

Application of Criteria for a Project of Air Quality Concern
Project Title: State Route (SR) 242 / Clayton Road Ramps Project
Project Summary for Air Quality Conformity Task Force Meeting: August 28, 2014

Description

- Project will modify existing partial interchanges at Clayton Road and Concord Avenue and provide local road improvements in the City of Concord (see attached Figure 1, Project Location Map).
- There are three Build Alternatives, Build Alternative 1, Build Alternative 1a and Build Alternative 2, and a No-Build Alternative. Differences between the three Build Alternatives are generally related to the alignment of the new ramp structures and related components (see attached Figure 2, Project Build Alternatives).
- New ramps at the SR 242/Clayton Road interchanges would reduce traffic volumes on the southbound SR 242/Concord Avenue off ramp and the northbound SR 242/Concord Avenue on ramp.
- New ramps at the SR 242/Clayton Road interchanges would result in less congestion at ramp and local street intersections in the area.
- Reduction of congestion and improvement of traffic operations at the SR 242/Clayton Road and SR 242/Concord Avenue interchanges would enhance safety and mobility for all travel modes.
- Enhanced bicycle and pedestrian facilities will improve and encourage the movement of these travel modes through both interchange areas.
- Interchange and roadway improvements will improve access to key, local destinations within Concord and make goods movement more reliable through both interchanges.
- Intersection modifications (i.e., construction of islands, lane striping, etc.) and signalization improvements would be provided at various locations within project limits.

Background

- NEPA process for Environmental Assessment scheduled for completion by April, 2016.
- Seeking air quality conformity determination on August 28, 2014.

Not a Project of Air Quality Concern (40 CFR 93.123(b)(1))

(i) New or expanded highway projects with significant number/increase in diesel vehicles?

- Not a new or expanded highway project.
- The percentage of trucks will remain the same with the project as without the project.

(ii) Affects intersections at LOS D, E, or F with a significant number of diesel vehicles?

- The project would improve operations and would reduce congestion and delay at ramp and local street intersections.
- The project would not result in substantial redistribution of traffic or changes in the percentage of truck trips through the site.

- No intersections currently operating at LOS D or E would degrade under future project conditions; LOS would remain the same and/or improve.
- No intersections under existing or future project conditions operate at LOS F.

(iii) New bus and rail terminals and transfer points?

- Not Applicable.

(iv) Expanded bus and rail terminals and transfer points?

- Not Applicable.

(v) Affects areas identified in PM10 or PM2.5 implementation plan as site of violation?

- No state implementation plan for PM2.5 and therefore, not identified in plan as an area of potential violation.

PM_{2.5} Project Assessment Form for Interagency Consultation

RTIP ID# 22365

TIP ID# CC-110066

Air Quality Conformity Task Force Consideration Date

August 28, 2014

Project Description

The Contra Costa Transportation Authority (CCTA) and the City of Concord, in cooperation with the California Department of Transportation (Caltrans), propose to provide interchange and local road improvements on State Route (SR) 242 from 0.1 mile north of the Interstate 680 (I-680)/SR 242 separation and 0.4 mile north of Concord Avenue undercrossing, in the City of Concord, in Contra Costa County (see Figure 1). The project would modify the existing partial interchanges at Clayton Road and Concord Avenue to relieve local street congestion and accommodate growth and future needs of the surrounding area. There are three Build Alternatives and the No-Build Alternative (see Figure 2).

Build Alternative 1 - The SR 242/Clayton Road interchange would be reconfigured from a partial interchange to provide new southbound SR 242 on- and off-ramps at Franquette Avenue, and a new northbound SR 242 on-ramp from Clayton Road. The existing northbound and southbound SR 242 ramps to and from Clayton Road would remain, with the northbound SR 242 off-ramp widened to two-lanes. The ramp termini for the new southbound SR 242 ramps at Franquette Avenue would be signalized. Proposed local road improvements would occur on Willow Pass Road, Concord Avenue, and Franquette Avenue. Eastbound Willow Pass Road would be widened to add an additional lane approaching the Market Street intersection. Concord Avenue would be modified between the ramp termini to provide three through lanes in each direction. The additional lanes along this segment of Concord Avenue would be accommodated through roadway widening within the existing median. Franquette Avenue would be widened to add a lane between the new southbound SR 242 on- and off-ramps and Willow Pass Road.

Build Alternative 1A - Build Alternative 1A is identical to Build Alternative 1 with the exception of the alignment of the new southbound SR 242 on- and off-ramps that would be constructed at Franquette Avenue. Under Build Alternative 1A, the alignment of the new Franquette Avenue ramps would be shifted approximately 50 feet north, resulting in a smaller turning radius for the proposed southbound SR 242 loop on-ramp. Proposed local roadway improvements and a new northbound SR 242 ramps at Clayton Road, as described in Build Alternative 1, would be the same.

Build Alternative 2 - The SR 242/Clayton Road interchange would be reconfigured to provide new southbound SR 242 on- and off-ramps and a new northbound SR 242 on-ramp at Willow Pass Road. The ramp termini for the new southbound ramps would be signalized. Left-turn access from westbound Willow Pass Road to the new southbound SR 242 on-ramp connection would be prohibited. As with Build Alternatives 1 and 1A, the existing northbound and southbound SR 242 ramps to and from Clayton Road would remain, with the northbound SR 242 off-ramp widened to two-lanes. Proposed local roadway improvements would occur on Willow Pass Road and Concord Avenue. Eastbound Willow Pass Road would be widened to add an additional lane. Concord Avenue would be modified to provide three through lanes in each direction.

No-Build Alternative - Under the No-Build Alternative, no changes would be made to SR 242 within the overall project limits. No construction activities would occur, and there would be no change in the operations of the existing highway facility. Other planned and approved land use development and transportation improvements along local routes may be implemented by local agencies or under other projects. The No-Build Alternative is considered the environmental baseline against which potential environmental effects of the Build Alternatives are evaluated.

Project Assessment Form for PM_{2.5} Interagency Consultation

Type of Project: Reconfigure existing interchange and local roadway improvements.				
County Contra Costa	Narrative Location The project area extends along SR 242 from north of the I-680 interchange to north of the Concord Avenue interchange in the City of Concord in Contra Costa County, California. Caltrans Project ID 0412000434 – EA# 04-3G8200 District – County – Route – Post Miles [04-CC-242-PM R0.1/R1.9]			
Lead Agency: Contra Costa Transportation Authority (CCTA)				
Contact Person Susan Miller, Director of Projects	Phone# 925-256-4736	Fax# 925-256-4701	Email smiller@ccta.net	
Federal Action for which Project-Level PM Conformity is Needed <i>(check appropriate box)</i>				
Categorical Exclusion (NEPA)	<input checked="" type="checkbox"/> EA or Draft EIS	<input checked="" type="checkbox"/> FONSI or Final EIS	PS&E or Construction	Other
Scheduled Date of Federal Action: April 2016				
NEPA Delegation – Project Type <i>(check appropriate box)</i>				
Exempt	Section 6004 – Categorical Exemption	<input checked="" type="checkbox"/> Section 6005 – Non-Categorical Exemption		
Current Programming Dates				
	PE/Environmental	ENG	ROW	CON
Start	October 2013	April 2016	April 2016	January 2018
End	April 2016	September 2017	September 2017	December 2019
 Project Purpose and Need (Summary): The SR 242/Clayton Road and SR 242/Concord Avenue interchanges are primary access points on the state highway system for the City of Concord in Contra Costa County. The interchanges serve as key access to important local destinations such as the Concord Central Business District (CBD) and the Concord BART station to the east; Buchanan Airport and Waterworld to the west; and the arterial roadways of Concord Avenue, Clayton Road, and Willow Pass Road that connect Concord with adjacent cities. Need: <u>Congestion and Delay</u> Regional growth and new local development in Concord has resulted in significant traffic increases on SR 242 and local streets serving both interchanges. To accommodate the substantial growth projected to occur in the future, there is a need to improve state highway and local street operations to reduce congestion and delay. <u>Accessibility to Local Destinations</u> Efficient access into and out of the Concord CBD is critical to healthy and sustainable economic development. Current congestion and delay between the CBD and SR 242 adversely affect the economic vitality and sustainability of the CBD. Improving access within the study area is consistent with the Concord Transportation and Circulation Plan. <u>Accessibility for Bicyclists, Pedestrians, Transit Services and Goods Movement</u> Congestion and delay in the project area also adversely affect access for goods movement, and travel modes that minimize auto use such as bicycle, pedestrian, and transit facilities. They depend on a transportation system that is safe and reliable, and which moves people and goods efficiently.				

PM_{2.5} Project Assessment Form for Interagency Consultation

Purpose:

The purpose of the project is to reduce congestion and improve traffic operations at the SR 242/Clayton Road and SR 242/Concord Avenue interchanges, thereby enhancing safety and mobility for all travel modes in the area. Specific elements of the project purpose include:

- Reduce traffic congestion and delay at both interchanges and at ramp intersections with local streets,
- Enhance transit access through both interchange areas,
- Provide reliable goods movement access through both interchanges,
- Improve access to key local destinations including the Concord CBD and the Concord BART station,
- Enhance bicycle and pedestrian movements through both interchange areas

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

The project is located in the northerly part of Contra Costa County, in the City of Concord. Land uses along the SR 242 corridor in the study area include, retail, residential, industrial, and commercial.

Brief summary of assumptions and methodology used for conducting analysis

The AADT and truck percentages are taken from the Traffic Forecast for PM 2.5 Analysis memo prepared by Fehr & Peers^{1,2}. The project forecasts were prepared with model runs using the Solano-Napa Travel Demand Model.

References Cited:

¹Fehr and Peers, August 2014. Study Area ADT Forecasts and Daily LOS Summary for the SR 242/Clayton Road Interchange Project. (See Exhibit 1)

²Fehr and Peers, August 2014. Traffic Technical Memorandum for the SR 242/Clayton Road Interchange Project, Traffic Forecasts. (See Exhibit 2)

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

Not applicable, see below for highway interchange.

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, see below for highway interchange.

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

Roadway	Existing		2020 - No Project		2020 - Alternative 1		2020 - Alternative 2	
	Total AADT	Truck AADT	Total AADT	Truck AADT	Total AADT	Truck AADT	Total AADT	Truck AADT
SR 242	103,910	5,196	110,670	5,534	110,670	5,534	110,670	5,534
Clayton Road	27,030	1,352	28,330	1,417	32,330	1,617	28,560	1,428
Market Street	20,130	1,007	20,890	1,045	17,000	850	17,890	895
Willow Pass Road	26,340	1,317	27,440	1,372	28,330	1,417	32,110	1,606
Concord Avenue	33,520	1,676	36,110	1,806	30,220	1,511	30,220	1,511

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RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No-Build cross-street AADT, % and # trucks, truck AADT¹

Roadway	2040 - No Project		2040 - Alternative 1		2040 - Alternative 2	
	Total AADT	Truck AADT	Total AADT	Truck AADT	Total AADT	Truck AADT
SR 242	129,330	6,467	129,330	6,467	129,330	6,467
Clayton Road	30,670	1,534	34,780	1,739	30,890	1,545
Market Street	22,330	1,117	18,000	900	18,890	946
Willow Pass Road	29,670	1,484	30,780	1,539	34,670	1,734
Concord Avenue	42,670	2,134	36,110	1,806	36,110	1,806

1. ADT forecasts estimated by applying a 9% daily factor to peak hour forecasts. The factor was derived by estimating a study area peak hour factor based on Caltrans census data for the SR 242 study corridor.

Roadway	Existing	2020 - No Project	2020 - Alternative 1	2020 - Alternative 2
	LOS	LOS	LOS	LOS
SR 242	D	D	D	D
Clayton Road	C	C	C	C
Market Street	C	C	C	C
Willow Pass Road	C	C	C	C
Concord Avenue	C	D	C	C

Roadway	2040 - No Project	2040 - Alternative 1	2040 - Alternative 2
	LOS	LOS	LOS
SR 242	E	E	E
Clayton Road	C	C	C
Market Street	C	C	C
Willow Pass Road	C	C	C
Concord Avenue	E	D	D

References Cited:

¹Fehr and Peers, August 2014. Study Area ADT Forecasts and Daily LOS Summary for the SR 242/Clayton Road Interchange Project. (See Exhibit 1)

²Fehr and Peers, August 2014. Traffic Technical Memorandum for the SR 242/Clayton Road Interchange Project, Traffic Forecasts. (See Exhibit 2)

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

Not Applicable; see above for highway interchange.

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

Not Applicable; see above for highway interchange.

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Describe potential traffic redistribution effects of congestion relief

The results of the Fehr and Peers, August, 2014. *Traffic Technical Memorandum for the SR 242/Clayton Road Interchange Project, Traffic Forecasts*, (Exhibit 2) indicate that building the project would not significantly increase traffic volumes on SR 242 between the Willow Pass Road and Concord Avenue interchanges, however, the addition of the new ramps at the SR 242 / Clayton Road interchange would reduce the traffic volumes on the southbound SR 242 / Concord Avenue off ramp and the northbound SR 242 / Concord Avenue on ramp. These changes would result in less congestion at ramp and local street intersections in the area.

Comments/Explanation/Details

The proposed project is within a nonattainment area for federal PM_{2.5} standards. Therefore, according to 40 CFR Part 93, a hotspot analysis is required for conformity purposes. However, EPA does not require hotspot analyses, qualitative or quantitative, for projects that are not listed in Section 93.123(b)(1) as a project of air quality concern (POAQC). Five types or categories of projects qualify as a POAQC. The following discussion evaluates whether the proposed project falls into any of these five POAQC categories.

The project not does qualify as a POAQC for the following reasons:

1. The project would not have a significant number of or increase in the number of diesel vehicles (40 CFR Section 93.123(b)(1)).

- ❖ Transportation conformity guidance coauthored by the EPA and FHWA define a significant volume of diesel truck traffic as facilities within greater than 125,000 annual average daily traffic (AADT) and 8 percent or more of such AADT as diesel truck traffic or approximately 10,000 trucks. The latest truck counts for SR 242 in the project vicinity show that truck traffic constitutes 5.0 percent of the total AADT, which is 103,910 AADT¹. The average daily number of trucks would be 5,196, well below the approximate 10,000 trucks stated above, although it is understood that EPA does not maintain a "threshold" value for truck AADT. Projects are evaluated on an individual basis and while the transportation conformity guidance identifies specific AADT levels, this does not imply that there is a bright line number (for air quality purposes).

Comments/Explanation/Details (continued)

- ❖ The percentage of trucks will remain the same with the project as without the project. The traffic volumes will increase due to growth in the area, but there will be no change in the truck percentages, and therefore, would not result in a significant increase in the number of diesel vehicles.

2. The project would not affect intersections that are at Level-of-Service (LOS) D, E, or F with a significant number of diesel vehicles, or would not change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project (40 CFR 93.123(b)(1)(ii)).

- ❖ As described above under "Describe potential traffic redistribution effects of congestion relief," the project would improve operations and would reduce congestion and delay at ramp and local street intersections within the project area, however, the project would not result in substantial redistribution of traffic or changes in the percentage of truck trips through the site.
- ❖ No intersections currently operating at LOS D or E under existing conditions would degrade under future project conditions; LOS would remain the same and/or improve.^{1 & 2}
- ❖ No intersections under existing or future project conditions operate at LOS F.^{1 & 2}

3. The project is not a new bus or rail terminal or transfer point (40 CFR Section 93.123(b)(1)(iii)).

- ❖ Not applicable.

4. The project is not an expansion of an existing bus or rail terminal or transfer point (40 CFR Section 93.123(b)(1)(iv)).

- ❖ Not applicable.

5. There is no state implementation plan for PM_{2.5}, and therefore, the project is not identified in an implementation plan as an area of potential violation (40 CFR Section 93.123(b)(1)(v)).

- ❖ On January 9, 2013, the U.S. EPA issued a final rule to determine that the San Francisco Bay Area has attained the 24-hour PM_{2.5} National Ambient Air Quality Standard (NAAQS). This action suspends the federal State Implementation Plan (SIP) provisions that apply to preparing an attainment plan to demonstrate how the Bay Area will attain the standard.

Therefore, the proposed project meets the Clean Air Act requirements and 40 CFR 93.116 without any explicit hotspot analysis. The proposed project would not create a new, or worsen an existing, PM_{2.5} violation.

Project Assessment Form for PM_{2.5} Interagency Consultation

Comments/Explanation/Details (*continued*)

References Cited:

¹Fehr and Peers, August 2014. Study Area ADT Forecasts and Daily LOS Summary for the SR 242/Clayton Road Interchange Project. (See Exhibit 1)

²Fehr and Peers, August 2014. Traffic Technical Memorandum for the SR 242/Clayton Road Interchange Project, Traffic Forecasts. (See Exhibit 2)

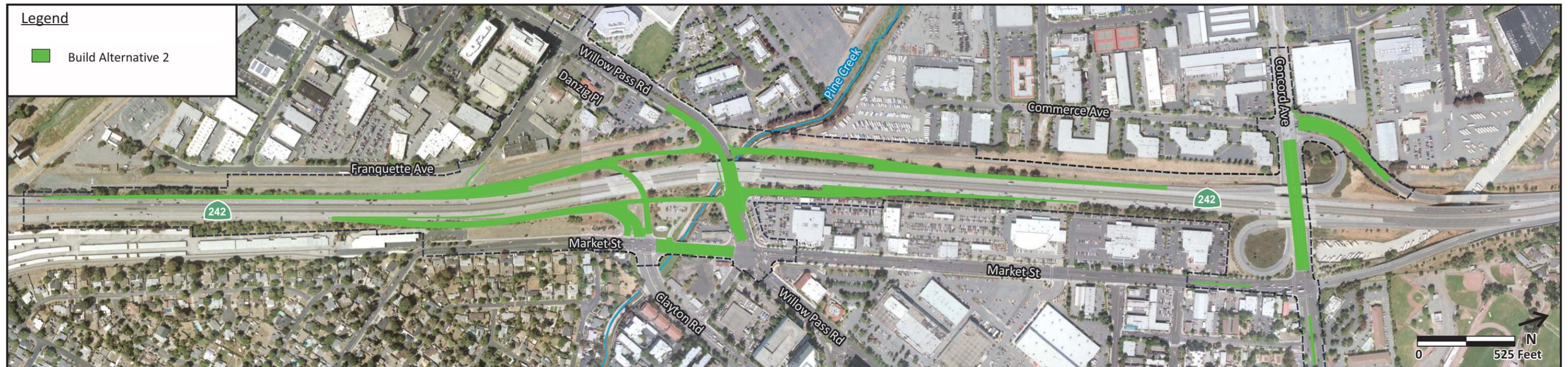


Legend

— Project Limits

Project Location Map

Figure



Project Build Alternatives Figure

Exhibit 1: Study Area ADT Forecasts and Daily LOS

SR 242/Clayton Road Interchange PA/ED - Study Area ADT Forecasts¹ and Daily LOS

Roadway	Reference Segment	Number of Lanes	Class	Capacity (vpd)	Existing			2020 - No Project			2020 - Alternative 1			2020 - Alternative 2		
					ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS
SR 242	North of Concord Ave Interchange	6	Freeway	132,000	103,910	0.79	D	110,670	0.84	D	110,670	0.84	D	110,670	0.84	D
Clayton Road	East of Market Street	6	Arterial	54,000	27,030	0.50	C	28,330	0.52	C	32,330	0.60	C	28,560	0.53	C
Market Street	South of Concord Avenue	4	Arterial	36,000	20,130	0.56	C	20,890	0.58	C	17,000	0.47	C	17,890	0.50	C
Willow Pass Road	East of Market Street	6	Arterial	54,000	26,340	0.49	C	27,440	0.51	C	28,330	0.52	C	32,110	0.59	C
Concord Avenue	East of Market Street	6	Arterial	54,000	33,520	0.62	C	36,110	0.67	D	30,220	0.56	C	30,220	0.56	C

Roadway	Reference Segment	Number of Lanes	Class	Capacity (vpd)	2040 - No Project			2040 - Alternative 1			2040 - Alternative 2		
					ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS
SR 242	North of Concord Ave Interchange	6	Freeway	132,000	129,330	0.98	E	129,330	0.98	E	129,330	0.98	E
Clayton Road	East of Market Street	6	Arterial	54,000	30,670	0.57	C	34,780	0.64	C	30,890	0.57	C
Market Street	South of Concord Avenue	4	Arterial	36,000	22,330	0.62	C	18,000	0.50	C	18,890	0.52	C
Willow Pass Road	East of Market Street	6	Arterial	54,000	29,670	0.55	C	30,780	0.57	C	34,670	0.64	C
Concord Avenue	East of Market Street	6	Arterial	54,000	42,670	0.79	E	36,110	0.67	D	36,110	0.67	D

Notes:

1. ADT forecasts estimated by applying a 9% daily factor to peak hour forecasts. The factor was derived by estimating a study area peak hour factor based on Caltrans census data for the SR 242 study corridor.

Source: Fehr & Peers, August 2014.

Total Truck Percentage:	5%
Heavy Truck Percentage:	2%

Source: Caltrans Census Count Database

LOS Thresholds - Freeways	
LOS	V/C Ratio
A	0.30
B	0.49
C	0.71
D	0.88
E	1.00
F	>1.00

Source: Highway Capacity Manual

LOS Thresholds - Arterials	
LOS	V/C Ratio
A	0.28
B	0.47
C	0.66
D	0.79
E	1.00
F	>1.00

Source: Highway Capacity Manual