AIR QUALITY STUDY

I-5 HOV AND TRUCK LANES PROJECT

$PM_{2.5}$ AND PM_{10} ANALYSES

07- LA-5 P.M. R45.4/R59.0
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INTRODUCTION

LSA Associates, Inc. (LSA) prepared this Air Quality Technical Addendum for the Interstate 5 (I-5) High Occupancy Vehicle (HOV) and Truck Climbing Lane project in response to the United States Environmental Protection Agency (EPA) releasing new $PM_{2.5}$[1] and PM_{10}[2] hot-spot analysis requirements in its March 10, 2006, final transportation conformity rule (71 FR 12468) (Final Rule). The 2006 Final Rule supersedes the Federal Highway Administration's (FHWA) September 12, 2001, "Guidance for Qualitative Project-Level Hotspot Analysis in PM_{10} Nonattainment and Maintenance Areas." This technical addendum was conducted following the procedures and methodology provided in the "Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas" (EPA/FHWA Guidance) (EPA, 2006a) developed by the EPA and the FHWA.

This $PM_{2.5}$ and PM_{10} analysis addresses the construction of the proposed project, including the following components identified in the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP): Project ID: LAE0465, In L.A./Santa Clarita on Route 5 from State Route 14 to Parker Road, HOV and Truck Lane Improvement.

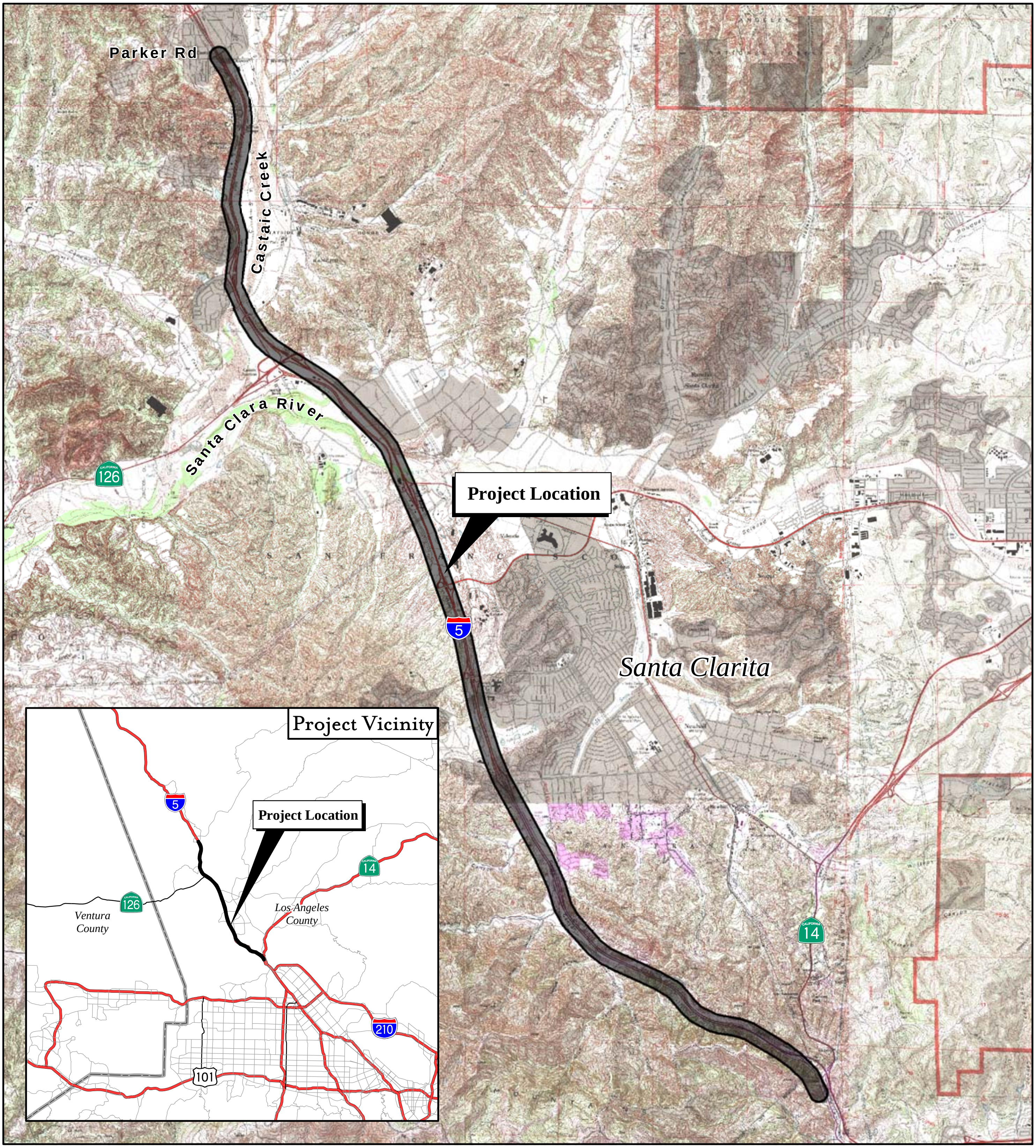
PROJECT LOCATION AND DESCRIPTION

The project is located in Los Angeles County on I-5 from State Route 14 (SR-14) on the south to Parker Road on the north and covers a distance of approximately 13.6 miles (mi). Within the limits of the proposed project, I-5 currently provides generally four mixed-flow lanes in each direction, with the exception of through the midpoint of the I-5/SR-14 interchange, where there are three mixed-flow lanes in each direction. Two truck lanes in each direction pass through the I-5/SR-14 interchange area, separated from the mainline freeway. The project segment of I-5 crosses the city of Santa Clarita, the unincorporated community of Castaic, and other parts of unincorporated northern Los Angeles County. The project location is shown on Figure 1.

This project proposes extending the HOV lanes on I-5 from the SR-14 interchange to just south of the Parker Road/I-5 interchange, incorporating truck climbing lanes from the SR-14 interchange to Pico Canyon Road/Lyons Avenue and constructing and/or extending auxiliary lanes between intersections at six locations. Three alternatives, including the No Build Alternative, are analyzed as part of the environmental document (ED). The project is being evaluated in three segments. Segment 1 extends from the I-5/SR-14 interchange to north of the Pico Canyon Road/Lyons Avenue/I-5 interchange. Segment 2 extends from north of the Pico Canyon Road/Lyons Avenue/I-5 interchange to north of the SR-126 interchange. Segment 3 extends from north of State Route 126 (SR-126) to south of Parker Road.

- Alternative 1 is the "No-Build" Alternative. This alternative would maintain the current configuration of the existing freeway. The HOV and truck lanes would not be constructed, and the congestion in this segment would not be alleviated. This situation would deteriorate with time.
- Alternative 2 is the "Reduced Median" Alternative. Alternative 2 proposes to add one HOV lane along I-5 in each direction from the I-5/SR-14 interchange to approximately 0.5 mi south of the

[1] Particulate matter less than 2.5 microns in diameter.
[2] Particulate matter less than 10 microns in diameter.



LSA

FIGURE 1

LEGEND

Project Location

0 3,750 7,500 Feet

I-5 Truck/HOV Lanes

Project Location Map

SOURCE: USGS 7.5' QUAD, CALIF.

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Parker Road/I-5 interchange. Alternative 2 also proposes to add one northbound truck lane from north of the I-5/SR-14 interchange near Weldon Canyon up to the Calgrove Boulevard/I-5 interchange. Southbound truck climbing lanes are proposed between Weldon Canyon Road and Calgrove Boulevard (two truck lanes) and Calgrove Boulevard to the Pico Canyon Road/Lyons Boulevard interchange (one truck lane). Alternative 2 proposes adding and/or extending auxiliary lanes in the northbound direction from SR-14 to the northbound truck lane merge, from Calgrove Boulevard to Pico Canyon Road/Lyons Avenue, and from Valencia Boulevard to Magic Mountain Parkway and in the southbound direction from McBean Parkway to Valencia Boulevard, from Magic Mountain Parkway to Rye Canyon Road, and from Rye Canyon Road to SR-126. The "Reduced Median" Alternative proposes to construct improvements within the existing State right of way (ROW), with the exception of new ROW for obtaining standard stopping sight distance. All lane and shoulder widths in Alternative 2 would be designed to standard widths of 12 and 10 feet (ft), respectively. The median width (48 ft) is nonstandard and would not provide for a continuous California Highway Patrol (CHP) enforcement area.

- Alternative 3 is the "Full Median" Alternative. Alternative 3 proposes the same improvements as Alternative 2; however, Alternative 3 proposes to provide a standard 62 ft wide median and a continuous CHP enforcement area.

The purpose of the proposed I-5 project is to:

- Reduce delays to vehicles caused by slower-moving trucks through the hilly southern portion of this segment of I-5.
- Improve operational and safety design features to facilitate the movement of people, freight, and goods on the project segment.
- Reduce existing and forecast traffic congestion on the project segment of I-5 to accommodate planned growth within the study area.

$PM_{2.5}$ AND PM_{10} HOT-SPOT METHODOLOGY

The new Final Rule establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in $PM_{2.5}$ and PM_{10} nonattainment and maintenance areas. The proposed project is in the South Coast Air Basin (Basin), which has been designated as a federal nonattainment area for $PM_{2.5}$ and PM_{10}; therefore, a hot-spot analysis is required.

A hot-spot analysis is defined in the Code of Federal Regulations (CFR) (40 CFR 93.101) as an estimation of likely future localized pollutant concentrations and a comparison of those concentrations to the relevant air quality standards. A hot-spot analysis assesses the air quality impacts on a scale smaller than an entire nonattainment or maintenance area, such as for congested roadway intersections and highways or transit terminals. Such an analysis is a means of demonstrating that a transportation project meets Clean Air Act (CAA) conformity requirements to support State and local air quality goals with respect to potential localized air quality impacts. When a hot-spot analysis is required, it is included within the project-level conformity determination that is made by the FHWA or the Federal Transit Administration (FTA).

Section 176(c)(1)(B) of the CAA is the statutory criterion that must be met by all projects in nonattainment and maintenance areas that are subject to transportation conformity. Section 176(c)(1)(B) states that federally supported transportation projects must not "cause or contribute to any new violation of any standard in any area; increase the frequency or severity of any existing violation of any standard in any area; or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area."

Ambient Air Quality Standards

$PM_{2.5}$ nonattainment and maintenance areas are required to attain and maintain two ambient air quality standards (AAQS):

- **24-hour Standard:** 65 micrograms per cubic meter (μg/m^3). Based on 2004–2006 monitored data, the EPA tightened the $PM_{2.5}$ 24-hour standard from 65 to 35 μg/m^3, effective December 2006. New area designations will become effective in early 2010 (EPA, 2006). Therefore, the current standard for conformity purposes is 65 μg/m^3.
- **Annual Standard:** 15.0 μg/m^3

The current 24-hour standard is based on a three-year average of the 98th percentile of 24-hour $PM_{2.5}$ concentrations. The current annual standard is based on a three-year average of annual mean $PM_{2.5}$ concentrations. A $PM_{2.5}$ hot-spot analysis must consider both standards unless it is determined for a given area in which meeting the controlling standard would ensure that CAA requirements are met for both standards. The interagency consultation process should be used to discuss how the qualitative $PM_{2.5}$ hot-spot analysis meets statutory and regulatory requirements for both $PM_{2.5}$ standards, depending on the factors that are evaluated for a given project.

PM_{10} nonattainment and maintenance areas are required to attain the following standard:

- **24-hour Standard:** 150 μg/m^3

The 24-hour PM_{10} standard is attained when the average number of exceedances in the previous three calendar years is less than or equal to 1.0. An exceedance occurs when a 24-hour concentration of 155 μg/m^3 or greater is measured at a site. The annual PM_{10} standard of 50 μg/m^3 is no longer used for determining the federal attainment status. The interagency consultation process should be used to discuss how the qualitative PM_{10} hot-spot analysis meets statutory and regulatory requirements for the PM_{10} standards, depending on the factors that are evaluated for a given project.

To meet statutory requirements, the 2006 Final Rule requires $PM_{2.5}$ and PM_{10} hot-spot analyses to be performed for Projects of Air Quality Concern (POAQC). The Final Rule states that projects not identified in 40 CFR 93.123(b)(1) as POAQC have met statutory requirements without any further hot-spot analyses (40 CFR 93.116[a]).

$PM_{2.5}$ AND PM_{10} HOT-SPOT ANALYSIS

Projects of Air Quality Concern

The first step in the hot-spot analysis is to determine whether a project meets the standard for a POAQC. The EPA specified in 40 CFR 93.123(b)(1) of the 2006 Final Rule that POAQC are certain highway and transit projects that involve significant levels of diesel vehicle traffic, or any other project that is identified in the $PM_{2.5}$ and PM_{10} State Implementation Plan (SIP) as a localized air quality concern. The 2006 Final Rule defines the POAQC that require a $PM_{2.5}$ and PM_{10} hot-spot analysis in 40 CFR 93.123(b)(1) as:

i. New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;

ii. Projects affecting intersections that are at level of service (LOS) D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;

iii. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;

iv. Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; or

v. Projects in or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ and PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The proposed project would meet the criteria in Items i above, as it would expand an existing facility that has a significant number of diesel vehicles. Therefore, this project is considered to be a POAQC, and a qualitative project-level $PM_{2.5}$ and PM_{10} hot-spot analysis has been conducted to assess whether the project would cause or contribute to any new localized $PM_{2.5}$ or PM_{10} violations, increase the frequency or severity of any existing violations, or delay timely attainment of the $PM_{2.5}$ and PM_{10} AAQS.

Types of Emissions Considered

In accordance with the EPA/FHWA Guidance, this hot-spot analysis is based on directly emitted and re-entrained $PM_{2.5}$ and PM_{10} emissions. Tailpipe, brake wear, tire wear, and road dust $PM_{2.5}$ and PM_{10} emissions were considered in this hot-spot analysis.

Vehicles cause dust from paved and unpaved roads to be re-entrained, or resuspended, in the atmosphere. According to the 2006 Final Rule, road dust emissions are to be considered for PM_{10} hot-spot analyses. For $PM_{2.5}$, road dust emissions are only to be considered in hot-spot analyses if the EPA or the State air agency has made a finding that such emissions are a significant contributor to the $PM_{2.5}$ air quality problem (40 CFR 93.102(b)(3)). The EPA has published a guidance on the use of AP-42 for re-entrained road dust for SIP development and conformity (August 2007); therefore, re-entrained $PM_{2.5}$ is considered in this analysis.

Secondary particles formed through $PM_{2.5}$ and PM_{10} precursor emissions from a transportation project take several hours to form in the atmosphere, giving emissions time to disperse beyond the immediate project area of concern for localized analyses; therefore, they were not considered in this hot-spot analysis. Secondary emissions of $PM_{2.5}$ and PM_{10} are considered as part of the regional emission analysis prepared for the conforming RTP and Federal Transportation Improvement Program (FTIP).

According to the project schedule, no phase of construction would last more than five years, and construction-related emissions may be considered temporary; therefore, any construction-related $PM_{2.5}$ and PM_{10} emissions due to this project were not included in this hot-spot analysis. This project will comply with the South Coast Air Quality Management District (SCAQMD) Fugitive Dust Rules for fugitive dust during construction of this project. In addition, per Transportation Conformity Rule 93.117, the project will be required to comply with any $PM_{2.5}$ and PM_{10} control measures in the SIP. Excavation, transportation, placement, and handling of excavated soils will result in no visible dust migration. A water truck or tank will be available within the project limits at all times to suppress and control the migration of fugitive dust from earthwork operations.

Analysis Method

According to hot-spot methodology, estimates of future localized $PM_{2.5}$ and PM_{10} pollutant concentrations need to be determined. This analysis makes those estimates by extrapolating present $PM_{2.5}$ and PM_{10} pollutant concentrations from air quality data measured at monitoring stations in the vicinity of the proposed project. The data from these stations are combined with projections from the 2003 and 2007 Air Quality Management Plans (AQMP) prepared by the SCAQMD and examined for trends in order to predict future conditions in the project vicinity. Additionally, the impacts of the project and the likelihood of these impacts interacting with the ambient $PM_{2.5}$ and PM_{10} levels to cause hot spots are discussed.

Data Considered

The closest air monitoring stations to the project site are the Santa Clarita and Burbank Stations. Of these monitoring stations, the Burbank Station monitors $PM_{2.5}$ concentrations. The Santa Clarita and Burbank Stations monitor PM_{10} concentrations. These monitoring stations are located within 1500 feet to two miles from I-5. The existing truck volumes along I-5 within vicinity of these monitoring stations vary from 18,250 to 18,500 daily trips (3+ axles), similar to the 17,300 to 19,100 daily truck trips along I-5 within the project area. Therefore, the air quality concentrations monitored at this station are representative of the conditions within the project area.

Trends in Baseline $PM_{2.5}$ Emission Concentrations. The monitored $PM_{2.5}$ concentrations at the Burbank Station are shown in Table A. This data shows that, within the past five years, the federal 24-hour $PM_{2.5}$ AAQS (65 $\mu g/m^3$) was not exceeded. The annual average $PM_{2.5}$ AAQS (15 $\mu g/m^3$) at this station was exceeded in all five years; however, the concentrations have been decreasing steadily.

Table A: Ambient $PM_{2.5}$ Monitoring Data (µg/m^3)

	2003	2004	2005	2006	2007
Burbank Air Quality Monitoring Station					
3-year average 98th percentile	61.3	54.7	53.3	47.7	48.0
Exceeds federal 24-hour standard (65 µg/m^3)?	No	No	No	No	No
3-year National annual average	23.6	21.7	19.7	17.8	16.4
Exceeds federal annual average standard (15 µg/m^3)?	Yes	Yes	Yes	Yes	Yes

Source: EPA Web site: http://www.epa.gov/air/data/monvals.html?st~CA~California, June 2008.

Projected 24-hour Concentrations. The current levels of $PM_{2.5}$ in the project vicinity are below the current federal 24-hour standard. Table V-2-16 in the 2007 AQMP estimates that the 24-hour $PM_{2.5}$ concentration at the Burbank station will be 47.7 µg/m^3 in 2015. This concentration would not exceed the current federal 24-hour standard of 65 µg/m^3.

Projected Annual Concentrations. While the current levels of $PM_{2.5}$ in the project vicinity are generally above the federal annual standard, indications are that levels in the future will continue to decrease. As shown in Table V-2-15c of the 2007 AQMP, the annual $PM_{2.5}$ concentration, with the ARB's emission reduction plan and the SCAQMD's emission reduction overlay, at the Burbank Station is projected to be 14.9 µg/m^3 in 2014. This concentration would not exceed the federal annual standard of 15 µg/m^3.

Trends in Baseline PM_{10} Emission Concentrations. The monitored PM_{10} concentrations at the Burbank Station, shown in Table B, indicate that the federal 24-hour PM_{10} AAQS (150 µg/m^3) was not exceeded between 2003 and 2007. The PM_{10} concentrations at the Santa Clarita Station exceeded the federal 24-hour PM_{10} standard once in 2007.

The 2007 AQMP (SCAQMD) reports that since the federal annual PM_{10} standard has been revoked, the Basin is expected to be declared in attainment for the 24-hour federal PM_{10} standard since 2000. Table V-3-1 of the 2007 AQMP lists the projected 24-hour PM_{10} concentrations at various stations

Table B: Ambient PM_{10} Monitoring Data (µg/m^3)

	2003	2004	2005	2006	2007
Santa Clarita Air Quality Monitoring Station					
First Highest	72	54	55	53	167
Second Highest	67	52	44	46	131
Third Highest	67	50	42	45	61
Fourth Highest	65	49	40	43	53
No. of days above national 24-hour standard (150 µg/m^3)	0	0	0	0	1
Burbank Quality Monitoring Station					
First Highest	81	74	92	71	109

Table B: Ambient PM_{10} Monitoring Data (µg/m^3)

	2003	2004	2005	2006	2007
Santa Clarita Air Quality Monitoring Station					
Second Highest	72	67	79	68	93
Third Highest	68	65	77	67	78
Fourth Highest	55	62	59	64	56
No. of days above national 24-hour standard (150 µg/m^3)	0	0	0	0	0

Source: ARB Web site: http://www.arb.ca.gov/adam/welcome.html, June 2008.

within the Basin. It is estimated that the 24-hour concentration at the Burbank Station will be 73 µg/m^3 by 2015 (49 percent of the federal standard).

Transportation and Traffic Conditions

Existing, interim (2015), and future (2030) no build average daily traffic (ADT) volumes and average daily truck volumes for I-5 in the project area are shown in Table C. Although truck volumes along I-5 remain relatively consistent, the truck percentages range from 10 to 27 percent due to the large change in ADT throughout the project area. The table indicates that I-5 currently experiences more than 10,000 trucks annual average daily traffic (AADT).

Table D lists the existing condition level of service (LOS) summary for the northbound and southbound I-5 freeway segments. As shown, the LOS conditions currently vary from LOS A near Parker Road to LOS F between Calgrove Road and the Truck Route Bypass along southbound I-5.

Traffic Changes Due to the Proposed Project

The proposed project is a highway improvement project that will increase the capacity of I-5 through the addition of a truck climbing land and a HOV lane. Based on the Traffic Study (Austin-Foust Associates, Inc., May 2008), the proposed project would increase the peak hour volumes along I-5 but would not increase the daily traffic volumes. This is due to there being few alternative routes to I-5 within the project vicinity. All travel into and out of North Los Angeles County has to go through the Newhall Pass. Since there are no alternatives, traffic has to utilize the I-5 freeway regardless of how bad congestion is. The future traffic volumes for the 2015 Interim Conditions and the 2030 Conditions are shown in Tables E and F, respectively.

Table C: Existing and No Build Average Daily Traffic Volumes (Truck Average Daily Volumes)

Roadway Link	Existing (2006)	2015 No Build	2030 No Build
North of Parker	65,000 (17,300)	137,000 (20,600)	207,000 (31,000)
Between Parker & Hasley Canyon	83,000 (17,300)	163,000 (21,200)	240,000 (28,900)
Between Hasley Canyon & SR-126	100,000 (17,300)	179,000 (21,500)	251,000 (26,200)
Between SR-126 & Rye Canyon	124,000 (18,900)	171,000 (20,600)	234,000 (24,600)
Between Rye Canyon & Magic Mountain	134,000 (19,000)	191,000 (22,900)	255,000 (26,800)
Between Magic Mountain & Valencia	156,000 (18,900)	203,000 (23,200)	263,000 (27,700)
Between Valencia & McBean	179,000 (19,000)	216,000 (22,700)	268,000 (28,200)
Between McBean & Lyons/Pico Canyon	189,000 (19,100)	226,000 (22,800)	283,000 (27,000)
Between Lyons/Pico Canyon & Calgrove	199,000 (19,000)	220,000 (20,900)	281,000 (26,700)
Between Calgrove & SR-14	202,000 (19,000)	229,000 (21,500)	290,000 (27,4000

Source: Austin-Foust Associates, Inc., May 2008.

Table D: Existing Conditions LOS Summary

I-5 Segment	A.M. Peak Hour			P.M. Peak Hour		
	Speed	Density	LOS	Speed	Density	LOS
Northbound						
Lake Hughes to Parker	70.0	5.2	A	70.0	9.9	A
Parker to Hasley Canyon	70.0	6.7	A	70.0	11.9	B
Hasley Canyon to SR-126	70.0	13.1	B	70.0	17.2	B
SR-126 to Rye Canyon	70.0	13.9	B	70.0	17.0	B
Rye Canyon to Magic Mountain	70.0	13.9	B	70.0	16.9	B
Magic Mountain to Valencia	70.0	18.4	C	68.5	25.4	C
Valencia to McBean	69.6	22.3	C	68.5	25.3	C
McBean to Pico	69.1	24.0	C	65.4	30.2	D
Pico to Calgrove	69.4	23.1	C	64.9	30.8	D
Calgrove to Truck Route Bypass	69.5	22.9	C	65.3	30.3	D
Truck Route Bypass to SR-14 On-Ramp	69.9	20.5	C	63.3	32.8	D
SR-14 On-Ramp to Balboa	70.0	18.3	C	68.0	26.2	D
Southbound						
Lake Hughes to Parker	70.0	7.0	A	70.0	8.9	A
Parker to Hasley Canyon	70.0	9.5	A	70.0	10.4	A
Hasley Canyon to SR-126	70.0	9.1	A	70.0	12.7	B
SR-126 to Rye Canyon	70.0	14.2	B	70.0	17.3	B
Rye Canyon to Magic Mountain	70.0	17.4	B	69.6	22.3	C
Magic Mountain to Valencia	70.0	19.5	C	68.8	24.7	C
Valencia to McBean	69.1	24.1	C	64.7	31.1	D
McBean to Pico	69.3	23.6	C	67.4	27.2	D
Pico to Calgrove	61.1	35.5	E	58.6	38.3	E
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 On-Ramp	70.0	19.3	C	70.0	19.6	C
SR-14 On-Ramp to Balboa	70.0	24.7	C	69.3	23.4	C

Source: Austin-Foust Associates, Inc., May 2008.

Note: Density = vehicles per mile per lane.

Table E: 2015 with Project Daily Traffic Volumes (Truck Average Daily Volumes)

Roadway Link	2015 Build	Change from No Build
North of Parker	137,000 (20,600)	0 (0)
Between Parker & Hasley Canyon	163,000 (21,200)	0 (0)
Between Hasley Canyon & SR-126	179,000 (21,500)	0 (0)
Between SR-126 & Rye Canyon	171,000 (20,600)	0 (0)
Between Rye Canyon & Magic Mountain	191,000 (22,900)	0 (0)
Between Magic Mountain & Valencia	203,000 (23,200)	0 (0)
Between Valencia & McBean	216,000 (22,700)	0 (0)
Between McBean & Lyons/Pico Canyon	226,000 (22,800)	0 (0)
Between Lyons/Pico Canyon & Calgrove	220,000 (20,800)	0 (0)
Between Calgrove & SR-14	229,000 (21,600)	0 (0)

Source: Austin-Foust Associates, Inc., May 2008.

Table F: 2030 with Project Daily Traffic Volumes (Truck Average Daily Volumes)

Roadway Link	2030 Build Conditions	Change from No Build
North of Parker	207,000 (31,000)	0 (0)
Between Parker & Hasley Canyon	240,000 (28,900)	0 (0)
Between Hasley Canyon & SR-126	251,000 (26,200)	0 (0)
Between SR-126 & Rye Canyon	234,000 (24,600)	0 (0)
Between Rye Canyon & Magic Mountain	255,000 (26,800)	0 (0)
Between Magic Mountain & Valencia	263,000 (27,700)	0 (0)
Between Valencia & McBean	268,000 (28,200)	0 (0)
Between McBean & Lyons/Pico Canyon	283,000 (27,000)	0 (0)
Between Lyons/Pico Canyon & Calgrove	281,000 (26,900)	0 (0)
Between Calgrove & SR-14	290,000 (27,200)	0 (0)

Source: Austin-Foust Associates, Inc., May 2008.

Tables G and H show the 2015 Interim and 2030 Conditions levels of service (LOS) in the project area for the a.m. and p.m. peak hours. As shown, the proposed project would improve the LOS for the roadway segments within the project area.

Table G: 2015 LOS Summary

I-5 Segment	A.M. Peak Hour		P.M. Peak Hour	
	No Build LOS	Build LOS	No Build LOS	Build LOS
Northbound				
Lake Hughes to Parker	B	B	C	C
Parker to Hasley Canyon	B	A	C	C
Hasley Canyon to SR-126	C	B	D	C
SR-126 to Rye Canyon	C	C	C	C
Rye Canyon to Magic Mountain	C	C	C	C
Magic Mountain to Valencia	D	C	D	C
Valencia to McBean	D	C	D	C
McBean to Pico	D	C	D	C
Pico to Calgrove	D	C	D	C
Calgrove to Truck Route Bypass	C	B	D	C
Truck Route Bypass to SR-14 On-Ramp	C	B	C	B
SR-14 On-Ramp to Balboa	C	B	D	C
Southbound				
Lake Hughes to Parker	B	B	B	B
Parker to Hasley Canyon	C	B	C	B
Hasley Canyon to SR-126	C	B	D	B
SR-126 to Rye Canyon	C	B	D	B
Rye Canyon to Magic Mountain	C	B	E	B
Magic Mountain to Valencia	C	C	E	C
Valencia to McBean	D	B	F	B
McBean to Pico	C	C	E	C
Pico to Calgrove	E	C	F	C
Calgrove to Truck Route Bypass	F	C	F	C
Truck Route Bypass to SR-14 On-Ramp	C	B	D	B
SR-14 On-Ramp to Balboa	C	C	C	C

Source: Austin-Foust Associates, Inc., May 2008.

Table H: 2030 LOS Summary

I-5 Segment	A.M. Peak Hour		P.M. Peak Hour	
	No Build LOS	Build LOS	No Build LOS	Build LOS
Northbound				
Lake Hughes to Parker	B	B	D	D
Parker to Hasley Canyon	C	B	E	D
Hasley Canyon to SR-126	D	C	F	D
SR-126 to Rye Canyon	D	C	E	C
Rye Canyon to Magic Mountain	D	C	E	C
Magic Mountain to Valencia	D	C	E	D
Valencia to McBean	E	C	E	D
McBean to Pico	E	D	F	D
Pico to Calgrove	D	C	E	D
Calgrove to Truck Route Bypass	D	C	E	C
Truck Route Bypass to SR-14 On-Ramp	C	B	E	D
SR-14 On-Ramp to Balboa	C	B	D	C
Southbound				
Lake Hughes to Parker	C	C	D	D
Parker to Hasley Canyon	D	C	E	C
Hasley Canyon to SR-126	D	C	F	D
SR-126 to Rye Canyon	D	C	F	D
Rye Canyon to Magic Mountain	D	C	F	E
Magic Mountain to Valencia	E	D	F	E
Valencia to McBean	F	C	F	D
McBean to Pico	E	D	F	E
Pico to Calgrove	F	C	F	D
Calgrove to Truck Route Bypass	F	C	F	D
Truck Route Bypass to SR-14 On-Ramp	C	B	D	C
SR-14 On-Ramp to Balboa	D	C	E	C

Source: Austin-Foust Associates, Inc., May 2008.

Table I: Daily $PM_{2.5}$ Emissions (pounds per day)

Traffic Condition	Exhaust Emissions	Tire Wear	Brake Wear	Road Dust	Total	Change from No Build
Existing	164.5	13.1	23.6	1,417.9	1,619.1	-
2015 No Build	157.1	16.9	31.0	1,710.8	1,915.8	-
2015 Build	133.8	16.9	31.0	1,710.8	1,892.5	-23.3
2030 No Build	207.7	22.2	40.9	2,192.1	2,462.9	-
2030 Build	136.3	22.2	40.9	2,192.1	2,391.6	-71.3

Source: LSA Associates, Inc., June 2008.

Table J: Daily PM_{10} Emissions (pounds per day)

Traffic Condition	Exhaust Emissions	Tire Wear	Brake Wear	Road Dust	Total	Change from No Build
Existing	329.0	52.2	65.7	13,586.0	14,032.9	-
2015 No Build	245.6	67.3	85.5	16,826.6	17,225.0	-
2015 Build	221.9	67.3	85.5	16,826.6	17,201.3	-23.7
2030 No Build	242.2	88.9	112.8	21,783.1	22,227.0	-
2030 Build	173.8	88.9	112.8	21,783.1	22,158.6	-68.4

Source: LSA Associates, Inc., June 2008.

CONCLUSION

Transportation conformity is required under Section 176(c) of the CAA to ensure that federally supported highway and transit project activities are consistent with the purpose of the SIP. Conformity to the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant AAQS. As required by the 2006 Final Rule, this qualitative $PM_{2.5}$ and PM_{10} hot-spot analysis demonstrates that this project meets the CAA conformity requirements to support State and local air quality goals with respect to potential localized air quality impacts.

It is not expected that changes to $PM_{2.5}$ and PM_{10} emissions levels associated with the proposed project would result in new violations of the federal air quality standards for the following reasons:

- The proposed project would not increase the daily traffic volumes along I-5 within the project vicinity.
- The ambient PM_{10} concentrations exceeded the 24-hour federal standard once within the past five years and is project to be 49 percent of the federal standard by 2015.
- Based on the local monitoring data, the 24-hour and annual average $PM_{2.5}$ concentrations within the project area would be reduced to below the federal standard by 2015.
- By 2030 the roadway links within the proposed project area will be operating, during the p.m. peak hour, at LOS D through F without improvements. The proposed build alternatives would improve the LOS to C through F.
- The proposed project would reduce the total $PM_{2.5}$ and PM_{10} exhaust emissions generated along the proposed project alignment when compared to the no project conditions.

For these reasons, future new or worsened $PM_{2.5}$ and PM_{10} violations of any standards are not anticipated; therefore, the project meets the conformity hot-spot requirements in 40 CFR 93-116 and 93-123 for both $PM_{2.5}$ and PM_{10}.

REFERENCES

United States Environmental Protection Agency (EPA). 2006. "Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas" (EPA 420-B-06-902, March 2006).

United States Environmental Protection Agency (EPA). 2006. Final Revisions to the National Ambient Air Quality Standards for Particulate Pollution (Particulate Matter). EPA Web site: www.epa.gov/oar/particulatepollution/naaqsrev2006.html, accessed on March 19, 2007.

Austin-Foust Associates, Inc., I-5 PA&ED HOV & Truck Lanes – SR-14 to Parker Road, Traffic Study, May 2008.

APPENDIX A

$PM_{2.5}$ AND PM_{10} EMISSION CALCULATIONS

I-5 HOV/Truck Lane PM2.5 and PM10 Emissions

Existing Conditions

Segment	1	2	3	4	5	6	7	8	9	10	Total
Length	0.5	2.4	1.1	1.4	0.6	1.1	1.0	1.0	1.4	3.6	14.10
PM2.5 Exhaust	3.63	18.73	9.16	13.42	5.95	11.78	11.60	11.96	16.75	61.46	164.46
PM2.5 Tire Wear	0.24	1.36	0.72	1.11	0.51	1.05	1.07	1.13	1.65	4.29	13.12
PM2.5 Brake Wear	0.36	2.20	1.21	1.91	0.89	1.89	1.97	2.08	3.07	8.02	23.60
PM2.5 Road Dust	40.31	200.99	95.37	136.21	59.66	113.14	107.26	109.40	155.04	400.54	1417.92
PM10 Exhaust	9.10	45.04	21.24	29.97	12.97	23.64	21.74	22.09	30.71	112.53	329.04
PM10 Tire Wear	0.94	5.40	2.86	4.40	2.01	4.18	4.28	4.49	6.56	17.10	52.21
PM10 Brake Wear	1.07	6.40	3.47	5.41	2.49	5.26	5.44	5.73	8.42	21.97	65.68
PM10 Road Dust	331.47	1724.53	848.19	1243.17	552.93	1085.54	1060.60	1094.17	1571.36	4074.01	13585.97
Total PM2.5	44.53	223.28	106.47	152.65	67.00	127.87	121.90	124.57	176.51	474.31	1619.10
Total PM10	342.58	1781.36	875.76	1282.95	570.41	1118.62	1092.06	1126.48	1617.06	4225.61	14032.89

2015 No Build

Segment	1	2	3	4	5	6	7	8	9	10	Total
Length	0.5	2.4	1.1	1.4	0.6	1.1	1.0	1.0	1.4	3.6	14.10
PM2.5 Exhaust	3.73	20.31	9.92	12.05	5.80	10.90	10.73	10.67	14.09	58.85	157.05
PM2.5 Tire Wear	0.44	2.42	1.20	1.46	0.70	1.35	1.29	1.35	1.82	4.87	16.91
PM2.5 Brake Wear	0.76	4.31	2.17	2.64	1.26	2.46	2.38	2.49	3.40	9.09	30.96
PM2.5 Road Dust	53.18	271.89	129.00	157.19	74.98	141.09	128.52	130.66	170.81	453.51	1710.83
PM10 Exhaust	7.05	34.35	16.18	19.68	9.47	17.66	16.26	16.16	21.13	87.62	245.55
PM10 Tire Wear	1.73	9.64	4.79	5.83	2.79	5.39	5.15	5.36	7.25	19.38	67.31
PM10 Brake Wear	2.13	12.05	6.03	7.34	3.51	6.82	6.57	6.85	9.31	24.91	85.53
PM10 Road Dust	486.78	2567.81	1240.11	1510.06	721.11	1371.64	1273.76	1307.33	1733.25	4614.75	16826.60
Total PM2.5	58.10	298.94	142.30	173.34	82.75	155.80	142.92	145.17	190.11	526.31	1915.75
Total PM10	497.69	2623.86	1267.12	1542.91	736.88	1401.51	1301.74	1335.70	1770.95	4746.65	17225.00

2015 Build

Segment	1	2	3	4	5	6	7	8	9	10	Total
Length	0.5	2.4	1.1	1.4	0.6	1.1	1.0	1.0	1.4	3.6	14.10
PM2.5 Exhaust	3.73	20.11	9.70	11.95	5.76	10.99	10.19	10.37	14.24	36.69	133.75
PM2.5 Tire Wear	0.44	2.42	1.20	1.46	0.70	1.35	1.29	1.35	1.82	4.87	16.91
PM2.5 Brake Wear	0.76	4.31	2.17	2.64	1.26	2.46	2.38	2.49	3.40	9.09	30.96
PM2.5 Road Dust	53.18	271.89	129.00	157.19	74.98	141.09	128.52	130.66	170.81	453.51	1710.83
PM10 Exhaust	7.05	36.57	17.15	20.87	9.69	18.61	16.77	16.51	22.92	55.74	221.88
PM10 Tire Wear	1.73	9.64	4.79	5.83	2.79	5.39	5.15	5.36	7.25	19.38	67.31
PM10 Brake Wear	2.13	12.05	6.03	7.34	3.51	6.82	6.57	6.85	9.31	24.91	85.53
PM10 Road Dust	486.78	2567.81	1240.11	1510.06	721.11	1371.64	1273.76	1307.33	1733.25	4614.75	16826.60
Total PM2.5	58.10	298.74	142.08	173.24	82.71	155.90	142.39	144.87	190.27	504.15	1892.45
Total PM10	497.69	2626.07	1268.09	1544.10	737.10	1402.46	1302.25	1336.06	1772.74	4714.78	17201.32

2030 No Build

Segment	1	2	3	4	5	6	7	8	9	10	Total
Length	0.5	2.4	1.1	1.4	0.6	1.1	1.0	1.0	1.4	3.6	14.10
PM2.5 Exhaust	4.22	23.03	11.80	12.98	6.21	12.59	13.09	12.71	17.00	94.07	207.68
PM2.5 Tire Wear	0.66	3.52	1.65	1.96	0.92	1.73	1.61	1.67	2.33	6.17	22.22
PM2.5 Brake Wear	1.14	6.35	3.04	3.61	1.69	3.19	2.95	3.12	4.34	11.51	40.94
PM2.5 Road Dust	80.10	378.08	163.49	194.97	91.04	172.40	159.60	157.40	218.20	576.81	2192.09
PM10 Exhaust	5.58	28.76	14.34	16.20	7.53	14.96	15.43	14.78	19.84	104.80	242.21
PM10 Tire Wear	2.63	14.09	6.61	7.85	3.67	6.94	6.43	6.70	9.30	24.67	88.90
PM10 Brake Wear	3.22	17.65	8.39	9.96	4.65	8.80	8.15	8.56	11.89	31.55	112.82
PM10 Road Dust	733.82	3632.45	1622.93	1932.18	902.27	1707.79	1581.34	1595.64	2214.03	5860.63	21783.07
Total PM2.5	86.12	410.98	179.99	213.52	99.85	189.91	177.25	174.90	241.85	688.55	2462.94
Total PM10	745.26	3692.95	1652.27	1966.19	918.11	1738.48	1611.35	1625.67	2255.06	6021.66	22227.00

2030 Build

Segment	1	2	3	4	5	6	7	8	9	10	Total
Length	0.5	2.4	1.1	1.4	0.6	1.1	1.0	1.0	1.4	3.6	14.10
PM2.5 Exhaust	4.22	21.39	10.32	12.32	5.71	11.10	9.93	10.15	13.98	37.18	136.29
PM2.5 Tire Wear	0.66	3.52	1.65	1.96	0.92	1.73	1.61	1.67	2.33	6.17	22.22
PM2.5 Brake Wear	1.14	6.35	3.04	3.61	1.69	3.19	2.95	3.12	4.34	11.51	40.94
PM2.5 Road Dust	80.10	378.08	163.49	194.97	91.04	172.40	159.60	157.40	218.20	576.81	2192.09
PM10 Exhaust	5.58	28.57	13.28	15.91	7.29	14.26	12.67	12.49	18.22	45.54	173.82
PM10 Tire Wear	2.63	14.09	6.61	7.85	3.67	6.94	6.43	6.70	9.30	24.67	88.90
PM10 Brake Wear	3.22	17.65	8.39	9.96	4.65	8.80	8.15	8.56	11.89	31.55	112.82
PM10 Road Dust	733.82	3632.45	1622.93	1932.18	902.27	1707.79	1581.34	1595.64	2214.03	5860.63	21783.07
Total PM2.5	86.12	409.34	178.51	212.86	99.35	188.42	174.09	172.34	238.84	631.66	2391.55
Total PM10	745.26	3692.76	1651.22	1965.90	917.88	1737.79	1608.58	1623.38	2253.44	5962.40	22158.60