAN ROAD	58000	3109	5.36	1117	267	113	1612	35.93	8.6	3.64	51.84	636	00V
680	04	SOL	13.126	B CORDELIA WYE, JCT. RTE. 80	60000	3126	5.21	1097	273	258	1498	35.1	8.72	8.25	47.93	618	00V

# Attachment F

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## **Truck Percentage Personal Communication**

## Hatcher, Shannon

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**From:** Ellen Poling [E.Poling@fehrandpeers.com]  
**Sent:** Friday, March 27, 2009 8:43 AM  
**To:** Shannon Hatcher; Shahira Ashkar  
**Cc:** Fred Choa; Michael Beattie; Danny Yost  
**Subject:** RE: I-80/680/SR 12 Traffic Data

Shannon,

I agree that we have no basis to determine that the interchange project would change the truck percentages; the project will increase the travel demand that is served through the corridor during the peak periods, and thus the truck volume served would increase proportionally with the total volume, preserving the proportion of trucks to total volume.

Mike, Fred, Danny, please let me know if you disagree. Thanks.

**Ellen Poling, PE**  
**Senior Associate**

### Fehr & Peers

100 Pringle Avenue, #600  
Walnut Creek, CA 94596  
(925) 930-7100 (925) 933-7090 FAX  
fehrandpeers.com

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**From:** Shannon Hatcher [mailto:SHatcher@jsanet.com]  
**Sent:** Thursday, March 26, 2009 5:39 PM  
**To:** Ellen Poling; Shahira Ashkar; Danny Yost  
**Subject:** RE: I-80/680/SR 12 Traffic Data

Hi Ellen,

Thanks for passing this along. Is it possible to determine the truck percentages between the no-project and with-project conditions for 2015 and 2035? Specifically, I am looking to verify that truck percents would not increase by more than 5% between no-project and with-project conditions. If your modeling can't verify this, would Caltrans traffic ops. be able to?

I'm thinking that modifications resulting from the project (comparing the no-project to the with-project conditions) would not increase the percentage of truck traffic in future years on the I-80/ I-680/SR 12 corridors, as shipping activities along these corridors are well established and are controlled by the level of economic activity in the region (as well as the western U.S) and would not be controlled by improvements at the project.

Thanks,  
shannon

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**From:** Ellen Poling [mailto:E.Poling@fehrandpeers.com]  
**Sent:** Thursday, March 26, 2009 12:13 PM  
**To:** Shannon Hatcher; Shahira Ashkar; Danny Yost  
**Subject:** FW: I-80/680/SR 12 Traffic Data

With attachment.

**Ellen Poling, PE**  
**Senior Associate**

**Fehr & Peers**

100 Pringle Avenue, #600  
Walnut Creek, CA 94596  
(925) 930-7100 (925) 933-7090 FAX  
fehrandpeers.com

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**From:** Ellen Poling  
**Sent:** Thursday, March 26, 2009 12:12 PM  
**To:** 'Shannon Hatcher'; Danny Yost  
**Cc:** Shahira Ashkar  
**Subject:** RE: I-80/680/SR 12 Traffic Data

Shannon, sorry for the delayed response. The attached shows peak hour and daily truck percent estimates. I'm not sure what they mean by off-peak hour, but you could probably just estimate it from the daily and peak hour numbers.

**Ellen Poling, PE**  
**Senior Associate**

**Fehr & Peers**

100 Pringle Avenue, #600  
Walnut Creek, CA 94596  
(925) 930-7100 (925) 933-7090 FAX  
fehrandpeers.com

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**From:** Shannon Hatcher [mailto:SHatcher@jsanet.com]  
**Sent:** Friday, March 20, 2009 11:22 AM  
**To:** Ellen Poling; Danny Yost  
**Cc:** Shahira Ashkar  
**Subject:** I-80/680/SR 12 Traffic Data

Hi Ellen and Danny,

We have received new guidance from Caltrans headquarter staff regarding our air quality analyses for I-80/680/SR 12. Based on this guidance, we are hoping you can provide us with additional traffic data to complete the air quality analyses. We were wondering if you have mainline I-80, I-680, and SR 12 peak hour, off-peak hour, and daily truck percentages for all conditions analyzed?

Please let me know if you have any questions about this request. I can talk you through this to explain this a little more, if needed.

Thanks!  
shannon

**Mr. Shannon Hatcher**

Air Quality, Climate Change, and Noise Project Manager

**ICF Jones & Stokes | Sacramento**

**p** 916/737.3000 | **f** 916/737.3000 | **c** 916/752.0942

**e** [shatcher@jsanet.com](mailto:shatcher@jsanet.com)

[jonesandstokes.com](http://jonesandstokes.com) | [icfi.com](http://icfi.com)

# Attachment G

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## 2035 AM Freeway LOS

**TABLE 7-4  
 2035 ALTERNATIVE C PHASE I AM PEAK HOUR  
 FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C Phase I	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
<b>Eastbound I-80</b>					
EB I-80, west of Red Top Road	Mainline	N/A <sup>3</sup>		23	C
EB I-80, to Red Top Road	Diverge	44	F	23	C
EB I-80, from Red Top Road	Merge	12	B	N/A <sup>3</sup>	
EB I-80, between SR 12 West and Green Valley Road / I-680 SB	Weave <sup>2</sup>	22	C	N/A <sup>3</sup>	
EB I-80, from SR 12 West Connector	Merge	N/A <sup>3</sup>		13	B
EB I-80, from NB I-680 Connector	Merge	26	C	27	C
EB I-80, between I-680 and Green Valley Road	Mainline	N/A <sup>3</sup>		24	C
EB I-80, from Green Valley Road	Merge	14	B	N/A <sup>3</sup>	
EB I-80, between Green Valley Road and Pittman Road	Weave <sup>2</sup>	N/A <sup>3</sup>		26	C
EB I-80, between Pittman Road and Truck Scales	Weave <sup>2</sup>	26	C	27	C
EB I-80, to EB SR 12 East Connector	Diverge	13	B	18	B
EB I-80, between SR 12 East and Truck Scales	Mainline	N/A <sup>3</sup>		21	C
EB I-80, between Truck Scales and Abernathy Road	Weave <sup>2</sup>	25	C	24	C
EB I-80, between Abernathy Road and West Texas Street	Weave <sup>2</sup>	21	C	23	C
EB I-80, between Beck Avenue and Travis Boulevard	Weave <sup>2</sup>	21	C	22	C
EB I-80, from Travis Boulevard	Merge	13	B	15	B
EB I-80, between Travis Blvd. and Air Base Pkwy. / Waterman Blvd.	Mainline	20	C	21	C
EB I-80, to Air Base Parkway / Waterman Boulevard	Diverge	16	B	18	B
EB I-80, from Air Base Parkway / Waterman Boulevard	Merge	17	B	19	B
EB I-80, east of Air Base Parkway / Waterman Boulevard	Mainline	23	C	23	C
<b>Westbound I-80</b>					
WB I-80, east of Waterman Boulevard / Air Base Parkway	Mainline	35	D	35	D
WB I-80, to Waterman Boulevard Diagonal	Diverge	30	D	30	D
WB I-80, to Air Base Parkway Loop	Diverge	26	C	26	C
WB I-80, from Air Base Parkway / Waterman Boulevard	Merge	36	E	33	D
WB I-80, between Waterman Blvd. / Air Base Pkwy. and Travis Blvd.	Mainline	38	E	36	E
WB I-80, to Travis Boulevard	Diverge	34	D	31	D
WB I-80, from Travis Boulevard	Merge	38	E	34	D
WB I-80, between Travis Boulevard Loop and Oliver Road	Weave <sup>2</sup>	43	E	39	E
WB I-80, from Oliver Road / West Texas Street	Merge	31	D	30	D
WB I-80, to Abernathy Road	Diverge	33	D	32	D
WB I-80, from Abernathy Road	Merge	35	D	30	D
WB I-80, from SR 12 East	Merge	46	F	32	D
WB I-80, between SR 12 East Connector and Truck Scales	Mainline	58	F	38	E

**TABLE 7-4  
 2035 ALTERNATIVE C PHASE I AM PEAK HOUR  
 FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C Phase I	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
WB I-80, to Truck Scales	Diverge	31	D	28	D
WB I-80, between Truck Scales and Suisun Valley Road	Weave <sup>2</sup>	<b>63</b>	<b>F</b>	37	E
WB I-80, between Suisun Valley Road and Green Valley Road	Weave <sup>2</sup>	N/A <sup>3</sup>		29	D
WB I-80, to Southbound I-680 Connector	Diverge	27	C	N/A <sup>3</sup>	
WB I-80, from NB I-680	Merge	<b>44</b>	<b>E*</b>	N/A <sup>3</sup>	
WB I-80, to SR 12 West/I-680 Connector	Diverge	N/A <sup>3</sup>		19	B
WB I-80, between Green Valley Road and SR 12 West	Weave <sup>2</sup>	33	D	N/A <sup>3</sup>	
WB I-80, between SR 12 West/I-680 Connector and Green Valley Rd	Mainline	N/A <sup>3</sup>		21	C
WB I-80, from Green Valley Rd	Merge	N/A <sup>3</sup>		18	B
WB I-80, to Red Top Road	Diverge	25	C	23	C
WB I-80, from Red Top Road	Merge	20	C	26	C
WB I-80, west of Red Top Road	Mainline	N/A		26	C
<b>Northbound I-680</b>					
NB I-680, to Gold Hill Road	Diverge	36	E	40	E
NB I-680, from Gold Hill Road	Merge	36	E	43	E
NB I-680, to Red Top Road	Diverge	N/A <sup>3</sup>		36	E
NB I-680, from Red Top Road	Merge	N/A <sup>3</sup>		31	D
NB I-680, between Gold Hill Road and Central Way	Mainline	36	E	N/A <sup>3</sup>	
NB I-680, to Central Way	Diverge	36	E	N/A <sup>3</sup>	
NB I-680, to SR 12 West	Diverge	N/A <sup>3</sup>		29	D
NB I-680, to Suisun Valley Road	Diverge	27	C	N/A <sup>3</sup>	
NB I-680, off HOV Bypass	Diverge	N/A <sup>3</sup>		26	C
<b>Southbound I-680</b>					
SB I-680, from HOV Bypass	Merge	N/A <sup>3</sup>		22	C
SB I-680, from EB I-80 / Green Valley Road	Merge	32	D	N/A <sup>3</sup>	
SB I-680, between I-80 and Gold Hill Road	Mainline	31	D	N/A <sup>3</sup>	
SB I-680, to Red Top Road	Diverge	N/A <sup>3</sup>		29	D
SB I-680, from Red Top Road	Merge	N/A <sup>3</sup>		34	D
SB I-680, to Gold Hill Road	Diverge	31	D	33	D
SB I-680, from Gold Hill Road	Merge	38	E	36	E
<b>Eastbound SR 12 West</b>					
EB SR 12 West, west of Red Top Road	Mainline	N/A <sup>3</sup>		10	A
EB SR 12 West, to Red Top Road	Diverge	N/A <sup>3</sup>		11	B
EB SR 12 West, from Red Top Road	Merge	N/A <sup>3</sup>		8	A
<b>Westbound SR 12 West</b>					

**TABLE 7-4  
 2035 ALTERNATIVE C PHASE I AM PEAK HOUR  
 FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C Phase I	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
WB SR 12 West, from I-680	Merge	N/A <sup>3</sup>		21	C
WB SR 12 West, from Red Top Road	Merge	N/A <sup>3</sup>		27	C
WB SR 12 West, west of Red Top Road	Mainline	N/A <sup>3</sup>		29	D
<b>Eastbound SR 12 East</b>					
EB SR 12 East, between Truck Scales and Chadbourne Road	Weave <sup>2</sup>	13	B	14	B
EB SR 12 East, from Chadbourne Road	Merge	15	B	16	B
EB SR 12 East, to Webster Street	Diverge	20	B	20	B
EB SR 12 East, between Webster Street and Civic Center Boulevard	Weave <sup>2</sup>	15	B	15	B
EB SR 12 East, from Civic Center Boulevard	Merge	18	B	17	B
<b>Westbound SR 12 East</b>					
WB SR 12 East, to Main Street	Diverge	<b>111</b>	<b>F</b>	<b>115</b>	<b>F</b>
WB SR 12 East, between Main Street and Jackson Street	Weave <sup>2</sup>	<b>101</b>	<b>F</b>	<b>103</b>	<b>F</b>
WB SR 12 East, from Jackson Street	Merge	<b>115</b>	<b>F</b>	<b>120</b>	<b>F</b>
WB SR 12 East, to Abernathy Road	Diverge	26	C	26	C
WB SR 12 East, from Abernathy Road	Merge	20	C	23	C

Notes: [No Shading] = Under Capacity, [Light Gray] = Near Capacity, [Medium Gray] = At/Over Capacity, [Dark Gray] = 25% Over Capacity, [Black] = More than 50% Over Capacity

**BOLD** = segment operates unacceptably. \* = Denotes segment operates at capacity.

1. Density is expressed in vehicles per hour per lane. Speed is expressed in miles per hour and is the speed over all lanes (excluding HOV).
2. Level of service thresholds for weaving sections are different than mainline sections. Refer to Table 1 for thresholds.
3. N/A – This segment is not applicable for this scenario. It is a ramp or freeway segment that isn't present in one scenario, but is in the other.

Source: Fehr & Peers, May 2009.

# Attachment G

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## 2035 PM Freeway LOS

**TABLE 7-6  
2035 ALTERNATIVE C PHASE I PM PEAK HOUR  
FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C Phase I	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
<b>Eastbound I-80</b>					
EB I-80, west of Red Top Road	Mainline	N/A <sup>3</sup>		85	F
EB I-80, to Red Top Road	Diverge	92	F	98	F
EB I-80, from Red Top Road	Merge	90	F	N/A <sup>3</sup>	
EB I-80, between SR 12 West and Green Valley Road / I-680 SB	Weave <sup>2</sup>	67	F	N/A <sup>3</sup>	
EB I-80, from SR 12 West Connector	Merge	N/A <sup>3</sup>		144	F
EB I-80, from NB I-680 Connector	Merge	96	F	172	F
EB I-80, between I-680 and Green Valley Road	Mainline	N/A <sup>3</sup>		124	F
EB I-80, from Green Valley Road	Merge	64	F	N/A <sup>3</sup>	
EB I-80, between Green Valley Road and Pittman Road	Weave <sup>2</sup>	N/A <sup>3</sup>		135	F
EB I-80, between Pittman Road and Truck Scales	Weave <sup>2</sup>	103	F	130	F
EB I-80, to EB SR 12 East Connector	Diverge	124	F	140	F
EB I-80, between SR 12 East and Truck Scales	Mainline	N/A <sup>3</sup>		13	B
EB I-80, between Truck Scales and Abernathy Road	Weave <sup>2</sup>	24	C	16	B
EB I-80, between Abernathy Road and West Texas Street	Weave <sup>2</sup>	19	B	18	B
EB I-80, between Beck Avenue and Travis Boulevard	Weave <sup>2</sup>	20	B	18	B
EB I-80, from Travis Boulevard	Merge	19	B	21	C
EB I-80, between Travis Blvd. and Air Base Prkwy. / Waterman Blvd.	Mainline	23	C	23	C
EB I-80, to Air Base Parkway / Waterman Boulevard	Diverge	18	B	19	B
EB I-80, from Air Base Parkway / Waterman Boulevard	Merge	23	C	26	C
EB I-80, east of Air Base Parkway / Waterman Boulevard	Mainline	28	D	25	C
<b>Westbound I-80</b>					
WB I-80, east of Waterman Boulevard / Air Base Parkway	Mainline	57	F	32	D
WB I-80, to Waterman Boulevard Diagonal	Diverge	66	F	29	D
WB I-80, to Air Base Parkway Loop	Diverge	67	F	20	C
WB I-80, from Air Base Parkway / Waterman Boulevard	Merge	88	F	28	D
WB I-80, between Waterman Blvd. / Air Base Pkwy. and Travis Blvd.	Mainline	78	F	30	D
WB I-80, to Travis Boulevard	Diverge	86	F	26	C
WB I-80, from Travis Boulevard	Merge	93	F	29	D
WB I-80, between Travis Boulevard Loop and Oliver Road	Weave <sup>2</sup>	89	F	33	D
WB I-80, from Oliver Road / West Texas Street	Merge	107	F	32	D
WB I-80, to Abernathy Road	Diverge	103	F	33	D
WB I-80, from Abernathy Road	Merge	122	F	38	F
WB I-80, from SR 12 East	Merge	138	F	49	F
WB I-80, between SR 12 East Connector and Truck Scales	Mainline	120	F	57	F

**TABLE 7-6  
 2035 ALTERNATIVE C PHASE I PM PEAK HOUR  
 FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C Phase I	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
WB I-80, to Truck Scales	Diverge	144	F	64	F
WB I-80, between Truck Scales and Suisun Valley Road	Weave <sup>2</sup>	58	E*	70	E*
WB I-80, between Suisun Valley Road and Green Valley Road	Weave <sup>2</sup>	N/A <sup>3</sup>		20	B
WB I-80, to Southbound I-680 Connector	Diverge	12	B	N/A <sup>3</sup>	
WB I-80, from NB I-680	Merge	9	A	N/A <sup>3</sup>	
WB I-80, to SR 12 West/I-680 Connector	Diverge	N/A <sup>3</sup>		15	B
WB I-80, between Green Valley Road and SR 12 West	Weave <sup>2</sup>	13	B	N/A <sup>3</sup>	
WB I-80, between SR 12 West/I-680 Connector and Green Valley Rd	Mainline	N/A <sup>3</sup>		15	B
WB I-80, from Green Valley Rd	Merge	N/A <sup>3</sup>		14	B
WB I-80, to Red Top Road	Diverge	46	F	18	B
WB I-80, from Red Top Road	Merge	8	A	21	C
WB I-80, west of Red Top Road	Mainline	N/A <sup>3</sup>		19	C
<b>Northbound I-680</b>					
NB I-680, to Gold Hill Road	Diverge	143	F	138	F
NB I-680, from Gold Hill Road	Merge	148	F	141	F
NB I-680, to Red Top Road	Diverge	N/A <sup>3</sup>		142	F
NB I-680, from Red Top Road	Merge	N/A <sup>3</sup>		169	F
NB I-680, between Gold Hill Road and Central Way	Mainline	148	F	N/A <sup>3</sup>	
NB I-680, to Central Way	Diverge	131	F	N/A <sup>3</sup>	
NB I-680, to SR 12 West	Diverge	N/A <sup>3</sup>		167	F
NB I-680, to Suisun Valley Road	Diverge	104	F	N/A <sup>3</sup>	
NB I-680, off HOV Bypass	Diverge	N/A <sup>3</sup>		157	F
<b>Southbound I-680</b>					
SB I-680, from HOV Bypass	Merge	N/A <sup>3</sup>		19	B
SB I-680, from EB I-80 / Green Valley Road	Merge	15	B	N/A <sup>3</sup>	
SB I-680, between I-80 and Gold Hill Road	Mainline	14	B	N/A <sup>3</sup>	
SB I-680, to Red Top Road	Diverge	N/A <sup>3</sup>		24	C
SB I-680, from Red Top Road	Merge	N/A <sup>3</sup>		24	C
SB I-680, to Gold Hill Road	Diverge	14	B	24	C
SB I-680, from Gold Hill Road	Merge	14	B	23	C
<b>Eastbound SR 12 West</b>					
EB SR 12 West, west of Red Top Road	Mainline	N/A <sup>3</sup>		163	F
EB SR 12 West, to Red Top Road	Diverge	N/A <sup>3</sup>		157	F
EB SR 12 West, from Red Top Road	Merge	N/A <sup>3</sup>		171	F

**TABLE 7-6  
 2035 ALTERNATIVE C PHASE I PM PEAK HOUR  
 FREEWAY LEVEL OF SERVICE**

Segment	Type	No Project		Alternative C Phase I	
		Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
<b>Westbound SR 12 West</b>					
WB SR 12 West, from I-680	Merge	N/A <sup>3</sup>		11	B
WB SR 12 West, from Red Top Road	Merge	N/A <sup>3</sup>		12	B
WB SR 12 West, west of Red Top Road	Mainline	N/A <sup>3</sup>		12	B
<b>Eastbound SR 12 East</b>					
EB SR 12 East, between Truck Scales and Chadbourne Road	Weave <sup>2</sup>	<b>157</b>	<b>F</b>	<b>163</b>	<b>F</b>
EB SR 12 East, from Chadbourne Road	Merge	<b>147</b>	<b>F</b>	<b>154</b>	<b>F</b>
EB SR 12 East, to Webster Street	Diverge	17	B	20	B
EB SR 12 East, between Webster Street and Civic Center Boulevard	Weave <sup>2</sup>	17	B	17	B
EB SR 12 East, from Civic Center Boulevard	Merge	26	C	27	C
<b>Westbound SR 12 East</b>					
WB SR 12 East, to Main Street	Diverge	<b>158</b>	<b>F</b>	<b>119</b>	<b>F</b>
WB SR 12 East, between Main Street and Jackson Street	Weave <sup>2</sup>	<b>134</b>	<b>F</b>	<b>106</b>	<b>F</b>
WB SR 12 East, from Jackson Street	Merge	<b>161</b>	<b>F</b>	<b>131</b>	<b>F</b>
WB SR 12 East, to Abernathy Road	Diverge	<b>164</b>	<b>F</b>	24	C
WB SR 12 East, from Abernathy Road	Merge	<b>191</b>	<b>F</b>	<b>36</b>	<b>F</b>
Notes: [No Shading] = Under Capacity, <span style="background-color: #e0e0e0; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> = Near Capacity, <span style="background-color: #c0c0c0; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> = At/Over Capacity, <span style="background-color: #a0a0a0; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> = 25% Over Capacity, <span style="background-color: #808080; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> = More than 50% Over Capacity					
<b>BOLD</b> = segment operates unacceptably. * = Denotes segment operates at capacity.					
1. Density is expressed in vehicles per hour per lane. Speed is expressed in miles per hour and is the speed over all lanes (excluding HOV).					
2. Level of service thresholds for weaving sections are different than mainline sections. Refer to Table 1 for thresholds.					
3. N/A – This segment is not applicable for this scenario. It is a ramp or freeway segment that isn't present in one scenario, but is in the other.					
Source: Fehr & Peers, May 2009.					

# Attachment H

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## 2015 Intersection LOS, Delay, and Volumes

**2015 Intersection Delay, LOS, and Volumes**

**RAMP TERMINALS**

Intersection #	Intersection Name	2015 No Build						2015 Build Alternative C1						Change vs No Build		
		AM			PM			AM			PM					
		Delay	LOS	ADT	Delay	LOS	ADT	AADT	Delay	LOS	ADT	Delay	LOS		ADT	AADT
1	I-680 NB Ramps & Gold Hill Rd	10	B	1075	20	C	1320	11,975	8	A	590	17	B	875	7,325	-38.8%
3	I-680 SB Ramps & Gold Hill Rd	6	A	1665	6	A	1315	14,900	4	A	1275	3	A	1275	12,725	-14.6%
7	I-80 EB Ramps & Red Top Rd	20	B	1960	12	B	1745	18,525	16	B	1630	16	B	1835	17,325	-6.5%
8	I-80 WB Ramps & Red Top Rd	19	B	1630	14	B	1225	14,275	29	C	1525	39	D	1520	15,225	6.7%
9	Jameson Canyon Rd (SR12 West) & Red Top Rd	28	C	3910	49	D	3785	38,475	10	B	760	9	A	925	8,425	-78.1%
15	I-680 NB Off-Ramp & Central Way	2	A	670	1	A	980	8,250	NA	NA	0	NA	NA	0	0	0.0%
16	I-680 SB Onramp (I-80 Off-Ramp) & Lopes Rd	16	B	1710	12	B	1845	17,775	15	B	2245	17	B	1825	20,350	14.5%
17	I-80 (SR 12) WB On-Ramp & Green Valley Rd	4	A	1945	2	A	2080	20,125	19	B	2610	10	B	2340	24,750	23.0%
21	I-80 EB Ramps & Pittman Rd	16	B	1780	>80	F	1970	18,750	21	C	1705	30	C	2070	18,875	0.7%
22	Suisin Valley Rd & Neitzel Rd	5	A	1245	21	C	1420	13,325	2	A	1220	8	A	1425	13,225	-0.8%
24	SR 12 East EB Ramps & Chabourne Rd	4	A	1100	39	D	2440	17,700	4	A	1115	19	B	2430	17,725	0.1%
25	SR 12 East WB Ramps & Chabourne Rd	16	B	1610	35	D	2600	21,050	9	A	1385	15	B	2605	19,950	-5.2%
27	I-80 EB Ramps & Abernathy Rd	7	A	1675	61	E	2730	22,025	7	A	1355	17	B	2690	20,225	-8.2%
28	I-80 WB Ramps & Abernathy Rd	18	B	2125	>80	F	2425	22,750	19	B	1815	20	B	2385	21,000	-7.7%
29	I-80 EB Ramps & Magellan Rd	NA	NA	0	NA	NA	0	0	NA	NA	0	NA	NA	0	0	0.0%
30	I-80 EB Off-Ramp & West Texas St	5	A	2130	10	B	2995	25,625	5	A	2110	14	B	2990	25,500	-0.5%
31	I-80 EB On-Ramp - Beck Ave & West Texas St	18	B	2805	>80	F	4365	35,850	17	B	2765	>80	F	4365	35,650	-0.6%
33	I-80 WB On-Ramp - Oliver Rd & Rockville Rd	26	C	2420	31	C	2750	25,850	26	C	2435	31	C	2775	26,050	0.8%
34	I-80 WB Off-Ramp & Oliver Rd	15	B	1655	12	B	1775	17,150	16	B	1710	13	B	1795	17,525	2.2%
38	SR 12 East & Beck Ave	80	F	7035	>80	F	6445	67,400	80	F	5325	80	F	6455	58,875	-12.6%
39	SR 12 East & Pennsylvania Ave	49	D	4780	>80	F	6440	56,100	50	D	4765	80	F	6445	56,050	-0.1%
44	I-80 WB Ramps & Travis Blvd	4	A	2640	6	A	3720	31,800	4	A	2615	7	A	3720	31,675	-0.4%
44	I-80 EB Ramps & Travis Blvd	2	A	2755	6	A	5055	39,050	2	A	2765	6	A	5055	39,100	0.1%
51	I-80 WB On-Ramp - Hilborne Rd & Waterman Blvd	28	C	4010	42	D	5190	46,000	27	C	3970	43	D	5190	45,800	-0.4%
53	I-80 EB Ramps & Air Base Pkwy	11	B	4295	11	B	5090	46,525	10	B	4270	16	B	5090	46,800	-0.3%
99	Red Top Rd & EB SR 12 West Rar	NA	NA	0	NA	NA	0	0	10	B	680	20	B	1180	9,300	0.0%
555	I-680 SB Ramps & Red Top Rd	NA	NA	0	NA	NA	0	0	2	A	615	2	A	970	7,925	0.0%
Total for all Ramp Terminals							651,650	Total for all Ramp Terminals							617,375	-5.26%
Change versus Same Year No Build								Change versus Same Year No Build							-5.26%	

**NON-RAMP TERMINALS**

	Intersection Name	2015 No Build						2015 Build Alternative C1						Change vs No Build		
		AM			PM			AM			PM					
		Delay	LOS	ADT	Delay	LOS	ADT	AADT	Delay	LOS	ADT	Delay	LOS		ADT	AADT
2	Ramsey Rd & Gold Hill Rd	11	B	585	14	B	700	6,425	9	A	240	10	A	300	2,700	-58.0%
4	Lopes Rd & Gold Hill Rd	39	D	2225	20	C	1915	20,700	31	C	2095	23	C	2055	20,750	0.2%
5	Lopes Rd & Red Top Rd	18	B	1055	12	B	1065	10,600	11	B	1835	12	B	1935	18,850	77.8%
10	Ramsey Rd & Bridgeport Ave	12	B	600	13	B	645	6,225	9	A	350	10	A	325	3,375	-45.8%
11	Bridgeport Ave & Cordelia Rd	10	B	920	15	C	1130	10,250	10	A	790	14	B	1025	9,075	-11.5%
12	Lopes Rd & Cordelia Rd	80	F	1930	80	F	2180	20,550	41	D	810	21	C	1020	9,150	-55.5%
13	Lopes Rd & Bridgeport Ave	80	F	1545	80	F	1675	16,100	41	D	675	21	C	705	6,900	-57.1%
14	Central Wy & Cordelia Rd	43	E	1200	50	F	1595	13,975	14	B	720	50	F	1145	9,325	-33.3%
18	Green Valley Rd & Business Center Dr	28	C	2670	30	C	3655	31,625	31	C	2490	34	C	3520	30,050	-5.0%
19	Green Valley Rd & Mangels Blvd	21	C	1365	22	C	1610	14,875	21	C	1355	22	C	1610	14,825	-0.3%
20	Pittman Rd & Central Way	22	C	1335	19	B	1515	14,250	24	C	1260	19	B	1600	14,300	0.4%
23	Suisin Valley Rd & Mangels Blvd	20	B	2710	18	B	3375	30,425	21	C	2660	18	B	3435	30,475	0.2%
26	Abernathy Rd & Magellan (Auto Mt)	12	B	1705	18	B	2575	21,400	13	B	1450	18	B	2570	20,100	-6.1%
32	Beck Ave & Driveway/Cadenas	21	C	1505	29	C	2730	21,175	21	C	1515	19	B	2735	21,250	0.4%
35	Neitzel Rd & Business Center Dr	8	A	1655	9	A	1775	17,150	NA	NA	0	NA	NA	0	0	0.0%
36	Suisin Valley Rd & Rockville Rd	20	B	1095	10	B	1370	12,325	20	B	1095	10	B	1370	12,325	0.0%
37	Rockville Rd & Abernathy Rd	11	B	1380	12	B	1635	15,075	9	A	1330	10	A	1635	14,825	-1.7%
40	Pennsylvania Ave & Cordelia Rd	11	B	575	50	F	1325	9,500	11	B	540	50	F	1325	9,325	-1.8%
41	Oliver Rd & Travis Blvd	15	B	1670	22	C	2205	19,375	15	B	1695	22	C	2390	20,425	5.4%
42	Holiday Ln & Travis Blvd	18	B	1840	28	C	2840	23,400	18	B	1835	28	C	2845	23,400	0.0%
45	Gateway Shopping Center - 2nd Street & Travis Blvd	18	B	2775	35	D	4845	38,100	18	B	2770	35	D	4845	38,075	-0.1%
46	Pennsylvania Ave & Travis Blvd	30	C	3380	32	C	4545	39,625	30	C	3380	32	C	4545	39,625	0.0%
47	Oliver Rd & Wood Creek Dr	15	B	1355	12	B	1775	15,650	17	B	1370	12	B	1775	15,725	0.5%
48	Oliver Rd & Waterman Blvd	20	C	1755	26	D	1970	18,625	20	C	1710	26	C	1970	18,400	-1.2%
49	Capitola Way & Waterman Blvd	10	B	1560	13	B	1570	15,650	10	B	1565	13	B	1570	15,675	0.2%
50	Barbour Dr & Waterman Blvd	11	B	1835	18	B	2110	19,725	11	B	1850	18	B	2110	19,800	0.4%
54	Health Dr & Air Base Pkwy	32	C	4705	38	D	5230	49,675	32	C	4705	38	D	5230	49,675	0.0%
55	Gateway Shopping Center & Travis Blvd	6	A	2335	8	A	3165	27,500	6	A	2330	8	A	3165	27,475	-0.1%
58	Green Valley Rd & Lopes Rd	NA	NA	0	NA	NA	0	0	14	B	2375	16	B	2365	23,700	0.0%
Total for all Non-Ramp Terminals							559,950	Total for all Non-Ramp Terminals							539,575	-3.64%
Change versus Same Year No Build								Change versus Same Year No Build							-3.64%	
Total Volume For All Intersections							1,211,600	Total Volume For All Intersections							1,156,950	-4.51%
Change versus Same Year No Build								Change versus Same Year No Build							-4.51%	

Source: Appendix B, Draft TRAFFIC OPERATIONS REPORT FOR THE I-80/ I-680/SR 12 INTERCHANGE PROJECT REPORT. June 2009<sup>2</sup>  
 AADT assumed a peak hour multiplier of 5, based on guidance provided by Rabinovitz pers. comm.<sup>2</sup>  
 Shaded cells are intersections with less traffic volumes for the Build scenario

# Attachment H

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## **2035 Intersection LOS, Delay, and Volumes**

## 2035 Intersection Delay, LOS, and Volumes

### RAMP TERMINALS

Intersection #	Intersection Name	2035 No Build						2035 Build Alternative C1						Change vs No Build		
		AM			PM			AADT	AM			PM				
		Delay	LOS	AM ADT	Delay	LOS	PM ADT		Delay	LOS	AM ADT	Delay	LOS		PM ADT	AADT
1	I-680 NB Ramps & Gold Hill Rd	20	C	1650	80	F	1790	17,200	10	A	905	80	F	1250	10,775	-37.4%
3	I-680 SB Ramps & Gold Hill Rd	12	B	2285	80	F	2110	21,975	6	A	1685	75	E	1870	17,775	-19.1%
7	I-80 EB Ramps & Red Top Rd	80	F	2480	80	F	3575	30,275	32	C	1990	80	F	2795	23,925	-21.0%
8	I-80 WB Ramps & Red Top Rd	23	C	1985	80	F	2800	23,925	33	C	1815	80	F	2315	20,650	-13.7%
9	Jameson Canyon Rd (SR12 West) & Red Top Rd	80	F	4725	80	F	5740	52,325	14	B	995	80	F	1430	12,125	-76.8%
15	I-680 NB Off-Ramp & Central Way	4	A	880	80	F	1235	10,575	NA	NA	0	NA	NA	0	0	0.0%
16	I-680 SB Onramp (I-80 EB Off-Ramp) & Lopes Rd	51	D	2375	42	D	2680	25,275	22	C	3050	55	D	2630	28,400	12.4%
17	I-80 (SR 12) WB On-Ramp & Green Valley Rd	38	D	2750	39	D	3045	28,975	20	B	3500	20	B	3335	34,175	17.9%
21	I-80 EB Ramps & Pittman Rd	22	C	2210	80	F	2775	24,925	49	D	2135	80	F	2920	25,275	1.4%
22	Suisin Valley Rd & Nietzel Rd	5	A	1570	80	F	1955	17,625	4	A	1565	80	F	1960	17,625	0.0%
24	SR 12 East EB Ramps & Chabourne Rd	4	A	1305	80	F	3980	21,925	4	A	1320	27	C	3065	21,925	0.0%
25	SR 12 East WB Ramps & Chabourne Rd	15	B	1935	73	E	3365	26,500	10	B	1675	21	C	3360	25,175	-5.0%
27	I-80 EB Ramps & Abernathy Rd	9	A	2025	77	E	3780	29,025	9	A	1635	19	B	3765	27,000	-7.0%
28	I-80 WB Ramps & Abernathy Rd	21	C	2550	80	F	3325	29,375	20	C	2170	20	C	3315	27,425	-6.6%
29	I-80 EB Ramps & Magellan Rd	NA	NA	0	NA	NA	0	0	NA	NA	0	NA	NA	0	0	0.0%
30	I-80 EB Off-Ramp & West Texas St	7	A	2640	26	C	3775	32,075	7	A	2595	69	E	3975	32,850	2.4%
31	I-80 EB On-Ramp - Beck Ave & West Texas St	22	C	3525	80	F	5415	44,700	20	C	3455	80	F	5415	44,350	-0.8%
33	I-80 WB On-Ramp - Oliver Rd & Rockville Rd	27	C	2890	47	D	3330	31,100	27	C	2885	80	F	3360	31,225	0.4%
34	I-80 WB Off-Ramp & Oliver Rd	18	B	1910	12	B	2165	20,375	20	C	1975	15	B	2200	20,875	2.5%
38	SR 12 East & Beck Ave	80	F	6720	80	F	8655	76,875	80	F	6770	80	F	8655	77,125	0.3%
39	SR 12 East & Pennsylvania Ave	80	F	6215	80	F	8610	74,125	80	F	6215	80	F	8615	74,150	0.0%
43	I-80 WB Ramps & Travis Blvd	5	A	3220	18	B	4235	37,275	5	A	3205	8	A	4230	37,175	-0.3%
44	I-80 EB Ramps & Travis Blvd	3	A	3475	17	B	5885	46,800	3	A	3495	11	B	5880	46,875	0.2%
51	I-80 WB On-Ramp - Hilborne Rd & Waterman Blvd	42	D	4905	80	F	6025	54,650	40	D	4855	62	E	6020	54,375	-0.5%
53	I-80 EB Ramps & Air Base Pkwy	15	B	5320	38	D	6195	57,575	14	B	5285	18	B	6195	57,400	-0.3%
99	Red Top Rd & EB SR 12 West Ramps	NA	NA	0	NA	NA	0	0	9	A	790	80	F	1855	13,225	0.0%
555	I-680 SB Ramps & Red Top Rd	NA	NA	0	NA	NA	0	0	3	A	865	3	A	1115	9,900	0.0%
Total for all Non-Ramp Terminals							835,450	791,775								
Change versus Same Year No Build								-5.23%								

### NON-RAMP TERMINALS

	Intersection Name	2035 No Build						2035 Build Alternative C1						Change vs No Build		
		AM			PM			AADT	AM			PM				
		Delay	LOS	ADT	Delay	LOS	ADT		Delay	LOS	ADT	Delay	LOS		ADT	AADT
2	Ramsey Rd & Gold Hill Rd	17	C	965	15	C	840	9,025	10	B	435	10	B	405	4,200	-53.5%
4	Lopes Rd & Gold Hill Rd	70	E	2930	56	E	3120	30,250	48	D	2700	53	D	2950	28,250	-6.6%
5	Lopes Rd & Red Top Rd	15	B	1410	15	B	1720	15,650	13	B	2460	14	B	2980	27,200	73.8%
10	Ramsey Rd & Bridgeport Ave	19	C	980	15	B	785	8,825	11	B	550	11	B	435	4,925	-44.2%
11	Bridgeport Ave & Cordelia Rd	11	B	1425	21	C	1660	15,425	11	B	1280	18	C	1490	13,850	-10.2%
12	Lopes Rd & Cordelia Rd	80	F	2785	80	F	3245	30,150	80	F	1365	38	D	1515	14,400	-52.2%
13	Lopes Rd & Bridgeport Ave	80	F	2235	80	F	2480	23,575	80	F	1185	38	D	1120	11,525	-51.1%
14	Central Wy & Cordelia Rd	50	F	1735	50	F	2335	20,350	30	D	1200	50	F	1635	14,175	-30.3%
18	Green Valley Rd & Business Center Dr	37	D	3610	65	E	5415	45,125	56	E	3365	71	E	5165	42,650	-5.5%
19	Green Valley Rd & Mangels Blvd	28	C	1930	30	C	2435	21,825	29	C	1925	30	C	2425	21,750	-0.3%
20	Pittman Rd & Central Way	26	C	1660	28	C	2105	18,825	24	C	1555	28	C	2250	19,025	1.1%
23	Suisin Valley Rd & Mangels Blvd	23	C	3515	25	C	4980	42,475	23	C	3425	25	C	5005	42,150	-0.8%
26	Abernathy Rd & Magellan (Auto Mall Pkwy)	16	B	2035	24	C	3460	27,475	18	B	1740	24	C	3450	25,950	-5.6%
32	Beck Ave & Driveway/Cadenassco Dr	25	C	1910	40	D	3400	26,550	25	C	1910	40	D	3400	26,550	0.0%
35	Nietzel Rd & Business Center Dr	9	A	1945	13	B	3150	25,475	NA	NA	0	NA	NA	0	0	0.0%
36	Suisin Valley Rd & Rockville Rd	24	C	1285	13	B	1690	14,875	24	C	1285	13	B	1690	14,875	0.0%
37	Rockville Rd & Abernathy Rd	11	B	1580	21	C	2065	18,225	10	A	1505	21	C	1970	17,375	-4.7%
40	Pennsylvania Ave & Cordelia Rd	21	C	1085	50	F	1800	14,425	19	C	1045	50	F	1795	14,200	-1.6%
41	Oliver Rd & Travis Blvd	17	B	1900	21	C	2775	23,375	16	B	1930	22	C	2780	23,550	0.7%
42	Holiday Ln & Travis Blvd	19	B	2070	35	D	3230	26,500	19	B	2075	35	D	3230	26,525	0.1%
45	Gateway Shopping Center - 2nd Street & Travis Blvd	17	B	3470	52	D	5690	45,800	17	B	3470	52	D	5690	45,800	0.0%
46	Pennsylvania Ave & Travis Blvd	50	D	4620	51	D	5510	50,650	50	D	5230	51	D	5510	53,700	6.0%
47	Oliver Rd & Wood Creek Dr	16	B	1540	13	B	2000	17,700	15	B	1560	13	B	2000	17,800	0.6%
48	Oliver Rd & Waterman Blvd	34	D	2045	42	E	2235	21,400	33	D	2000	42	E	2235	21,175	-1.1%
49	Capitola Way & Waterman Blvd	11	B	1805	15	B	1785	17,950	11	B	1805	15	B	1785	17,950	0.0%
50	Barbour Dr & Waterman Blvd	13	C	2140	26	C	2445	22,925	13	B	2150	26	C	2445	22,975	0.2%
54	Health Dr & Air Base Pkwy	42	D	5790	65	E	6345	60,675	42	D	5790	65	E	6370	60,800	0.2%
55	Gateway Shopping Center & Travis Blvd	6	A	3010	9	A	3670	33,400	6	A	3010	9	A	3670	33,400	0.0%
58	Green Valley Rd & Lopes Rd	NA	NA	0	NA	NA	0	0	18	B	3285	62	E	3315	33,000	0.0%
Total for all Non-Ramp Terminals							728,900	699,725								
Change versus Same Year No Build								-4.00%								
<b>Total Volume For All Intersections</b>							<b>1,564,350</b>	<b>1,491,500</b>								
Change versus Same Year No Build								-4.66%								

Source: Appendix B, Draft TRAFFIC OPERATIONS REPORT FOR THE I-80/I-680/SR 12 INTERCHANGE PROJECT REPORT. June 2009  
 AADT assumed a peak hour multiplier of 5, based on guidance provided by Rabinowitz pers. comm.  
 Shaded cells are intersections with less traffic volumes for the Build scenario

# Attachment I

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## System-Wide Travel Times and Speeds

## Average Network Travel Times and Speeds

### AM Peak Hour

Segment	Existing		2015 No Build		2015 Build C1		2035 No Build		2035 Build C1	
	Travel Time	Speed	Travel Time	Speed	Travel Time	Speed	Travel Time	Speed	Travel Time	Speed
EB 80:All Lanes	7:50	66	8:05	66	8:15	64	8:20	64	8:20	63
EB 80: HOV Lane	NA	NA	7:40	69	7:20	72	7:40	69	7:25	71
EB 80 to EB 12 East	9:10	52	8:35	58	8:45	56	8:55	55	9:00	55
NB 680 to EB 80	9:45	57	9:00	64	9:30	63	9:25	61	9:55	61
NB 680 to EB 12 East	11:05	47	9:35	57	10:05	56	10:05	54	10:35	54
EB 12 West to EB 80	8:00	63	8:05	63	8:25	62	8:20	61	8:35	61
EB 12 West to EB 12 East	9:20	50	8:40	55	9:00	54	9:00	53	9:10	53
WB 80: All Lanes	8:35	61	8:30	63	8:25	64	10:00	54	8:45	62
WB 80: HOV Lane	NA	NA	7:45	69	7:45	70	8:10	66	7:50	69
WB 80 to SB 680	10:05	60	9:40	62	9:55	63	11:15	53	10:25	60
WB 80 to WB 12 West	10:00	51	8:55	59	10:15	62	13:35	39	10:35	60
WB 12 East to EB 80	16:55	16	15:35	33	14:25	34	19:50	26	17:05	28
WB 12 East to SB 680	18:25	17	16:45	35	15:55	36	21:10	27	18:45	30
WB 12 East to WB 12 West	18:20	15	16:00	32	16:15	36	23:25	22	18:55	31
<b>Averages</b>	<b>11:27</b>	<b>46</b>	<b>10:12</b>	<b>56</b>	<b>10:18</b>	<b>57</b>	<b>12:05</b>	<b>50</b>	<b>11:06</b>	<b>54</b>

### PM Peak Hour

Segment	Existing		2015 No Build		2015 Build C1		2035 No Build		2035 Build C1	
	Travel Time	Speed	Travel Time	Speed	Travel Time	Speed	Travel Time	Speed	Travel Time	Speed
EB 80:All Lanes	10:50	47	11:45	45	10:40	50	16:50	31	21:30	25
EB 80: HOV Lane	NA	NA	8:30	62	8:15	64	9:10	58	9:25	56
EB 80 to EB 12 East	12:55	37	41:00	12	35:50	14	49:30	10	60:00	7
NB 680 to EB 80	16:45	24	34:00	17	13:05	49	48:15	12	60:00	8
NB 680 to EB 12 East	18:05	21	60:00	9	37:30	15	60:00	7	60:00	5
EB 12 West to EB 80	12:15	43	11:55	43	11:00	48	22:05	19	60:00	8
EB 12 West to EB 12 East	13:40	34	41:10	12	36:10	13	54:45	10	60:00	4
WB 80: All Lanes	7:55	66	8:30	63	8:10	66	20:10	27	10:05	53
WB 80: HOV Lane	NA	NA	7:35	71	7:30	71	8:40	62	9:10	59
WB 80 to SB 680	9:20	65	9:40	62	9:35	65	21:05	28	11:35	54
WB 80 to WB 12 West	9:10	56	8:50	60	10:00	63	20:20	26	11:55	53
WB 12 East to EB 80	9:40	51	10:55	47	9:55	49	60:00	3	17:00	29
WB 12 East to SB 680	11:05	52	12:05	48	11:20	50	60:00	3	18:25	31
WB 12 East to WB 12 West	10:55	44	11:15	45	11:45	50	60:00	3	18:50	31
<b>Averages</b>	<b>11:53</b>	<b>45</b>	<b>19:48</b>	<b>43</b>	<b>15:46</b>	<b>48</b>	<b>36:29</b>	<b>21</b>	<b>30:34</b>	<b>30</b>

Segments that were shown as ">60:00" in the traffic report were rounded off to 60:00 for calculation purposes.

Source: Draft TRAFFIC OPERATIONS REPORT FOR THE I-80/ I-680/SR 12 INTERCHANGE PROJECT REPORT. June 2009

# Attachment J

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## **Congestion Relief**

## **System-Wide Measures of Effectiveness**

### ***2015 AM Peak Hour Conditions***

Alternative C Phase I would have very little effect on mobility. VMT would decrease slightly (approximately 1,000 vehicle-miles or less than 0.5 percent) compared to No Project conditions. Alternative C Phase I would result in a minimal improvement to system-wide operations, compared to No Project conditions, resulting in an increase in VHD of only 3 percent and no change in average network travel speed.

### ***2015 PM Peak Hour Conditions***

Alternative C Phase 1 would improve corridor-wide mobility, increasing VMT by 7 percent while decreasing VHD by approximately 39 percent. Average network travel speed would increase by 20 percent (from 36 miles per hour under No Project conditions to approximately 43 miles per hour with Alternative C).

**TABLE 6-1  
 2015 PHASE 1 AM PEAK HOUR  
 SYSTEM WIDE MEASURES OF EFFECTIVENESS<sup>1</sup>**

MOE	Existing	No Project	Alternative B <sup>2</sup> Phase 1	Alternative C <sup>2</sup> Phase 1
Vehicle Miles of Travel (Vehicle Miles / Hour)	316,220	449,870	451,325 (< 1%)	448,800 (< 1%)
Vehicle Hours of Delay (Hours of Delay / Hour)	1,140	1,075	840 (- 22%)	1,105 (+ 3%)
Average Network Travel Speed	46 mph	51.2 mph	52.6 mph (+ 3%)	51.0 mph (< 1%)

1. The study area extends on I-80 from west of Red Top Road to east of Air Base Parkway / Waterman and on I-680 south of Gold Hill Road to I-80. The study area also includes SR 12 east of Pennsylvania Road and west of Red Top Road and all local arterials within the project study area.
2. (%) indicates change relative to the No Project condition

Source: Fehr & Peers, February 2009.

**TABLE 6-2  
 2015 PHASE 1 PM PEAK HOUR  
 SYSTEM WIDE MEASURES OF EFFECTIVENESS<sup>1</sup>**

MOE	Existing	No Project	Alternative B <sup>2</sup> Phase 1	Alternative C <sup>2</sup> Phase 1
Vehicle Miles of Travel (Vehicle Miles / Hour)	334,755	480,410	531,935 (+ 11%)	516,055 (+ 7%)
Vehicle Hours of Delay (Hours of Delay / Hour)	1,885	5,100	2,150 (- 58%)	3,110 (- 39%)
Average Network Travel Speed	33 mph	36.2 mph	47.6 mph (+ 32%)	43.3 mph (+ 20%)

1. The study area extends on I-80 from west of Red Top Road to east of Air Base Parkway / Waterman and on I-680 south of Gold Hill Road to I-80. The study area also includes SR 12 east of Pennsylvania Road and west of Red Top Road and all local arterials within the project study area.
2. (%) indicates change relative to the No Project condition

Source: Fehr & Peers, February 2009.

**CONSTRUCTION YEAR 2015 - PEAK HOUR CONDITIONS SYSTEM WIDE MEASURES OF EFFECTIVENESS<sup>1</sup>**

MOE	Route	No Project		Alt. C, Phase 1	
		2015 AM Peak Hour	2015 PM Peak Hour	2015 AM Peak Hour	2015 PM Peak Hour
Bottleneck locations		<ul style="list-style-type: none"> <li>Bottleneck WB on I-80 between truck scales and Suisun Valley Road.</li> <li>Bottleneck WB and EB on SR 12 East at the Beck Avenue and Pennsylvania Avenue signalized intersections.</li> </ul>	<ul style="list-style-type: none"> <li>Major bottleneck EB on SR 12 East at the Beck Avenue and Pennsylvania Avenue signalized intersections; impacts EB I- 80 and NB I-680.</li> <li>Bottleneck on WB I-80 at Suisun Valley Road</li> </ul>	Bottleneck WB and EB on SR 12 East at the Beck Avenue and Pennsylvania Avenue signalized intersections.	Major bottleneck EB on SR 12 East Pennsylvania Avenue signalized intersection; impacts EB I-80 and NB I-680.
Duration of congestion		Congestion would decrease to near existing conditions, lasting approximately 1.5 hours.	Congestion would significantly increase compared to existing conditions, lasting beyond 3 hours	Congestion would decrease to near existing conditions, lasting approximately 1.5 hours.	Congestion would decrease to near existing conditions, lasting approximately 2 hours.
Queue lengths		WB SR 12 East from Beck Avenue to east of Main Street (2+ miles).	EB SR 12 East from Pennsylvania Avenue intersection to NB I-680 (south of Gold Hill Road), 7+ miles, and EB I-80 (Green Valley Road onramp), 4.5 miles.	WB SR 12 East from Beck Avenue to east of Main Street (2+ miles).	EB SR 12 East from Pennsylvania Avenue intersection to NB I-680 connector ramp and EB I- 80 (I-680 merge), 5 miles.
Travel times	WB I-80 to SB I-680	6:40	34:00	9:55	13:05
	WB I-80	8:30	11:45	8:25	10:40
	SR-12 East to WB I-80	15:35	11:55	14:25	11:00
Maximum Individual delay	WB I-80 to SB I-680	25 seconds	26 minutes	40 seconds	5 minutes
	WB I-80	30 seconds	4 minutes	25 seconds	3 minutes
	SR-12 East to WB I-80	7 minutes	4 minutes	6 minutes	3 minutes
Speed	WB I-80 to SB I-680	62 mph	17 mph	62 mph	49 mph
	WB I-80	63 mph	45 mph	60 mph	50 mph
	SR-12 East to WB I-80	35 mph	43 mph	34 mph	48 mph
Flows (volume)	WB I-80 to SB I-680	3,305	2,168	3,378	4,327
	WB I-80	5,466	7,272	5,227	7,937
	SR-12 East to WB I-80	2,202	1,548	2,532	1,334

<sup>1</sup> The study area extends on I-80 from west of Red Top Road to east of Air Base Parkway / Waterman and on I-680 south of Gold Hill Road to I-80. The study area also includes SR 12 east of Pennsylvania Road and west of Red Top Road and all local arterials within the project study area.

Source: Fehr & Peers 2009

### ***2035 AM Peak Hour Conditions***

Alternative C Phase I would improve corridor-wide mobility by increasing VMT approximately 1 percent, while decreasing VHD by 18 percent. Average network travel speeds would increase 6 percent (from 42 mph under No Project conditions to approximately 44 mph).

### ***2035 PM Peak Hour Conditions***

Alternative C Phase I would improve corridor-wide mobility by increasing VMT by 16 percent, while decreasing VHD by 16 percent. Average network travel speed would increase 25 percent (from 16 mph to 20 mph).

**TABLE 7-1  
 2035 PHASE 1 AM PEAK HOUR  
 SYSTEM WIDE MEASURES OF EFFECTIVENESS<sup>1</sup>**

MOE	Existing	No Project	Alternative B <sup>2</sup> Phase 1	Alternative C <sup>2</sup> Phase 1
Vehicle Miles of Travel (Vehicle Miles / Hour)	316,220	539,445	564,605 (+ 5%)	546,624 (+ 1%)
Vehicle Hours of Delay (Hours of Delay / Hour)	1,140	3,695	1,845 (- 100%)	3,021 (- 18%)
Average Network Travel Speed	46 mph	41.8 mph	48.9 mph (+ 17%)	44.2 mph (+ 6%)

1. The study area extends on I-80 from west of Red Top Road to east of Air Base Parkway / Waterman and on I-680 south of Gold Hill Road to I-80. The study area also includes SR 12 east of Pennsylvania Road and west of Red Top Road and all local arterials within the project study area.
2. (%) indicates change relative to the No Project condition

Source: Fehr & Peers, February 2009.

**TABLE 7-2  
 2035 PHASE 1 PM PEAK HOUR  
 SYSTEM WIDE MEASURES OF EFFECTIVENESS<sup>1</sup>**

MOE	Existing	No Project	Alternative B <sup>2</sup> Phase 1	Alternative C <sup>2</sup> Phase 1
Vehicle Miles of Travel (Vehicle Miles / Hour)	334,755	413,160	575,815 (+ 39%)	480,410 (+ 16%)
Vehicle Hours of Delay (Hours of Delay / Hour)	1,885	19,065	10,155 (- 47%)	16,095 (- 16%)
Average Network Travel Speed	33 mph	15.9 mph	28.9 mph (+ 82%)	19.8 mph (+ 25%)

1. The study area extends on I-80 from west of Red Top Road to east of Air Base Parkway / Waterman and on I-680 south of Gold Hill Road to I-80. The study area also includes SR 12 east of Pennsylvania Road and west of Red Top Road and all local arterials within the project study area.
2. (%) indicates change relative to the No Project condition

Source: Fehr & Peers, February 2009.

**CONSTRUCTION YEAR 2035 - PEAK HOUR CONDITIONS SYSTEM WIDE MEASURES OF EFFECTIVENESS<sup>1</sup>**

MOE	Route	No Project		Alt. C, Phase 1	
		2035 AM Peak Hour	2035 PM Peak Hour	2035 AM Peak Hour	2035 PM Peak Hour
Bottleneck locations		<ul style="list-style-type: none"> <li>Bottleneck WB on I-80 between truck scales and Suisun Valley Road.</li> <li>Bottleneck WB and EB on SR 12 East at the Beck Avenue and Pennsylvania Avenue signalized intersections.</li> <li>Bottleneck WB on SR 12 west at the Red Top Road signalized intersection; impacts I-80 WB.</li> </ul>	<ul style="list-style-type: none"> <li>Major bottleneck EB on SR 12 East at the Beck Avenue and Pennsylvania Avenue signalized intersections; impacts EB I-80 and NB I-680.</li> <li>Breakdown of I-80 / Suisun Valley Road and SR 12 East / Chadbourne Road interchanges; impacts WB I-80 and WB SR 12 East.</li> </ul>	Bottleneck WB and EB on SR 12 East at the Beck Avenue and Pennsylvania Avenue signalized intersections.	<ul style="list-style-type: none"> <li>Major bottleneck EB on SR 12 East Pennsylvania Avenue signalized intersection; impacts EB I-80 and NB I-680.</li> <li>Bottleneck on SR 12 East / Chadbourne Road interchanges; impacts WB I-80 and WB SR 12 East.</li> </ul>
Duration of congestion		Congestion would significantly increase compared to existing conditions, lasting approximately 3 hours.	Congestion would significantly increase compared to existing conditions, lasting beyond 6 hours	Congestion would significantly increase compared to existing conditions, lasting approximately 2.5 hours	Congestion would significantly increase compared to existing conditions, lasting beyond 5 hours
Queue lengths		<ul style="list-style-type: none"> <li>WB I-80 from Suisun Valley Road to SR 12 East (almost 2 miles).</li> <li>WB SR 12 East from Beck Avenue to east of Main Street (2+ miles).</li> <li>EB SR 12 East from Pennsylvania Avenue to Beck Avenue (1 mile).</li> <li>WB SR 12 West from Red Top Road to I-80 east of I-680 on-ramp (1 mile).</li> </ul>	<ul style="list-style-type: none"> <li>EB SR 12 East from Pennsylvania Avenue intersection to NB I-680 (south of Gold Hill Road), 7+ miles, EB I-80 (west of Red Top Road), 9+ miles, and EB SR 12 West (west of Red Top Road), 9+ miles.</li> <li>WB I-80 from Suisun Valley Road back beyond Air Base Parkway (7+ miles).</li> </ul>	<ul style="list-style-type: none"> <li>WB SR 12 East from Beck Avenue to east of Main Street (2+ miles).</li> <li>EB SR 12 East from Pennsylvania Avenue to Chadbourne Road (2 miles).</li> </ul>	<ul style="list-style-type: none"> <li>EB SR 12 East from Pennsylvania Avenue intersection to NB I-680 (south of Gold Hill Road), 7+ miles, EB I-80 (west of Red Top Road), 9+ miles, and EB SR 12 West (west of Red Top Road), 9+ miles</li> <li>WB I-80 from Suisun Valley Road to Abernathy Road (3 miles).</li> </ul>
Travel times	WB I-80 to SB I-680	11:15	48:15	8:45	Greater than 60:00
	WB I-80	10:00	16:50	10:25	21:30
	SR-12 East to WB I-80	19:50	22:05	14:25	Greater than 60:00
Maximum Individual delay	WB I-80 to SB I-680	2 minutes	40 minutes	None	More than 52 minutes
	WB I-80	2 minutes	9 minutes	2 minutes	13 minutes
	SR-12 East to WB I-80	12 minutes	14 minutes	6 minutes	More than 52 minutes
Speed	WB I-80 to SB I-680	53 mph	12 mph	62 mph	8 mph
	WB I-80	54 mph	31 mph	60 mph	25 mph
	SR-12 East to WB I-80	26 mph	19 mph	34 mph	8 mph
Flows (volume)	WB I-80 to SB I-680	3,699	746	3,929	1,549
	WB I-80	6,121	5,411	6,074	6,422
	SR-12 East to WB I-80	2,139	234	2,466	342

<sup>1</sup> The study area extends on I-80 from west of Red Top Road to east of Air Base Parkway / Waterman and on I-680 south of Gold Hill Road to I-80. The study area also includes SR 12 east of Pennsylvania Road and west of Red Top Road and all local arterials within the project study area.

## **System Operations and Travel Speeds**

### ***2015 AM Peak Hour Travel Times***

During the AM peak hour, Alternative C Phase I would result in minimal improvement to travel times in the peak westbound direction, with increases or decreases of less than 30 seconds compared to No Project conditions. It should be noted that one travel time route (WB I-80 to WB SR 12 West) would increase by more than ten percent. This is due to the relocation of Red Top Road 1,500 feet west of the current intersection location, and thus a slightly longer travel path. Travel times from westbound SR 12 East to westbound I-80 and southbound I-680 would decrease slightly by seven and five percent, respectively, because of the improvements to freeway flows in the right two lanes on westbound I-80 west of the SR 12 East connector.

### ***2015 AM Freeway Operations***

Construction of Alternative C Phase I would improve AM peak hour operations by adding capacity to westbound I-80, but would not alleviate either the Beck Avenue or Pennsylvania Avenue intersection bottlenecks on westbound SR 12 East. The combination of added capacity on I-80 westbound, and continuation of the bottleneck on westbound SR 12 East, would result in a reduction in congestion on westbound I-80.

Alternative C Phase I would also improve SR 12 West, including replacing the at-grade intersection at Red Top Road with a grade separated interchange approximately 1,500 feet west of the current location. This would reduce congestion and queuing on SR 12 West and reduce the queue spillback to I-80, which would improve operations on westbound I-80 approaching the SR 12 west connector.

All the freeway mainline and weaving sections within the project study area, except for those on westbound SR 12 East, would operate at LOS D conditions or better during the AM peak hour. Locations east of Beck Avenue on westbound SR 12 East would continue to experience LOS F conditions. Only three locations would operate over capacity (LOS F) as a result of the Beck Avenue and Pennsylvania Avenue intersection bottlenecks on westbound SR 12 East.

### ***2015 PM Peak Hour Travel Times***

The benefits of constructing Alternative C Phase I during the PM peak hour include travel time savings in the peak eastbound direction ranging from 0 to 60 percent. The travel time savings would result in travel times comparable to, or even better than, existing travel times. Those travel time routes that would be better than existing conditions include those starting on northbound I-680. In the westbound direction, Alternative C Phase I would result in reductions for most travel times; two travel times that would increase slightly are the two that end on westbound SR 12 West. The increased travel time would be due to the relocation of interchanges (the current at-grade intersection at Red Top Road on SR 12 West would be replaced with a grade separated interchange located approximately 1,500 feet west of the existing intersection location), which would result in longer travel distances.

## ***2015 PM Freeway Operations***

With construction of Alternative C Phase I, the queuing on westbound I-80 would be eliminated and vehicles would travel at free flow speeds. The bottleneck on eastbound SR 12 East, however, would continue to result in congestion spilling back onto eastbound I-80. The addition of the third lane on eastbound SR 12 East would increase the queuing capacity and throughput on SR 12 East, but would only slightly improve the amount of traffic served at the Beck Avenue and Pennsylvania Avenue intersections. The queue from SR 12 East would continue to spill back to the connector ramp from northbound I-680, which is comparable to the extent of the queue under No Project conditions. This queue would also cause congestion along Abernathy Road and other local streets, as vehicles would not be able to enter I-80 and SR 12 East heading eastbound.

The bottleneck on SR 12 East would constrain the amount of traffic exiting the project on eastbound I-80 and thus the freeway downstream of SR 12 East would operate at LOS D or better, as with No Project conditions. The number of vehicles served would improve slightly with Alternative C Phase I (55 to 70 percent of the demand), as compared to No Project conditions.

With Alternative C Phase I, westbound SR 12 East would continue to experience congestion and queuing as far back as Jackson Street, as with No Project conditions, due to the at-grade intersections. With construction of Alternative C Phase I, two freeway segments within the project study area would operate at capacity (LOS E), but would not cause queue spillback into adjacent locations. Those locations are as follows:

- NB I-680, off-ramp to Gold Hill Road
- NB I-680, on-ramp from Gold Hill Road

## ***2035 AM Peak Hour Travel Times***

Constructing of Alternative C Phase I during the AM peak hour would result in travel time savings in the peak westbound direction of 5 to 20 percent compared to No Project conditions. In the eastbound direction travel times would be similar to No Project conditions, increasing by 30 seconds or less. The increase in travel time to eastbound SR 12 East is due to an increase in demand served, and therefore more vehicles arriving at the bottleneck, while the increase in travel times to I-80 eastbound is due to the lengthening of some travel time paths due to the location of new interchanges.

## ***2035 AM Freeway Operations***

Construction of Alternative C Phase I would improve operations by adding capacity to westbound I-80, but would not alleviate either the Beck Avenue or Pennsylvania Avenue intersection bottlenecks on westbound SR 12 East. The improvements, however, would reduce congestion and queuing on westbound I-80 on several segments, including between the SR 12 East connector and the I-680 and SR 12 West connectors.

Alternative C Phase I would also improve SR 12 West, including replacing the at-grade intersection at Red Top Road/North Connector with a grade separated interchange approximately 1,500 feet west of the current location. This would reduce congestion and queuing on SR 12 West and reduce the queue spillback to I-80, which would improve operations on westbound I-80 approaching the SR 12 west connector.

All the freeway mainline and weaving sections within the project study, except for those on westbound SR 12 East, would operate at LOS E conditions or better during the AM peak hour. Locations east of Pennsylvania Avenue on westbound SR 12 East would continue to experience LOS F conditions. Only three locations would operate over capacity (LOS F) as a result of the Beck Avenue and Pennsylvania Avenue intersection bottlenecks on westbound SR 12 East.

With construction of Alternative C Phase I, eight freeway segments within the project study area would operate at capacity (LOS E), but would not cause queue spillback into adjacent locations. Those locations are as follows:

- WB I-80, mainline between Waterman Boulevard/Air Base Parkway and Travis Boulevard
- WB I-80, weave between Travis Boulevard Loop and Oliver Road
- WB I-80, mainline between SR 12 East Connector and Truck Scales
- WB I-80, weave between Truck Scales and Suisun Valley Road
- NB I-680, off-ramp to Gold Hill Road
- NB I-680, on-ramp from Gold Hill Road
- NB I-680, off-ramp to Red Top Road
- SB I-680, on-ramp from Gold Hill Road

### ***2035 PM Peak Hour Travel Times***

During the PM peak hour, Alternative C Phase I would result in a worsening of travel times in the peak eastbound direction of up to 200 percent. Some of the increase in the eastbound direction is due to an increase in travel distances because of new ramp locations. However, most of the increase is due to the two lane drops between I-680 and the Suisun Valley Road overcrossing, the short distance between the SR 12 West and I-680 on-ramps, and the heavy demand for the right-most lanes on I-80. In the westbound direction, travel time savings would approach 70 percent compared to No Project conditions.

### ***2035 PM Freeway Operations***

With construction of Alternative C Phase I, the length of the queue on westbound I-80 that starts at the weave between the Truck Scales and Suisun Valley Road would significantly reduce from beyond the

project study area east of Air Base Parkway to Abernathy Road. The severity of the congestion on westbound I-80 would also reduce significantly and the volume served would increase from 48 to 82 percent (a 70 percent increase) as compared to the No Project condition. The queue spillback from I-80 to westbound SR 12 East queue would also be reduced significantly.

The bottleneck on eastbound SR 12 East would continue to result in severe congestion spilling back to eastbound I-80. The addition of the third lane on eastbound SR 12 East would increase the queuing capacity of SR 12 East and would slightly increase the amount of traffic served at the Beck Avenue and Pennsylvania Avenue intersections. However, the queue from SR 12 East would still spill as far back as in the No Project case, to beyond the project study area on eastbound I-80, northbound I-680 and eastbound SR 12 West. This queue would also cause congestion at adjacent ramp terminal intersections, as vehicles would not be able to enter I-80 and SR 12 East. Most local streets would also become congested due to queue spillback from the freeway and due to motorists diverting to alternative routes.

The bottlenecks on eastbound SR 12 East would continue to constrain the amount of traffic exiting the project on eastbound I-80 and thus the freeway downstream of SR 12 East would operate at LOS D or better, as with No Project conditions.

**Project Information**

Project Name: **Vacaville Intermodal Station - Phase 2**  
Sponsor: **Vacaville** TIP ID: **SOL110009** RTP ID: **230635**  
Agency: **Vacaville** Mode: **OTHER TRANSIT** Sub Mode:  
Project Type: **REGIONAL BUS** Trans. System: **TRANSIT** Purpose: **EXPANSION** County: **Solano**  
Proj. Desc.: **In Vacaville: Construction of a three to four story, approximately 400 space, parking garage.**  
RTP Title: **Construct new 400-space parking garage at the Vacaville Intermodal Station (Phase 2)**

**Step 1: Project Identification**

- 1: Does this project have any federal funding? **Yes**
- 2: Does this project (or any phases of the project) require any federal action (such as federal authorization or approval for funding or environmental review) after December 14, 2010? **Yes**
- 3: Is the project exempt from both regional and project-level air quality conformity under 40 CFR 93.126?  
Project Type Selected: **None Applies** **No**
- 4: Is the project exempt from regional air quality conformity under 40 CFR 93.127?  
Project Type Selected: **None Applies** **No**
- 5: Is the project exempt from regional air quality conformity under 40 CFR 93.128?  
Project Type Selected: **None Applies** **No**
- 6: Does this project meet the definition of a "project of air quality concern" under 40 CFR 93.123(b)(1)? **No**  
Project Type Selected: **None Applies**

**Dates for Interagency Consultation**

Requested Date of Interagency Consultation:  
Meeting Date of PM2.5 consultation via Air Quality Conformity Task Force to determine POAQC:  
Action Date of PM2.5 consultation via Air Quality Conformity Task Force to determine POAQC:

**Dates for PM2.5 Hot-Spot Analysis**

Meeting Date of PM2.5 consultation via Air Quality Conformity Task Force to determine review hot-spot analysis:  
Action Date of PM2.5 consultation via Air Quality Conformity Task Force to determine review hot-spot analysis: