AIR QUALITY IMPACT ASSESSMENT

STATE ROUTE 85 EXPRESS LANES PROJECT, SANTA CLARA COUNTY, CALIFORNIA

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Acronyms

AB	Assembly Bill
ABAG	Association of Bay Area Governments
BAAQMD	Bay Area Air Quality Management District
BACT	Best available control technology
BARCT	Best Available Retrofit Control Technology
BMP	Best Management Practice
CAA	Federal Clean Air Act
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
CALINE4	California Line Source Model
Caltrans	California Department of Transportation
CAP	Bay Area Clean Air Plan
CARB	California Air Resources Board
CAFÉ	Corporate Average Fuel Economy
CCAA	California Clean Air Act
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CIDH	cast-in-drilled-hole
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DMS	dynamic message sign
EMFAC	Emission Factor Model
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	Greenhouse gas
HFC	hydrofluorocarbons
HOV	High-Occupancy Vehicle
I-280	Interstate 280
ITS	Intelligent Transportation Systems
LOS	Level of service

Acronyms, cont.

$\mu g/m^3$	Microgram per cubic meter
MMT	million metric tons
MT/yr	metric tons per year
mpg	Miles per gallon
mph	Miles per hour
MPO	metropolitan planning organization
MTC	Metropolitan Transportation Commission
MSAT	Mobile Source Air Toxics
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Traffic Safety Administration
NEPA	National Environmental Policy Act
NHTSA	National Highway Traffic Administration
NOAA	National Oceanic and Atmospheric Administration
NO_x	Nitrogen oxides
O_3	Ozone
OPR	Office of Planning and Research
OSTP	Office of Science and Technology Policy
PFC	perfluorocarbons
PM_{10}	Particulate matter less than 10 micrometers in diameter
$PM_{2.5}$	Particulate matter less than 2.5 micrometers in diameter
PM	Post Mile
POAQC	Project of Air Quality Concern
POM	polycyclic organic matter
ppm	Parts per million
PS&E	Plans, Specifications, and Estimates
PSR	Project Study Report
project	State Route 85 Express Lanes Project
ROG	Reactive organic gases
RTP	Regional Transportation Plan
SB	Senate Bill
SCS	Sustainable Communities Strategies

Acronyms, cont.

SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SIP	State Implementation Plan
SOV	Single Occupancy Vehicle
SO_x	Sulfur oxides
SR	State Route
TACs	Toxic air contaminants
TCM	Transportation Control Measure
TIP	Transportation Improvement Program
TOS	Traffic Operations Systems
US 101	United States Highway 101
USC	United States Code
USEPA	United States Environmental Protection Agency
VTA	Santa Clara Valley Transportation Authority

This report examines the effects of the proposed State Route (SR) 85 Express Lanes Project (project) in the context of the primary pollutants of concern associated with motor vehicles: ozone (O_3), carbon monoxide (CO), particulate matter ($PM_{2.5}$ and PM_{10}), and greenhouse gases (GHGs). Much of the degradation of ambient air quality in the San Francisco Bay Area Air Basin (SFBAAB) is due to emissions from mobile sources. The basin is in nonattainment for the federal and state O_3 standards; attainment for the federal and state CO standards; and nonattainment for the federal and state $PM_{2.5}$ standards. The area is unclassified for the federal and in nonattainment for the state PM_{10} standard.

This *Air Quality Impact Assessment* is intended to support the study requirements for the project to comply with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and has been prepared pursuant to the University of California, Davis, *Transportation Project-Level Carbon Monoxide Protocol* (Garza, Graney, and Sperling 1997) and California Department of Transportation (Caltrans) guidelines.

PROJECT DESCRIPTION

The California Department of Transportation (Department), in cooperation with the Santa Clara Valley Transportation Authority (VTA), proposes to convert the existing High-Occupancy Vehicle (HOV) lanes on SR 85 to express lanes. The conversion would allow single-occupant vehicles (SOVs) to pay a toll to use the lanes. HOVs would continue to use the lanes for free. The express lanes would be implemented on northbound and southbound SR 85 from United States Highway 101 (US 101) in southern San Jose to US 101 in Mountain View in Santa Clara County. The project would include the continuation of the express lanes for 3.3 miles on US 101 in southern San Jose. The total project length is 33.7 miles.

ENVIRONMENTAL CONSEQUENCES

The project would not conflict with or obstruct implementation of the applicable air quality plan and would meet all transportation conformity requirements. The project is listed in the 2009 Santa Clara Valley Transportation Plan 2035 (VTA 2009) as VTP ID H1 and in the Metropolitan Transportation Commission's (MTC's) Regional Transportation Plan (RTP), *Plan Bay Area* (Association of Bay Area Governments [ABAG] and MTC 2013), as RTP Reference Number 240439. The project is also included in the 2013 Transportation Improvement Program (TIP), which was adopted by MTC on July 18, 2013 (TIP ID No. SCL090030). Under Title 40, Code of Federal Regulations Part 93, the project was found to be in conformance with the State Implementation Plan (SIP). The project will not otherwise interfere with timely implementation of any Transportation Control Measure (TCM) in the applicable SIP.

The UC Davis *Transportation Project-Level Carbon Monoxide Protocol* criteria (Garza, Graney, and Sperling 1997) were used to evaluate the potential local impacts of the project, as recommended by Caltrans guidelines. Comparison of the No Build and Build Alternatives according to the protocol criteria, including level of service (LOS) and increased traffic volumes, provides a basis for determining if the changes in emissions are acceptable. CALINE4 modeling indicated that the project would not result in localized violations of CO standards.

Mobile Source Air Toxics (MSATs) are addressed in a separate document (URS 2013a).

The Bay Area Air Quality Management District (BAAQMD) considers construction activities to be typically short-term or temporary in duration; however, project-generated emissions could represent a significant impact with respect to air quality. Therefore, BAAQMD requires construction emissions for projects to be quantified and compared to significance thresholds. The proposed project's construction-related emissions would be below the BAAQMD CEQA thresholds of significance for construction-related activities.

The BAAQMD CEQA guidelines also require a quantitative analysis of operational GHG emissions. Although the vehicle miles traveled per day and per year for the project horizon year would increase for the Build scenario compared to the No Build scenario, the average speeds would also increase for the Build scenario. The project would therefore result in a decrease in future operational CO_2 emissions compared to than the No Build scenario.

Project construction would last approximately 1.5 years. Caltrans Special Provisions and Standard Specifications will include the requirement to minimize or eliminate dust through the application of water or dust palliatives. Implementation of additional measures will be considered during development of the project's Plans, Specifications, and Estimates (PS&E). The BAAQMD considers any project's construction-related fugitive dust and exhaust emission impacts to be less than significant if the appropriate dust- and combustion-control measures are implemented.

1.1 PROJECT DESCRIPTION

1.1.1 Introduction

The California Department of Transportation (Department), in cooperation with the Santa Clara Valley Transportation Authority (VTA), proposes to convert the existing High-Occupancy Vehicle (HOV) lanes on State Route (SR) 85 to High-Occupancy Toll (HOT) lanes (hereafter known as express lanes). The conversion would allow single-occupant vehicles (SOVs) to pay a toll to use the lanes. HOVs would continue to use the lanes for free. The express lanes would be implemented on northbound and southbound SR 85 from United States Highway 101 (US 101) in southern San Jose to US 101 in Mountain View in Santa Clara County (see Figures 1 and 2). The project would also include the continuation of the express lanes for 3.3 miles on US 101 in southern San Jose. The total project length is 33.7 miles.

The purpose of the project is to manage traffic congestion in the most congested HOV segments of the freeway between SR 87 and I-280, and maintain consistency with provisions defined in Assembly Bill (AB) 2032 (2004) and AB 574 (2007) to implement express lanes in an HOV lane system in Santa Clara County.

SR 85 is a 24.1-mile long freeway that connects Mountain View to southern San Jose. SR 85 passes through Mountain View, Los Altos, Sunnyvale, Cupertino, Saratoga, Los Gatos, Campbell, and San Jose. SR 85 also intersects with SR 237, Interstate 280 (I-280), SR 17, and SR 87. Trucks over 9,000 pounds are prohibited on SR 85 between US 101 and I-280, except for maintenance and emergency vehicles, buses, and recreational vehicles. SR 85 typically has three lanes in each direction: two general purpose (mixed flow) lanes and one HOV lane.

The project limits include the entire 24.1-mile length of SR 85, 4.1 miles of US 101 in Mountain View, and 5.5 miles of US 101 in southern San Jose, for a total of 33.7 miles. The express lanes would be implemented on SR 85 and a 3.3-mile segment of US 101 in San Jose. In the 4.1-mile segment of US 101 in Mountain View, the project would add striping and signs but would not widen the roadway or change system or HOV lane access. The remaining 2.2-mile segment of US 101 in San Jose north of the SR 85 interchange is included to accommodate advance notification signage and power and communication equipment for express lane operation.

1.1.2 Background

The proposed project was originally conceived in 2003 as part of a VTA Adhoc Financial Stability Committee recommendation. In 2004 the California Legislature passed AB 2032 authorizing VTA, as part of a demonstration project to conduct, administer, and operate a value pricing and transit development program under which SOVs may use designated HOV lanes at certain times of the day for a fee. A Feasibility Study was completed in 2005. In 2007, AB 574 was passed, removing the “demonstration” category from the law and allowing the VTA to implement a value pricing program within any two corridors in the Santa Clara County HOV lane system.

VTA began preliminary engineering and public outreach in 2007, and the VTA Board approved a Silicon Valley Express Lane Program in December 2008. Work on the development of SR 85 express lanes has been on-going since 2007. As part of the preliminary engineering work, more than 19 express lane access configurations were reviewed, public outreach was conducted, and a technical memorandum was prepared that was used as input for the approval of the Silicon Valley Express Lanes Program by VTA Board of Directors. Approval of the project's Project Study Report (PSR) advanced work into the preliminary engineering and environmental approval phase.

Net revenue generated from the use of the SR 85 express lanes would be used in the SR 85 corridor for highway improvements including transit service and operations.

1.1.3 Project Description

The Build Alternative would convert the existing single HOV lanes into express lane facilities that would have one lane between US 101 in southern San Jose and SR 87, two lanes between SR 87 and I-280, and one lane between I-280 and US 101 in Mountain View. Conversion of the HOV lanes to express lanes would allow use by SOVs with active FasTrak accounts and toll tags.

The project would be constructed entirely within the existing right-of-way.

1.1.3.1 Express Lane Configuration

Like the existing HOV lanes, the express lanes would be adjacent to the center median. The striping that separates the lanes from the general purpose lanes would be changed from the existing dashed line for the HOV lane to a 2-foot-wide double-line striped buffer zone for the express lanes. The striped buffer zone would have gaps in multiple locations where vehicles can enter and exit the express lanes (called access points). The buffer zones serve to limit vehicle movement into and out of the express lanes to the designated access points.

Lighting would be added in the SR 85 median in areas with access points and buffer zones. The project would also include signage to advise express lane users that entering or exiting the facility anywhere other than designated buffer zones is a traffic violation.

1.1.3.2 US 101/SR 85 Direct Connectors

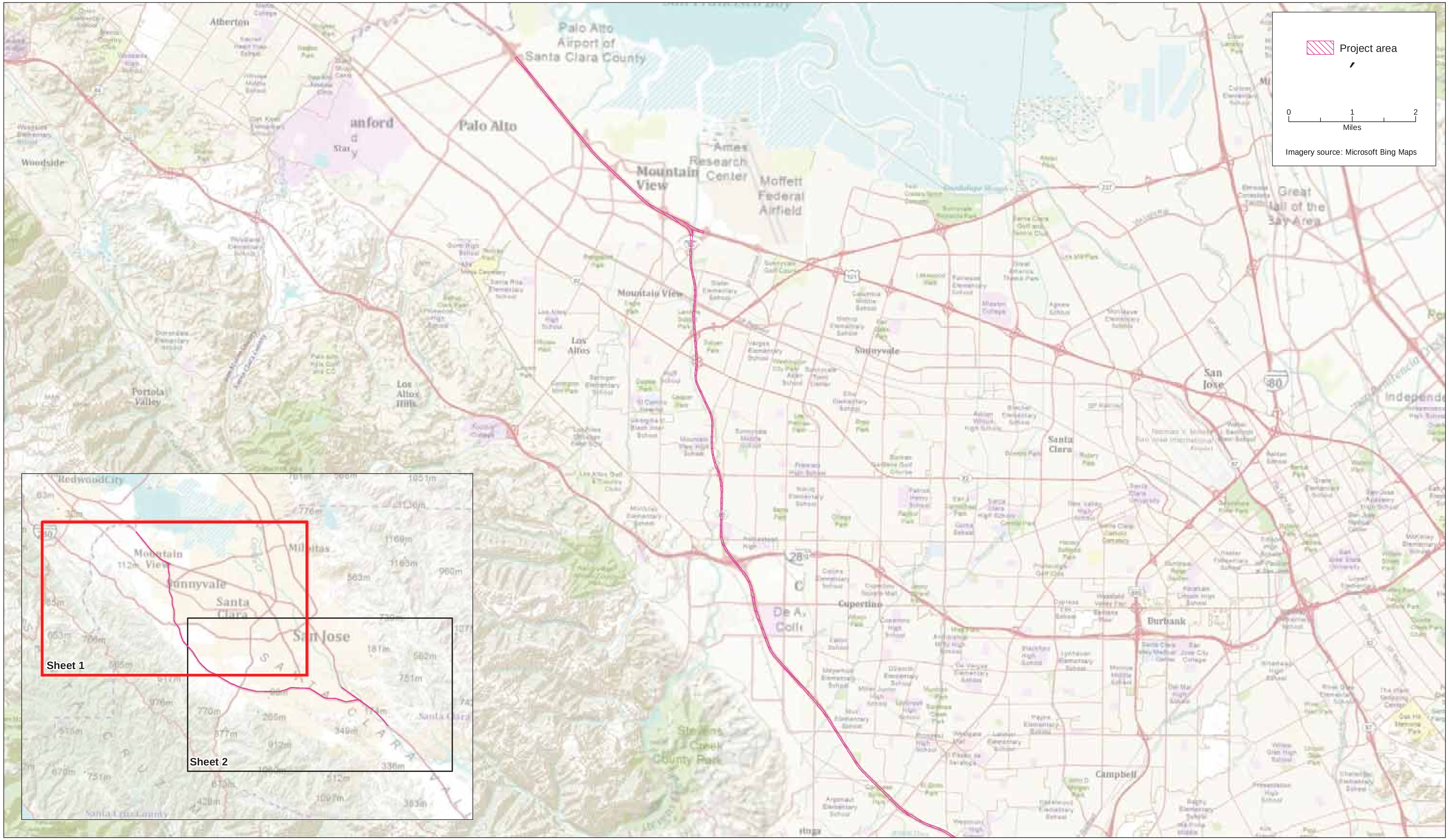
At the south end of the project in southern San Jose, both the northbound and southbound HOV direct connectors from SR 85 to US 101 will be converted to express connectors, allowing SOVs with valid FasTrak devices to use the direct connectors. The southern end of the proposed express lanes on US 101 will coincide with the beginning/ending of the double HOV lanes under the Metcalf Road overcrossing.

At the north end of the project in Mountain View, the buffer-separated express lane facility will end on SR 85 shortly before the US 101/SR 85 interchange. The direct connectors at this location are not proposed to be part of the SR 85 Express Lanes project and would remain as HOV-only connectors. In the northbound direction on SR 85, the express lane would terminate in advance of the direct connectors, allowing enough distance for SOVs to exit the lane and merge across the general purpose lanes to use the general purpose ramp from northbound SR 85 to northbound US 101. In the southbound direction, the express lane would start shortly after the direct connector terminates on SR 85, allowing enough distance for SOVs entering southbound SR 85

URS Corp - Oakland CA - F.Bashir Path: L:\Projects\Caltrans_SR_85_Express_Lanes_28645170\Maps\MXT\Figure 1_8x11_Project_Location.mxd

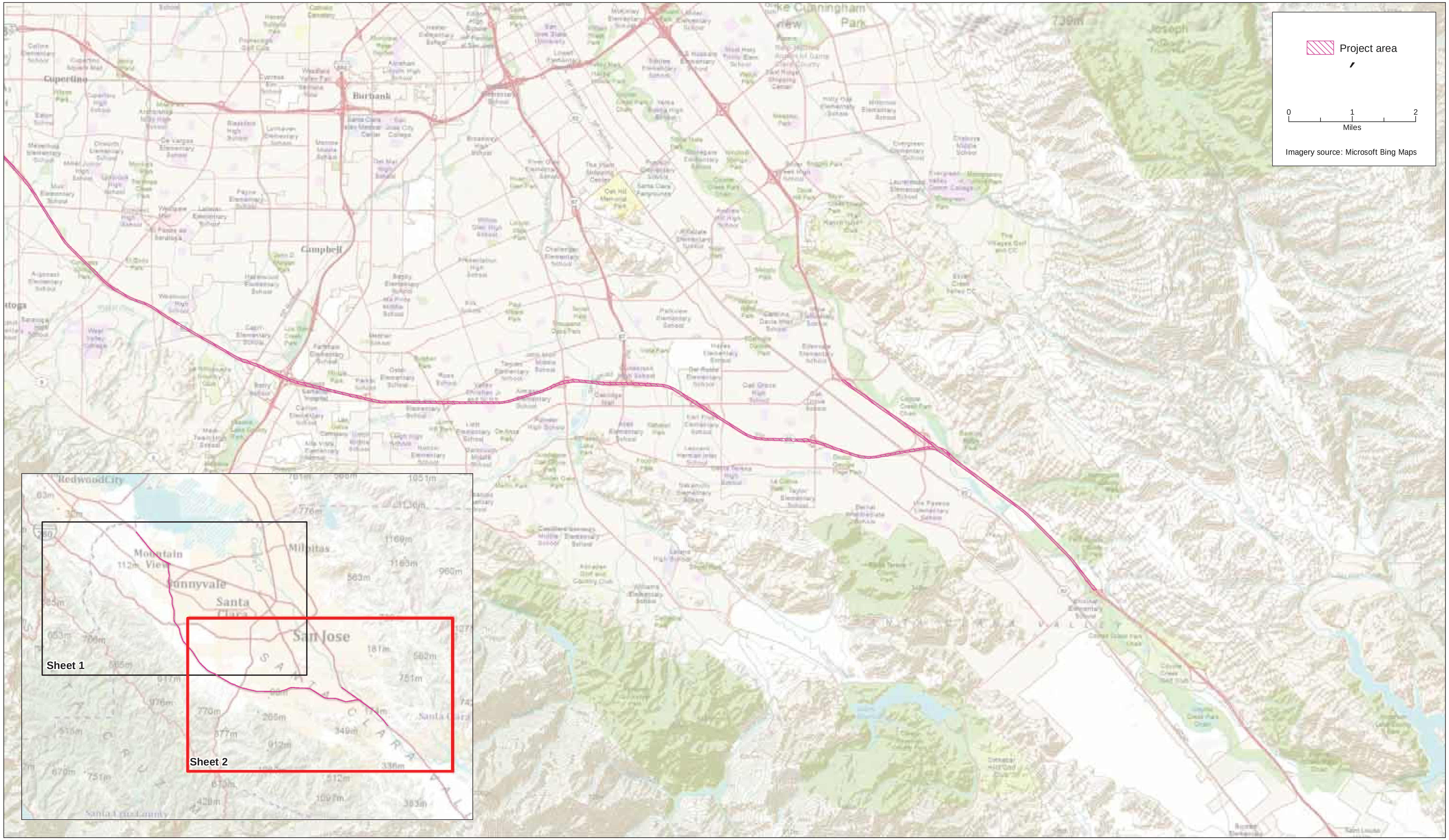
URS Caltrans
State Route 85 Express Lanes

Figure 1
Project Location and Regional Setting



URS Caltrans
State Route 85 Express Lanes

Figure 2,Sheet 1
Project area



Caltrans
State Route 85 Express Lanes

Figure 2, Sheet 2
Project area

from the general purpose ramp to merge across the general purpose lanes and enter the express lane.

1.1.3.3 Express Lane Operations

Express lane operations would be tightly integrated with monitoring of traffic speed and density, enforcement, incident management, and other subsystems to maintain free-flow conditions. Static overhead signs would be installed to notify drivers as they approach an express lane access point. An overhead dynamic message sign (DMS) located just before each access point would display the current toll rates. The DMS would display the price to the destination served by the next exit from the express lanes facility as well as the other downstream exits. The toll rates on the DMS would be updated every 3 to 6 minutes to reflect changing speed and traffic density measured at intervals along the express lanes.

After entering the express lanes, all vehicles would pass through one or more tolling zones. Overhead antennas in the express lanes would "read" the toll tag and track the number of zones so that the correct toll is charged to the customer's FasTrak prepaid account.

Static overhead and barrier-mounted signs would provide advance notice of an express lane exit, including a list of specific interchanges immediately downstream of the exit shown on the sign. The exit would be situated to allow a user adequate distance to change lanes before reaching a particular interchange to exit the freeway.

If the express lanes approach their capacity threshold (1,650 vph per lane), the toll would be increased as needed, up to a maximum toll rate to be determined, in order to reduce the incentive for SOVs to enter the express lanes or proceed through the next tolling zone. The toll increase for SOVs would be used to maintain the target level of service (LOS) for HOVs. If the express lanes reach capacity, the message on the DMS would change to read "HOV only." At that point, only HOVs would be allowed into the lanes. SOVs would not be allowed even if they have a FasTrak toll tag.

1.1.3.4 Construction Activities

In the segments of SR 85 between US 101 in southern San Jose and SR 87 and between I-280 and US 101 in Mountain View, the 2-foot-wide buffer would be created by reducing the width of the existing HOV lane and the adjacent general purpose lane from 12 feet to 11 feet. The rest of the general purpose lanes would remain 12 feet wide.

In the segment of SR 85 between SR 87 and I-280, where a second express lane would be added in each direction, pavement widening would be conducted in the median to accommodate the express lanes and buffer zones. The median would be paved and the existing thrie-beam barrier would be replaced with a Type 60 concrete barrier.

SR 85 bridge decks would be widened at Almaden Expressway (northbound side only), Camden Avenue, Oka Road, Pollard Road, and Saratoga Avenue, as well as at the San Tomas Aquino Creek and Saratoga Creek crossings. The existing gaps between the northbound and southbound bridges at these locations would be closed except at Almaden Expressway, where the northbound bridge would be widened on the inside (toward the median). Bridge widening work would take place along the banks of San Tomas Aquino and Saratoga creeks, but no in-water work is proposed.

An auxiliary lane would be added to a 1.1-mile segment of northbound SR 85 between the existing South De Anza Boulevard on-ramp and Stevens Creek Boulevard off-ramp. The purpose of the auxiliary lane is to improve traffic operations during peak periods. The existing pavement would be widened by up to 14 feet to the outside (northeast). To accommodate the auxiliary lane, the existing embankments at the abutments of the South Stelling Road and McClellan Road overcrossings adjacent to northbound SR 85 would be replaced with retaining walls. No culvert extensions, sound wall modifications, or additional right-of-way would be required.

Overhead signs and tolling devices would be mounted on cantilever structures supported on cast-in-drilled-hole or driven piles in the median. The piles for the overhead signs would be from 3 to 6 feet in diameter and extend to approximately 30 feet below ground surface. The piles for the tolling devices would be 1 to 2 feet in diameter and would extend to approximately 10 feet below ground surface.

Lighting would be installed on mast-arm lighting standards in the median of SR 85 as well as on overhead signs and tolling devices. The median lighting standards would be supported on cast-in-drilled-hole or driven piles of approximately 2.5 feet in diameter and 8 feet below ground surface. The actual spacing and number of lights in the project corridor will be determined during detailed project design in coordination with Caltrans Traffic Safety.

Some Traffic Operations Systems (TOS) equipment such as traffic monitoring stations, Closed Circuit Televisions, cabinets, and controllers would be installed along the outside edge of pavement within the existing right-of-way. Maintenance pullouts would be installed in shoulder areas to allow access to the TOS equipment. The specific locations of these features would be developed during final project design.

Trenching would be conducted along the outside edge of pavement for installation of conduits. The depth of trenching would be 3 to 5 feet below the roadway surface. Conduits would be jacked across the freeway to the median where needed to provide power and communication feeds to the new overhead signage and tolling equipment.

Project construction would take place at night as well as on weekends and non-peak weekday hours. During construction, some lane closures could be required, but full freeway closures are not expected to be necessary.

2.1 CLIMATE, METEOROLOGY, AND TOPOGRAPHY

Due to its topographic diversity, the meteorology and climate of the Bay Area is often described in terms of different subregions and their microclimates. The proposed project is in the Santa Clara Valley subregion, as defined by the Bay Area Air Quality Management District (BAAQMD).

The Santa Clara Valley is bordered by San Francisco Bay to the north and by mountains to the east, south, and west. Temperatures are warm on summer days and cool on summer nights, and winter temperatures are fairly mild. At the northern end of the valley, mean maximum temperatures are in the low 80s during the summer and the high 50s during the winter, and mean minimum temperatures range from the high 50s in the summer to the low 40s in the winter. Further inland, where the moderating effect of the Bay is not as strong, temperature extremes are greater. For example, in San Martin, 27 miles south of the San Jose International Airport, temperatures can be more than 10 degrees warmer on summer afternoons and more than 10 degrees cooler on winter nights than mean temperatures in the valley.

Winds in the valley are greatly influenced by the terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. A north-northwesterly sea breeze flows through the valley during the afternoon and early evening, and a light south-southeasterly drainage flow occurs during the late evening and early morning. In the summer, the southern end of the valley sometimes becomes a “convergence zone,” when air flowing from the Monterey Bay is channeled northward into the southern end of the valley and meets with the prevailing north-northwesterly winds.

Wind speeds are greatest in the spring and summer and weakest in the fall and winter. Nighttime and early morning hours frequently have calm winds in all seasons, while summer afternoons and evenings are quite breezy. Strong winds are rare and are associated mostly with winter storms.

The air pollution potential of the Santa Clara Valley is high. High summer temperatures, stable air, and mountains surrounding the valley combine to promote ozone (O_3) formation. In addition to local sources of pollution, O_3 precursors from San Francisco, San Mateo, and Alameda counties are carried by prevailing winds to the Santa Clara Valley. The valley tends to channel pollutants to the southeast. In addition, on summer days with low-level inversions, O_3 can be recirculated by southerly drainage flows in the late evening and early morning and by the prevailing northwesterly winds in the afternoon. A similar recirculation pattern occurs in the winter, affecting levels of carbon monoxide (CO) and particulate matter.

Pollution sources are plentiful and complex in this subregion. The Santa Clara Valley has a high concentration of industry at the northern end, in the Silicon Valley. Some of these industries are sources of air toxics as well as criteria air pollutants. In addition, Santa Clara Valley's large population and many work-site destinations generate the highest mobile source emissions of any subregion in the San Francisco Bay Area Air Basin (SFBAAB; BAAQMD 2011).

2.2 REGULATORY SETTING

2.2.1 Regional Regulatory Status for National Ambient Air Quality Standards

The 1970 Federal Clean Air Act (CAA) required the establishment of National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: CO, O_3, particulate matter (PM_{10} and $PM_{2.5}$), nitrogen oxides (NO_x), sulfur oxides (SO_x), and lead (Table 2-1). The NAAQS are divided into primary standards and secondary standards. Primary standards are designed to protect public health. Secondary standards are less restrictive than primary standards and are intended to protect the public from such effects as a reduction in visibility, damage to animals, crops, vegetation, and buildings and other types of impacts. The CAA and subsequent Federal Clean Air Act Amendments (CAAA) of 1977 and 1990 empower the United States Environmental Protection Agency (USEPA) to designate areas as being in attainment or nonattainment for each criteria pollutant. The CAA and CAAA require that states develop State Implementation Plans (SIPs) for areas that are in nonattainment of any of the NAAQS. The SIPs present strategies for the attainment of the NAAQS and also include comprehensive attainment plans for each nonattainment area.

The California Air Resources Board's (CARB's) emission control programs, including strict motor vehicle emission standards and the clean fuels program, have reduced CO emissions dramatically. On November 6, 1991, the USEPA designated 10 areas in California, including urbanized parts of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties, as nonattainment areas for the national 8-hour CO standard. By 1995, decreased vehicle emissions had helped to improve CO air quality enough that CARB's air monitoring network indicated these 10 areas could be redesignated to attainment for the national 8-hour CO standard. As one of the conditions for redesignation, CARB developed a CO maintenance plan for inclusion in the SIP in 1996 (CARB 1996). On March 31, 1998, the USEPA approved California's SIP revision and the redesignation became effective on June 1, 1998. CARB submitted a revised CO plan (CARB 2004) to the USEPA on November 8, 2004, with an update to the CO maintenance plan for 10 urban areas and showed how the 10 areas will continue to maintain the CO standard through 2018. The SIP also included updated emissions estimates and established new on-road motor vehicle emission budgets for transportation conformity purposes.

Table 2-1 State and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]	
		Concentration	Attainment Status	Concentration[3]	Attainment Status
Ozone (O_3)	8 Hour	0.070 ppm (137 µg/m^3)	N[9]	0.075 ppm (157 µg/m^3)	N[4]
	1 Hour	0.09 ppm (180 µg/m^3)	N		See Footnote 5
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	A	9 ppm (10 mg/m^3)	A[6]
	1 Hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m^3)	A
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	A	0.100 ppm (see Footnote 11)	U
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	NA	0.053 ppm (100 µg/m^3)	A
Sulfur Dioxide (SO_2) (see Footnote 12)	24 Hour	0.04 ppm (105 µg/m^3)	A	0.14 ppm (365 µg/m^3)	A
	1 Hour	0.25 ppm (655 µg/m^3)	A	0.075 ppm (196 µg/m^3)	A
	Annual Arithmetic Mean	NA	NA	0.030 ppm (80 µg/m^3)	A
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	N[7]	NA	NA
	24 Hour	50 µg/m^3	N	150 µg/m^3	U
Particulate Matter - Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	N[7]	12 µg/m^3	U
	24 Hour	NA	NA	35 µg/m^3 (see Footnote 10)	N
Sulfates	24 Hour	25 µg/m^3	A	NA	NA
Lead (see Footnote 13)	Calendar Quarter	NA	NA	1.5 µg/m^3	A
	30 Day Average	1.5 µg/m^3	NA	NA	A
	Rolling 3 Month Average	NA	NA	0.15 µg/m^3	See Footnote 14
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	U	NA	NA
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 µg/m^3)	NIA	NA	NA
Visibility Reducing particles	8 Hour (10:00 to 18:00 PST)	See Footnote 8	U	NA	NA

Notes: A=Attainment, N=Nonattainment, NIA= No Information Available, U=Unclassified; mg/m^3=milligrams per cubic meter; ppm=parts per million; µg/m^3=micrograms per cubic meter, NA=Not Applicable, PST=Pacific Standard Time

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

2. National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th-highest daily concentrations is 0.075 ppm or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3. Except for the National particulate standards, annual standards are met if the annual average falls below the standard at every site. The National annual standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed

clusters of sites falls below the standard.

3. National air quality standards are set by USEPA at levels determined to be protective of public health with an adequate margin of safety.

4. Final designations effective July 20, 2012.

5. The National 1-hour ozone standard was revoked by USEPA on June 15, 2005.

6. In April 1998, the Bay Area was redesignated to attainment for the National 8-hour carbon monoxide standard.

7. In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

8. Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

9. The 8-hour State ozone standard was approved by CARB on April 28, 2005, and became effective on May 17, 2006.

10. USEPA lowered the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ in 2006. USEPA designated the Bay Area as nonattainment of the PM2.5 standard on October 8, 2009. The effective date of the designation is December 14, 2009 and the Air District has 3 years to develop a plan, called a State Implementation Plan (SIP), that demonstrates the Bay Area will achieve the revised standard by December 14, 2014. The SIP for the new PM2.5 standard must be submitted to the USEPA by December 14, 2012.

11. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

12. On June 2, 2010, the USEPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO2 NAAQS however must continue to be used until 1 year following USEPA initial designations of the new 1-hour SO2 NAAQS. USEPA expects to designate areas by June 2012.

13. ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined.

14. National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

Source: BAAQMD. 2013. Air Quality Standards and Attainment Status. Available at http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm.

USEPA. 2013 National Ambient Air Quality Standards. Available at http://www.epa.gov/air/criteria.html.

In 1998, the SFBAAB was designated as a nonattainment area for the national O_3 1-hour standard. In April 2004, USEPA made a final finding that the Bay Area had attained this standard. In 1997, USEPA issued a new 8-hour O_3 standard, which was considered by the USEPA to be more health-protective than the 1-hour standard. Legal challenges delayed implementation of the new standard until 2000. The USEPA revoked the national 1-hour O_3 standard on June 15, 2005. In March 2008, the USEPA revised the national 8-hour primary O_3 standard to 0.075 ppm. The SFBAAB is designated a marginal nonattainment area for the national 8-hour O_3 standard. In January 2010, the USEPA proposed a stricter air quality standard for ground-level O_3. The new O_3 proposal would set the primary smog standard at a level between 0.060 and 0.070 parts per million (ppm) measured over an 8-hour period. The USEPA was expected to finalize the newly proposed national 8-hour O_3 standard by July 31, 2011. On September 2, 2011, the White House announced that it was overruling the USEPA's plan to adopt a stricter standard for ground-level O_3 until a scheduled reconsideration of acceptable pollution limits in 2013.

In 1997, the USEPA promulgated new NAAQS for particulate matter with a diameter less than or equal to 2.5 microns ($PM_{2.5}$) to reflect the latest medical studies, which have found particulate matter of this size to pose potential risk to public health. USEPA lowered the 24-hour $PM_{2.5}$ standard from 65 micrograms per cubic meter ($\mu g/m^3$) to 35 $\mu g/m^3$ in 2006. USEPA designated the Bay Area as nonattainment for the $PM_{2.5}$ standard on October 8, 2009, and set a deadline of December 14, 2012, for the BAAQMD to develop a plan (called a SIP) that demonstrates that the Bay Area will achieve the revised standard by December 14, 2014. On January 9, 2013, the USEPA issued a final rule to determine that the San Francisco Bay Area has attained the 24-hour $PM_{2.5}$ NAAQS, suspending federal SIP planning requirements for the Bay Area (BAAQMD

2013). USEPA also lowered the annual $PM_{2.5}$ standard from 15 μg/m^3 to 12 μg/m^3 in December 2012. Final designations from the USEPA based on the revised standard are not expected until December 2014.

The SFBAAB is classified as attainment or unclassified for the remaining national standards. Unclassified generally indicates that there is a lack of representative data to classify a basin.

2.2.2 Engine Standards

On May 11, 2004, the USEPA signed the final rule introducing Tier 4 emission standards, which are to be phased in over the period of 2008–2015 (69 CFR 38957–39273, June 29, 2004). The Tier 4 standards require that emissions of particulate matter and NO_x be further reduced by about 90 percent. Such emission reductions can be achieved through the use of control technologies, including advanced exhaust gas after-treatment. To enable sulfur-sensitive control technologies in Tier 4 engines, such as catalytic particulate filters and NO_x absorbers, the USEPA mandated reductions in sulfur content in non-road diesel fuels. In most cases, federal non-road regulations also apply in California, which has only limited authority to set emission standards for new non-road engines. The CAA preempts California's authority to control emissions from new farm and construction equipment under 175 horsepower (CAA Section 209[e][1][A]) and requires California to receive authorization from the USEPA for controls over other off-road sources (CAA Section 209[e][2][A]).

Motor vehicle standards to improve fuel economy and reduce emissions have been established at both the federal and state level. The USEPA and the National Highway Traffic Safety Administration (NHTSA) have established Corporate Average Fuel Economy (CAFE) fuel standards for motor vehicles. On September 15, 2011, the USEPA and NHTSA issued a final rule of Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles (76 Federal Register 57106). This final rule is tailored to each of three regulatory categories of heavy-duty vehicles: combination tractors; heavy-duty pickup trucks and vans; and vocational vehicles. The USEPA and NHTSA estimated that the new standards in this rule will reduce CO_2 emissions by approximately 270 million metric tons (MMT), and save 530 million barrels of oil over the life of vehicles sold during the 2014 through 2018 model years.

2.2.3 Regional Regulatory Status for California Ambient Air Quality Standards

California has established California Ambient Air Quality Standards (CAAQS) for criteria pollutants (Table 2-1), as well as for other pollutants (sulfates, visibility reducing particles, vinyl chloride, and hydrogen sulfide) for which there are no corresponding NAAQS. The CAAQS for criteria pollutants are equal to or more stringent than the NAAQS. The CAAQS and air basin designations are established by CARB. CARB is also responsible for implementing the strategies of the SIP, once it has been approved by the USEPA.

In June 2002, CARB revised the annual standard for particulate matter less than 10 micrometers in diameter (PM_{10}) from 30 to 20 μg/m^3. CARB also established an annual standard for $PM_{2.5}$ of 12 μg/m^3. These new standards became effective on July 5, 2003. On April 28, 2005, CARB established a new 8-hour average standard for O_3 of 0.070 ppm. The new standard went into effect on May 17, 2006.

Analogous to the CAA and CAAA, the 1988 California Clean Air Act (CCAA) requires areas of the state to be designated as attainment or nonattainment for each criteria pollutant. Under the CCAA, air districts not meeting CAAQS for O_3, CO, SO_x, or NO_x are required to prepare attainment plans intended to improve air quality and attain the standards. The San Francisco Air Basin is currently designated a nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The San Francisco Air Basin is classified as a "serious" nonattainment area for the state O_3 standard. As a serious nonattainment area, the BAAQMD is required to adopt, among other things, measures requiring best available retrofit control technology (BARCT) on existing sources of air pollution, and best available control technology (BACT) for new and modified sources with a potential to emit 10 pounds per day or more of O_3 precursors.

In 2003, the California Legislature enacted Senate Bill 656 (SB 656, Sher), codified as California Health and Safety Code Section 39614. This legislation seeks to reduce public exposure to PM_{10} and $PM_{2.5}$ and to make progress toward attainment of state and national PM_{10} and $PM_{2.5}$ standards. SB 656 required CARB, in consultation with local air quality districts, to develop and adopt a list of the most readily available, feasible, and cost-effective control measures that could be used by CARB and air districts to reduce particulate matter. The bill required the CARB and air districts to adopt implementation schedules for appropriate CARB and air district measures.

2.2.4 Bay Area Air Quality Management District

The SFBAAB encompasses approximately 5,600 square miles and includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, Santa Clara, and San Mateo counties, and portions of Solano and Sonoma counties. The BAAQMD and CARB have joint responsibility for developing and enforcing regulations needed to achieve and maintain NAAQS and CAAQS in the air basin.

The BAAQMD is also responsible for preparation of plans for attaining and maintaining ambient air quality standards in the region, adoption and enforcement of rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns.

The Bay Area Clean Air Plan (CAP) is developed in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG). Projections developed by ABAG, which estimate future population and transportation trends, are used to develop and evaluate strategies to bring the SFBAAB into compliance with NAAQS and CAAQS. The first CAP was adopted in 1991, and the most recent update is the 2010 Clean Air Plan. The 2010 CAP, adopted by BAAQMD in cooperation with the MTC and ABAG, has the dual role as an update to the state O_3 plan and a multi-pollutant plan. The 2010 CAP addresses four categories of pollutants: ground-level O_3 and its key precursors, reactive organic gases (ROG) and NO_x; particulate matter; primary $PM_{2.5}$, as well as precursors to secondary $PM_{2.5}$; air toxics; and GHGs. The 2010 CAP control strategy includes revised, updated, and new measures in the three traditional control measure categories: Stationary Source Measures, Mobile Source Measures, and Transportation Control Measures (TCMs). In addition, the CAP identifies two new categories of control measures: Land Use and Local Impact Measures, and Energy and Climate Measures (BAAQMD 2010).

In 1999, the BAAQMD, ABAG, MTC, and the Bay Area Alliance for Sustainable Communities undertook the Smart Growth Strategy/Regional Livability Footprint Project. The goal of the Smart Growth Project is to develop and implement a preferred land use vision that favors compact, mixed use development near transit stations, transit corridors, and town centers. The Smart Growth vision is reflected in ABAG's 2003 projections, the MTC's Transportation 2035 Plan (the RTP for the Bay Area), and the air quality strategies and implementation programs of the BAAQMD.

To comply with SB 656, BAAQMD reviewed the list of 103 potential particulate matter control measures prepared by CARB and developed a Particulate Matter Implementation Schedule which was adopted by BAAQMD on November 16, 2005.

2.2.5 Greenhouse Gases (GHG)

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization's in 1988, has led to increased efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs related to human activity that include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

2.2.5.1 State

With the passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level.

AB 1493, Pavley. Vehicular Emissions: Greenhouse Gases (AB 1493), 2002: requires the CARB to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the USEPA Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. In January 2012, CARB also approved the Advanced Clean Cars Program, a vehicle emission control program for model years 2017 through 2025. On August 28, 2012, the USEPA and NHTSA issued a joint final rulemaking to establish 2017 through 2025 GHG emissions and CAFE Standards. To further California's support of the national program to regulate emissions, the CARB submitted a proposal that would allow automobile manufacturer compliance with the USEPA's requirements to show compliance with California's requirements for the same model years. The Final Rulemaking Package was filed on December 6, 2012, and the final rulemaking became effective on December 31, 2012.

Executive Order S-3-05: (signed on June 1, 2005, by Governor Arnold Schwarzenegger) the goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of AB 32.

AB 32, the Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team. CARB released the Climate Change Proposed Scoping Plan in October 2008 and adopted the plan on December 12, 2008. This plan contains an outline of the proposed state strategies to achieve the 2020 GHG emission limits. CARB is currently in the process of updating the Scoping Plan to include progress since 2005, additional reduction measures, and plans for reductions beyond 2020. CARB anticipates releasing the updated Scoping Plan in late 2013.

Executive Order S-01-07: Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by 2020.

SB 97 (Chapter 185, 2007): required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the CEQA Guidelines for addressing greenhouse gas emissions. The Amendments became effective on March 18, 2010.

SB 375, Sustainable Communities and Climate Protection Act of 2008: SB 375 was signed into law by the Governor Schwarzenegger on September 30, 2008, and became effective January 1, 2009. This law requires CARB to develop regional reduction targets for GHG emissions, and prompts the creation of regional plans to reduce emissions from passenger vehicle use throughout the state. The targets apply to the regions in the state covered by the California's 18 metropolitan planning organizations (MPOs). The MPOs have been tasked with creating Sustainable Communities Strategies (SCS). The MPOs are required to develop the SCS through integrated land use and transportation planning and to demonstrate an ability to attain the proposed reduction targets by 2020 and 2035. This would be accomplished through either the financially constrained Sustainable Communities Strategy as part of their RTP or an unconstrained alternative planning strategy. If regions develop integrated land use, housing, and transportation plans that meet the SB 375 targets, new projects in these regions can be relieved of certain review requirements of the CEQA.

2.2.5.2 Federal

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the USEPA nor the FHWA has issued explicit guidance or methods to conduct project-level GHG analysis.[1] FHWA supports the approach that climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many

[1] To date, no national standards have been established regarding mobile source GHGs, nor has USEPA established any ambient standards, criteria or thresholds for GHGs resulting from mobile sources.

planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in travel activity.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514- Federal Leadership in Environmental, Energy and Economic Performance.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

USEPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions. U.S. EPA in conjunction with NHTSA issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.[2]

USEPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, USEPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards this program is projected to save approximately four billion barrels of oil and two billion metric tons of GHG emissions.

The complementary USEPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi trucks), heavy-duty pickup trucks and vans, and

[2] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.[3] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult if not impossible task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California (forecast last updated: October, 28 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented (see Figure 3). The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

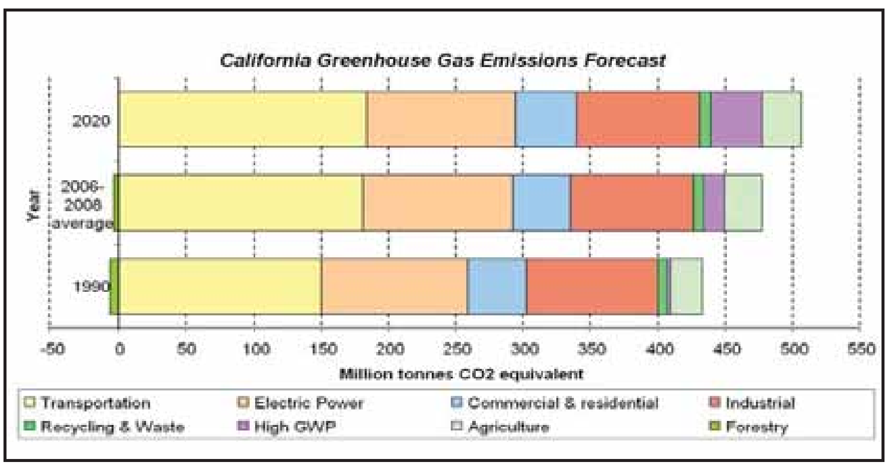


Figure 3 California Greenhouse Gas Forecast

Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

[3] This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

Caltrans and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[4]

2.2.6 Project-Level Conformity with Air Quality Plans

USEPA has developed criteria and procedures for determining the conformity of federal actions to the applicable SIPs. For the purposes of determining conformity with a SIP, the Federal CAA and related USEPA regulations distinguish between transportation-related plans, programs, and projects that are funded, approved, or sanctioned by the FHWA or the Federal Transit Administration (FTA) under Title 23 of the United States Code (USC), and all other federally funded, approved, or sanctioned plans, programs, and projects. Different criteria and procedures for determining conformity have been established for these two broad categories of actions: the former is referred to as "transportation conformity" and the latter is referred to as "general conformity." Since this is a new project in an area designated as nonattainment or maintenance for transportation-related air pollutants, a new project-level conformity determination is required.

2.2.6.1 Project Design and Funding in 2013 RTP and TIP

The project is listed in the 2009 Santa Clara Valley Transportation Plan 2035 (VTA 2009) as VTP ID H1 and in the MTC's Regional Transportation Plan (RTP), Plan Bay Area (ABAG and MTC 2013), as Reference Number 240439.

The project is also included in the 2013 Transportation Improvement Program (TIP), which was adopted by MTC on July 18, 2013 (TIP ID No. SCL090030), as "SR 85 Express Lanes." The following summarizes the regional transportation planning and conformity approvals related to this project.

MTC initiated its regional conformity analysis for the 2013 TIP in 2012 with a consultation request to partner agencies, discussing the approach to the air quality assessment. The process included public consultation and was developed in compliance with FHWA regulations and guidance on financial constraint. MTC's evaluation for the 2013 TIP determined that the regional emissions analysis was below the applicable budgets in the SIP. The evaluation used the latest available socioeconomic and land use forecasts from ABAG and the latest MTC travel demand model, which are less than 5 years old. As noted above, the 2013 TIP was approved by FHWA/FTA on August 12, 2013.

The proposed project is in the 2013 RTP, which was found to conform by MTC on July 18, 2013, and FHWA and FTA adopted the air quality conformity finding on August 12, 2013. The project is also included in MTC's financially constrained 2013 TIP, page S3-239. The MTC's 2013 TIP was found to conform by FHWA and FTA on August 12, 2013.

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[4] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

The design concept and scope of the proposed project is consistent with the project description in the 2013 RTP, the 2013 TIP, and the assumptions in MTC's regional emissions analysis. Therefore, the project is in conformity with the SIP and will not otherwise interfere with timely implementation of any TCMs in the applicable SIP.

2.2.7 Air Pollutants of Concern

Much of the degradation of ambient air quality in the SFBAAB is due to emissions from mobile sources. The primary pollutants of concern associated with motor vehicles are O_3, CO, PM_{10} and $PM_{2.5}$. The air basin is in nonattainment of the federal and state O_3 standards; attainment of the federal and state CO standards; and unclassified for the federal but nonattainment for the state PM_{10} standards; and nonattainment for the state and federal $PM_{2.5}$ standards.

2.2.7.1 Ozone

Motor vehicles do not emit O_3 directly into the environment, but tailpipe emissions undergo complex chemical reactions in the presence of sunlight, which result in the formation of O_3. The primary chemicals involved in these reactions are NO_x and ROG, often referred to as O_3 precursors. O_3 precursors may come from sources other than motor vehicles, but the largest source in the SFBAAB is motor vehicle exhaust. O_3 exposure causes eye irritation and damage to lung tissue in humans. O_3 also harms vegetation, reduces crop yields, and accelerates deterioration of paints, finishes, rubber products, plastics, and fabrics.

2.2.7.2 Carbon Monoxide

CO is an odorless, colorless gas formed by the incomplete combustion of fuels. The single largest source of CO in the SFBAAB is motor vehicles. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and low-speed driving.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations may experience headaches, dizziness, fatigue, unconsciousness, and even death.

2.2.7.3 PM_{10}

PM_{10} is particulate matter that is equal to or less than 10 micrometers in diameter. PM_{10} is also released directly into the atmosphere by mobile sources. It may come from a variety of sources and consists of a wide range of solid and liquid particles, including smoke, dust, aerosols, and metallic oxides, but approximately 50 percent of the particulate matter in the air basin is due to motor vehicles. PM_{10} is emitted from automobile tailpipes, brake pads and tires, and movement of road dust from vehicle travel. It evades the respiratory system's natural defenses and can lodge deep in the lungs when inhaled, aggravating chronic respiratory diseases. Children, the elderly, and those suffering from asthma, bronchitis, heart disease, or lung disease are particularly vulnerable to the adverse health effects of PM_{10} exposure. Long-term exposure to PM_{10} at levels exceeding state standards can lead to an increase in respiratory and cardiac illness, exacerbation of asthma, and increased death rates.

2.2.7.4 $PM_{2.5}$

Also known as fine particulate matter, $PM_{2.5}$ is particulate matter that is equal to or less than 2.5 micrometers in diameter. $PM_{2.5}$ exposure has been linked to health problems, including asthma, bronchitis, acute and chronic respiratory symptoms (e.g., shortness of breath and painful breathing), and premature death. People with existing heart or lung disease (e.g., asthma, chronic obstructive pulmonary disease, and congestive heart disease) are at risk of premature death or admission to hospitals or emergency rooms when exposed to $PM_{2.5}$. The elderly, individuals with cardiopulmonary disease, and children appear to be at greatest risk. Most of the premature deaths are among the elderly, because their immune systems are generally weaker due to age or other health problems. Children are also susceptible to the health risks of $PM_{2.5}$ because their immune and respiratory systems are not yet fully matured. In addition, $PM_{2.5}$ particles are a major source of visibility impairment.

2.2.7.5 Toxic Air Contaminants

Management of toxic air contaminants (TACs) is accomplished through a combination of source identification, risk characterization, control requirements, and avoidance of land use conflicts. All stationary sources of TACs are subject to BAAQMD permitting requirements, which include an evaluation of potential TAC emissions and risks to nearby receptors. For new sensitive land uses (including residential areas and schools), it is the responsibility of the city or county to identify whether the new land uses would be located near existing sources of TACs.

Recent regulatory concern has focused on particulate matter generated by diesel engines. In 1998, CARB identified diesel engine particulate matter as a TAC. The USEPA has also identified diesel fuel emissions as a toxic air pollutant. Mobile sources, such as trucks, buses, automobiles, trains, ships, and farm equipment, are the largest source of diesel emissions. CARB estimates that 70 percent of the known statewide cancer risk from outdoor air toxics is attributable to diesel particulate matter, and approximately 24 percent is attributed to on-road diesel-fueled vehicles (CARB 2005a). CARB recommends avoiding siting new sensitive land uses within 500 feet of freeways with traffic volumes of 100,000 or more vehicles per day (CARB 2005b). Particulates from diesel exhaust are managed through vehicle emission control programs implemented on a state and federal level, with the cooperation of fuel suppliers and vehicle and engine manufacturers. Following the identification of the diesel particulate matter as a TAC in 1998, CARB adopted the Diesel Risk Reduction Plan in October 2000 to reduce diesel particulate emissions and resultant health risk to “near zero” by 2020. This plan includes strategies such as ultra-low sulfur diesel fuel, new diesel tailpipe regulations, and regulations governing operations such as idling restrictions.

CARB also administers the Carl Moyer Program, which is a clean engine incentive program that provides incentives to substantially reduce emissions of NO_x and fine particulate matter from heavy-duty diesel engines. CARB also has the On-Road Heavy-Duty Diesel New Engine Program, which has a goal to develop and implement strategies to reduce emissions from new on-road heavy-duty diesel engines through the development of emission control regulations and test procedures for these engines. BAAQMD research indicates that mobile-source emissions of diesel particulate matter, benzene, and 1,3-butadiene represent a substantial portion of the ambient background risk from TACs in the SFBAAB (BAAQMD 2010).

2.3 AMBIENT AIR QUALITY

The BAAQMD operates a network of air monitoring sites throughout the SFBAAB. The Los Gatos monitoring station (306 University Avenue, Los Gatos) is the closest to the project corridor, located approximately 2 miles south-southwest of the SR 85/SR 17 interchange. This monitoring station only monitors O_3 concentrations, so ambient air quality data from the San Jose–Jackson Street monitoring station (158 East Jackson Street, San Jose) was also analyzed. This station is approximately 7 miles north of SR 85, near the SR 87/I-880 interchange.

Table 2-2 summarizes the last 5 years of air quality data for O_3 concentrations measured at the Los Gatos monitoring station and the number of days, if any, that the state or national standards were exceeded. Table 2-3 through 2-6 summarize the last 5 years of air quality data for PM_{10}, $PM_{2.5}$, CO, and NO_2 measured at the San Jose–Jackson Street monitoring station and the number of days, if any, that the state or national standards were exceeded.

Table 2-2 O_3 Trends Summary, Los Gatos Monitoring Station

Year	Number of Days Over Standard			1-Hour Averages (ppm)	8-Hour Averages (ppm)
	8-Hour		1-Hour		
	State	Nat'l	State	Maximum	Maximum
2012	**1**	0	0	0.085	**0.073**
2011	**1**	0	0	0.091	**0.075**
2010	**3**	**2**	**2**	**0.109**	**0.087**
2009	**8**	**4**	**3**	**0.102**	**0.082**
2008	**6**	**2**	**2**	**0.122**	**0.098**

Source: CARB website, www.arb.ca.gov, accessed September 2013. Data summaries posted only through 2012.

Notes:

- Exceedances of the state or national standard shown in **bold** text.
- An exceedance is not necessarily a violation. California standards are not to be exceeded; national standards are not to be exceeded more than once per year.

Table 2-3 PM_{10} Trends Summary, San Jose–Jackson Street Monitoring Station

Year	Estimated Days Over Standard		Annual Average ($\mu g/m^3$)		High 24-Hr Average ($\mu g/m^3$)	
	Nat'l	State	Nat'l	State	Nat'l	State
2012	0	**1**	18.8	18.5	56.5	**59.6**
2011	0	0	18.6	19.2	41.3	44.3
2010	0	0	18.9	19.5	44.2	46.8
2009	0	0	19.5	20.3	41.1	43.3
2008	0	**1**	22.6	**23.4**	55.0	**57.3**

Source: CARB website, www.arb.ca.gov, accessed September 2013.

Notes:

- $\mu g/m^3$ = micrograms per cubic meter
- Exceedances of the state or national standard shown in **bold** text.
- The national annual average standard was revoked in December 2006 and is no longer in effect.
- No exceedances of the national standard were measured.
- An exceedance is not necessarily a violation. California standards are not to be exceeded; national standards are not to be exceeded more than once per year.

Table 2-4 $PM_{2.5}$ Trends Summary, San Jose–Jackson Street Monitoring Station

Year	Estimated Days Over Standard	Annual Average (µg/m³)		High 24-Hr Average (µg/m³)	
	Nat'l	Nat'l	State	Nat'l	State
2012	**2.1**	9.1	*	**38.4**	38.4
2011	**3.1**	9.8	9.9	**50.5**	50.5
2010	*	*	9.0	**41.5**	41.5
2009	0.0	10.1	10.1	35.0	35.0
2008	**5.1**	11.5	11.5	**41.9**	41.9

Source: CARB website, www.arb.ca.gov, accessed September 2013.
Notes:
- µg/m³ = micrograms per cubic meter
- Exceedances of the state or national standard shown in **bold** text.
- An exceedance is not necessarily a violation. California standards are not to be exceeded; national standards are not to be exceeded more than once per year.

* Insufficient (or no) data were available to determine the value.

Table 2-5 Highest Five Daily Maximum 8-Hour CO Averages, San Jose–Jackson Street Monitoring Station

Year	2010		2011		2012	
	Date	Concen. (ppm)	Date	Concen. (ppm)	Date	Concen. (ppm)
First Highest	Jan 10	2.19	Nov 29	2.18	Jan 14	1.86
Second Highest	Jan 11	1.77	Dec 24	2.03	Jan 15	1.85
Third Highest	Dec 3	1.67	Feb 5	1.93	Jan 5	1.83
Fourth Highest	Jan 5	1.66	Dec 10	1.87	Jan 4	1.80
Days Above National Standard	0		0		0	
Days Above State Standard	0		0		0	
Year Covered[1]	81		85		45	

Table 2-6 NO_2 Trends Summary, San Jose–Jackson Street Monitoring Station

Year	Days Over Standard	Annual Average (ppm)	High 1-Hr Average (ppm)
2012	0	0.013	0.067
2011	0	0.014	0.061
2010	0	0.014	0.064
2009	0	0.015	0.069
2008	0	0.017	0.080

Source: CARB website, www.arb.ca.gov, accessed September 2013.
Notes:
- µg/m³ = micrograms per cubic meter
- Exceedances of the state or national standard shown in **bold** text.
- An exceedance is not necessarily a violation. California standards are not to be exceeded; national standards are not to be exceeded more than once per year.

* Insufficient (or no) data were available to determine the value.

2.4 SENSITIVE RECEPTORS

Under the CAA, ambient air quality must meet the standards for criteria pollutants in all locations generally accessible to the public; however, some land uses are considered more sensitive to air pollution than others. Sensitive receptors are defined as facilities that house or attract children, the elderly, people with illnesses, people participating in outdoor sports, or others who are especially sensitive to the effects of air pollutants. Sensitive receptors include schools, parks, hospitals, and convalescent homes. Residential areas are also considered sensitive receptors because residents may include children, the elderly, and the infirm, and residents are often in their homes for extended periods of time.

Residential homes are within a quarter-mile of the proposed project. Emissions have been modeled from locations adjacent to the roadway up to a distance of 25 feet from the roadway to provide a worst-case analysis. As CO and PM concentrations diminish rapidly with distance from the source, concentrations at potential sensitive receptor locations will be significantly lower than in close proximity to the roadway.

3.1 AIR QUALITY IMPACTS

The analysis and evaluation of the impacts of the proposed project are based on data from the traffic analysis (URS 2013b).

3.2 SIGNIFICANCE CRITERIA

The National Environmental Policy Act (NEPA) does not establish or apply "significance criteria"; however, CEQA does. The following criteria are defined only to address CEQA requirements. A transportation project could have a significant effect on air quality under CEQA if it would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

3.3 PERMANENT IMPACTS

Air quality issues relate to a range of different pollutants for which individual regulatory standards exist. The evaluation of air quality impacts addressed in this section focuses on the project's conformity with the regional air quality framework and the project's potential to result in an adverse impact to the region's compliance with the relevant standards.

3.3.1 Conformity to the SIP

This project is in conformity with the SIP because it is included in adopted regional traffic and air quality evaluations (see Section 2.2.6).

3.3.2 Evaluation of Potential for Traffic-Related CO Impacts

The purpose of the evaluation of traffic-related CO effects is to demonstrate that the project will not cause or contribute to any new localized CO violations. Guidance from the UC Davis *Transportation Project-Level Carbon Monoxide Protocol* criteria (Garza, Graney, and Sperling 1997) was used to evaluate CO impacts.

A modeling analysis for CO impacts was completed for two locations along the SR 85 mainline for both the Build and No Build Alternatives using the traffic volumes obtained from the traffic analysis (URS 2013b). The maximum traffic flows within the project area were assumed to occur through the entire project area as a conservative scenario, including the most congested portions of the project area representing maximum CO contribution. The California Line Source (CALINE4) model was used for the analysis, following the guidelines contained in Appendix B of the CO Protocol.

The CALINE4 model is a Gaussian line-source dispersion model that was written by Caltrans. This model uses emission factors from the CARB EMFAC model, which is updated periodically and reflects changes in the vehicle fleet and emission standards. CALINE4 predicts 1-hour and 8-hour CO concentrations for comparison to the 1-hour and 8-hour state and/or federal CO standards. Peak-hour vehicle volumes for the Build and No Build Alternatives, conservative wind speed, and atmospheric stability values are used to predict the maximum hourly concentrations, based on the wind angle that produces the highest result. Eight-hour concentrations are derived from the modeled 1-hour concentrations by applying a persistence factor of 0.7 from the CO Protocol.

The background concentration is an important element in the CO impacts analysis. The second highest concentration over the last 3 years was used for background ambient CO levels, and was obtained from the closest monitoring station (San Jose–Jackson Street monitoring station). The background 8-hour CO level was 2.18 ppm (CARB 2013), and the background 1-hour CO level was 2.6 ppm (USEPA 2013).

To evaluate the potential effects of the project on local CO concentrations, the No Build and Build Alternatives were modeled at two locations along the mainline selected to reflect the likely presence of sensitive receptors. The highest, most conservative traffic volume between AM and PM peak volumes at these locations was used in the model. Other locations that would be potentially affected by the proposed project are not expected to experience CO concentrations higher than the highest predicted among these two locations. The assumptions used in the hot-spot analysis are consistent with those used in the regional emissions analysis.

Table 3-1 summarizes the 2015 and 2035 traffic volumes at the most congested mainline segments evaluated in the traffic analysis (URS 2013b). Peak-hour travel demand volumes are presented as they represent the worst-case traffic conditions.

Table 3-1 Traffic Volumes at Most Congested Mainline Sections, No Build and Build Alternatives

Year	Segments	Volume per hour	
		No Build	Build
2015	AM: SR 85 between Union on-ramp and Bascom off-ramp	7,145	8,083
	PM: SR 85 between Saratoga on-ramp and Winchester off-ramp	6,409	7,820
2035	AM: SR 85 between Union on-ramp and Bascom off-ramp	7,720	8,510
	PM: SR 85 between Saratoga on-ramp and Winchester off-ramp	6,738	7,472

Notes:
AM = peak hour travel volumes (7 AM to 8 AM)
PM = peak hour travel volumes (5 PM to 6 PM)

Emission factors for the vehicles were obtained by running the EMFAC2011 model for Santa Clara County. The CALINE4 model used input parameters (such as wind speed, standard deviation, stability class, temperature adjustment) for the Central Valley Region[5] (Nokes and Benson 1985). The ambient temperature (mean minimum temperature plus temperature adjustment) was found to be 48 degrees Fahrenheit (Western Regional Climate Center 2012). The worst wind angle option in CALINE4 was selected to give worst-case CO concentrations. The CALINE4 and EMFAC2011 model outputs are included in Appendix A.

Background CO concentrations were added to the CALINE4 modeled concentration increases to generate total CO concentrations. The maximum 1-hour concentration for each mainline segment was obtained directly from the CALINE4 modeling; the 8-hour concentrations were estimated by multiplying the 1-hour modeled concentrations by a persistence factor of 0.7. This factor generally represents a ratio of 8-hour ambient levels to 1-hour ambient levels and is generally conservative. Table 3-2 presents the worst-case CO concentrations for the No Build and Build Alternatives.

A project is considered to have significant impacts if it results in CO concentrations that exceed the 1-hour average state standard of 20 ppm, the 1-hour average federal standard of 35 ppm and/or the 8-hour average standard of 9.0 ppm. As shown in Table 3-2, the maximum predicted concentrations (including background) at the selected segments are below these standards for both alternatives. These results support the conclusion that the proposed project will not cause or contribute to any new localized CO violations, or increase the frequency of an existing CO violation, through at least the project study year and RTP planning year of 2035.

Table 3-2 CALINE4 CO Modeling Results for No Build and Build Alternatives, Including Background

		No Build Alternative		Build Alternative	
Year	**Segment**	**CO 1-hour Concentration (ppm)**	**CO 8-hour Concentration (ppm)**	**CO 1-hour Concentration (ppm)**	**CO 8-hour Concentration (ppm)**
2015	AM: SR 85 between Union on-ramp and Bascom off-ramp	4.30	3.37	3.80	3.02
	PM: SR 85 between Saratoga on-ramp and Winchester off-ramp	3.50	2.81	4.00	3.16
2035	AM: SR 85 between Union on-ramp and Bascom off-ramp	3.40	2.74	3.10	2.53
	PM: SR 85 between Saratoga on-ramp and Winchester off-ramp	3.40	2.74	3.40	2.74

Notes:

(1) NAAQS for 1-hour CO is 35 ppm and CAAQS for 1-hour CO is 20 ppm. NAAQS and CAAQS for 8-hour CO is 9 ppm.
(2) 1-hour and 8-hour background concentrations were obtained from San Jose – Jackson Street station (158 E Jackson St, San Jose CA 95112).

[5] Nokes and Benson 1985 does not provide input parameters for standard deviation, stability class, or temperature adjustment that are specific to the San Francisco Bay Area. Of the regions covered by the model, the project corridor best fits the parameters of the Central Valley Region.

(3) 1-hour background concentration was recorded in 2010 - 2012 and was found to be 2.6 ppm.
(4) 8-hour background concentration was recorded in 2010 -2012 and was found to be 2.18 ppm.
(5) A persistence factor of 0.7 was used to convert 1-hour CO concentration to 8-hour CO concentration.

3.3.3 Qualitative PM "Hot-Spot" Analysis

A qualitative particulate matter hot spot analysis is required for transportation projects that are funded or approved by the FHWA or the FTA and are in federal nonattainment or maintenance areas for PM_{10} or $PM_{2.5}$. This project is unclassified for the federal PM_{10} standards, so a qualitative PM_{10} hot spot analysis is not required for project-level conformity purposes.

The USEPA designated the SFBAAB as a federal nonattainment area for the new 35 $\mu g/m^3$ $PM_{2.5}$ standard, effective December 14, 2009. The USEPA issued a final rule in 2013 stating that the SFBAAB has attained the standard and proposing to suspend implementation plan requirements for the Bay Area. Regardless, for the time being, a $PM_{2.5}$ hot spot analysis is required for any project that is determined to be a Project of Air Quality Concern (POAQC) as defined in Title 40 CFR Part 93.

Interagency consultation with the Air Quality Conformity Task Force conducted in October 2011 concluded that the project is not a POAQC (see Appendix D). After the 2011 consultation, the project limits on US 101 in San Jose were changed, and an auxiliary lane was added to the proposed project on northbound SR 85 between South De Anza Boulevard and Stevens Creek Boulevard. The Task Force was informed about the project limit change as part of consultation on TIP Amendment 11-25 in May 2012, and the auxiliary lane as part of consultation on the 2013 TIP in February 2013 (see Appendix D). The project status remains not a project of air quality concern.

A $PM_{2.5}$ hot spot analysis is not required for this project. The project will conform with the SIP, including the localized impact analysis conducted with interagency consultation required by 40 CFR 93.116 and 93.123.

3.3.4 Ozone

As stated in Section 2.2.4, the BAAQMD adopted the 2010 CAP to plan for and achieve compliance with the federal and state O_3 standards. This project will not interfere with the strategy and will provide transportation benefits that reduce pollutant emissions, including precursors to the formation of O_3, by improving traffic operations and efficiency. This project is included in the Bay Area region's RTP (Section 2.2.6), which has undergone regional evaluation for conformity with federal air quality standards, including O_3.

3.4 CONSTRUCTION IMPACTS

The construction period is estimated at approximately 1.5 years. Construction is a source of dust emissions that can have temporary impacts on local air quality (i.e., exceedances of the state air quality standards for PM_{10} and $PM_{2.5}$). Construction emissions would result from heavy equipment use and off-road equipment and vehicle traffic. No significant earthmoving or cut and fill operations are anticipated with this project. Dust emissions would vary from day to day depending on the level of activity, the specific operations, and the prevailing weather.

Combustion emissions (NO_x, ROG, PM_{10} and CO) from construction equipment may also create a temporary impact on local air quality. Such equipment is typically diesel-fueled and can contribute NO_x, PM_{10}, and $PM_{2.5}$ emissions during the construction period.

The BAAQMD considers construction activities to be typically short-term or temporary in duration; however, project-generated emissions could represent a significant impact with respect to air quality and/or global climate change. Therefore, BAAQMD requires projects to quantify their construction emissions and compare the total daily average emissions to significance thresholds. The proposed project would involve standard construction techniques and require large-scale construction equipment and labor-intensive activities. General site activities and the duration of activity would include:

- Site preparation (clearing/grubbing) and mobilization of equipment and temporary construction facilities to the site (10 days)
- Structural Section Construction (90 days)
- Drainage Feature Construction (5 days)
- MBGR/Barrier Construction (40 days)
- Striping (30 days)
- Electrical Component Construction (90 days)
- Demobilization of equipment and temporary facilities (20 days)

If daily average emissions of construction-related criteria air pollutants or precursors would not exceed any of the construction significance thresholds, the project would result in a less-than-significant impact to air quality. If daily average emissions of construction-related criteria air pollutants or precursors would exceed any applicable significance thresholds, the proposed project would result in a significant impact to air quality and would require mitigation measures for emission reductions (BAAQMD 2011). Standard construction air quality control measures are described in Section 4.

Construction activities would result in short-term emissions of other criteria pollutants and toxic air contaminants from equipment exhaust. Exhaust emissions from construction equipment varies depending on the number and type of equipment used. The primary pollutants associated with exhaust emissions from construction equipment are O_3 precursors (ROG and NO_x), CO, $PM_{10,}$ and $PM_{2.5}$.

The expected emissions resulting from project construction were analyzed using the Sacramento Metropolitan Air Quality Management District's Roadway Construction Emissions Model (Version 7.1.4) with conservative assumptions regarding the duration and scope of construction. Appendix B presents the model output. As shown in Table 3-3, the project's construction-related emissions would be below the BAAQMD CEQA thresholds of significance for construction-related activities. Since the daily average emissions of construction-related criteria air pollutants or precursors would not exceed any applicable threshold of significance listed, the project would not result in a significant cumulative impact.

Table 3-3 Construction-Related Emission Estimates for the Build Alternative

	ROG	NOx	CO	PM_{10} Dust	PM_{10} Exhaust	$PM_{2.5}$ Dust	$PM_{2.5}$ Exhaust	CO_2
Construction (lbs/day)	4.9	41.7	30.4	55.6	2.2	11.6	1.9	5,904
BAAQMD CEQA Threshold (lbs/day)	**54**	**54**	**NA**	**BMP**	**82**	**BMP**	**54**	**NA**

BMP: The BAAQMD Adopted Air Quality CEQA Thresholds of Significance (May 2011) do not establish numerical thresholds for certain types of emissions; rather, they call for implementing Best Management Practices (BMPs) as control measures. Control measures are presented in Section 4.
NA: Not available.

3.5 MOBILE SOURCE AIR TOXICS

Mobile Source Air Toxics (MSATs) are addressed in a separate document (URS 2013a).

3.6 CLIMATE CHANGE

One of the main strategies in the Department's Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide (CO_2) from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0-25 miles per hour (see Figure 4 below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors GHG emissions, particularly CO_2, may be reduced.

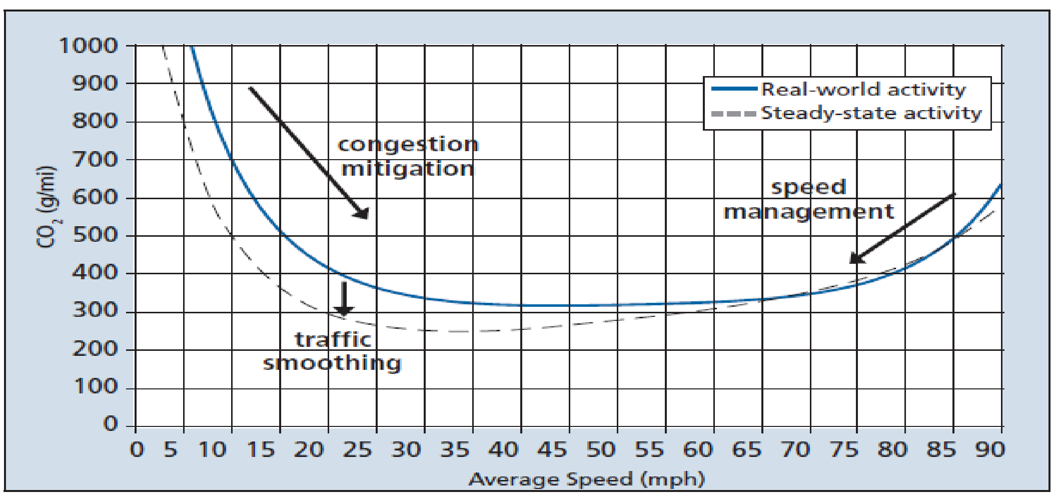

Figure 4. Possible Effect of Traffic Operation Strategies in Reducing On-Road CO2 Emission[6]

[6] Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010)<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>

The project has been designed to decrease future delays and travel times and increase vehicle speeds throughout the project corridor. Allowing SOVs to pay to use the express lanes would shift some traffic out of the general purpose lanes, contributing to improved operations and reduced congestion. The future increase in average vehicle speed with the Build Alternative (47.5 mph compared with 38.5 mph with the No Build Alternative in 2015, and 37.5 mph compared with 29.5 mph with the No Build Alternative in 2035) would reduce CO_2 emissions, as vehicles would be traveling in the range when emissions are lowest (see Figure 4). The second express lane would expand freeway capacity for HOVs for part of the 24.1-mile SR 85 corridor, and express lane tolls would provide an additional funding source for public transit and other mobility options in the corridor.

The project is also included in the 2013 RTP and 2013 TIP, which contain adopted strategies for greenhouse gas emissions from transportation sources. Specifically, RTP reference number 230550, "Climate Initiatives Program," is an adopted 5-year program for the Bay Area region involving outreach and education, promotion of safe routes to school, bikesharing, and funding for electric vehicles. The adopted TIP also demonstrates that the region will remain below all approved "vehicle emission budgets" through the RTP study year.

Existing, opening year and horizon year No Build, and opening year and horizon year Build CO_2 emissions were estimated using the latest EMFAC model (EMFAC2011) for vehicles in Santa Clara County. The vehicle miles traveled (VMT) per day and per year for opening year 2015 and horizon year 2035 would increase for the Build scenario compared to the No Build scenario. However, the average speeds would increase for the Build scenario compared to No Build in both 2015 and 2035. In opening year 2015, both the Build and No Build Alternatives would have higher GHG emissions than existing conditions (defined as 2007), and Build emissions would be higher than No Build. For horizon year 2035, the No Build Alternative would have higher GHG emissions than both existing conditions and the Build Alternative, and the Build Alternative would have lower emissions than existing conditions.. The speeds used in the emissions model and shown in Table 3-4 represent the worst-case peak hour speeds along the SR-85 corridor within the project limits. The VMT, associated speeds, and CO_2 emissions for years 2007, 2015, and 2035 are presented in Table 3-4. The modeling results are provided in Appendix C.

Table 3-4 Daily and Annual CO2 Emissions

Scenario	Peak Hour Speeds (mph)	Annual VMT	Annual CO_2 emissions (tonnes/yr)
Existing (2007)	43	836,973,758	338,873
Opening Year - No Build (2015)	38.5	933,055,022	350,586
Opening Year – Build (2015)	47.5	995,888,663	353,158
Horizon Year - No Build (2035)	29.5	999,656,046	351,624
Horizon Year - Build (2035)	37.5	1,101,694,727	336,021

Notes: The EMFAC 2011 model was run for Santa Clara County for year 2007, 2015, and 2035.

It should be noted that the numbers in Table 3-4 are not necessarily an accurate reflection of what the true CO_2 emissions will be because CO_2 emissions are dependent on other factors that are not part of the model such as the fuel mix, rate of acceleration, and the aerodynamics and efficiency of the vehicles. EMFAC model emission rates are only for direct engine-out CO_2 emissions, not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components. The CO_2 emissions presented in Table 3-4 are only useful for a comparison between the No Build and Build scenarios and should not be considered independently.

3.6.1 Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. An analysis of the expected project construction-related GHG emissions was conducted using conservative assumptions regarding duration and scope of construction, as described above.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Measures to reduce construction emissions are listed in Section 4 and include maintenance of construction equipment and vehicles, limiting of construction vehicle idling time, and scheduling and routing of construction traffic to reduce engine emissions.

CEQA Conclusion

While construction will result in a slight increase in GHG emissions during construction, it is anticipated that any increase in GHG emissions due to construction will be offset by the improvement in operational GHG emissions. While it is Caltrans's determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

3.6.2 Greenhouse Gas Reduction Strategies

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in GHG emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain CO_2 reduction goals:

system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 5: The Mobility Pyramid.

Figure 5 The Mobility Pyramid

Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participating the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the USEPA and ARB.

Caltrans is also working towards enhancing the state's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375 (Steinberg 2008), SB 391(Liu 2009) requires the state's long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State's transportation needs. Table 3-5 summarizes the Departmental and statewide efforts that Caltrans is implementing to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 3-5 Climate Change/CO_2 Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings Million Metric Tons(MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.045 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 0.36	4.2 3.6
Goods Movement	Office of Goods Movement	CalEPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

Notes: BT&H = Business, Transportation and Housing, CalEPA = California Environmental Protection Agency, ARB = California Air Resources Board, CEC = California Energy Commission, MMT = million metric tons, MPOs = Metropolitan Planning Organizations

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

- Caltrans and the CHP are working with regional agencies to implement intelligent transportation systems (ITS) to help manage the efficiency of the existing highway system. ITS is commonly referred to as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
- The project will include an additional express lane for part of the SR 85 corridor. In addition, eight park and ride facilities are located less than 0.5 mile from SR 85 and US 101 within the project limits to help manage the growth in demand for highway capacity (VTA 2012b).
- The project would incorporate the use of energy efficient lighting, which will be defined during project design.

3.6.3 Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011[7], outlining the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused

[7] http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation

by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop The California Climate Adaptation Strategy (Dec 2009)[8], which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report[9] to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates;
- The range of uncertainty in selected sea level rise projections;
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems; and
- A discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academies Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with

[8] http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF
[9] Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future (2012) is available at http://www.nap.edu/catalog.php?record_id=13389.

information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

All projects that have filed a Notice of Preparation, as of the date of EO S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed project is outside the coastal zone and direct impacts to transportation facilities due to projected sea level rise are not expected.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level affecting safety, maintenance and operational improvements of the system and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

Potential effects of climate change to the project and its immediately surrounding area are unknown. The majority of the project corridor (SR 85 and US 101 in southern San Jose) is well inland and unlikely to experience seawater intrusion. Parts of US 101 north of the SR 85/US 101 interchange in Mountain View are within 0.5 mile of San Francisco Bay and could experience seawater intrusion if Bay elevations increased.

Caltrans Special Provisions and Standard Specifications will include the requirement to minimize or eliminate dust through the application of water or dust palliatives. Implementation of the measures below could further minimize air quality emissions during construction. Control measures will be implemented as specified in Caltrans Standard Specifications, Section 14-9.01 “Air Pollution Control” and Section 14-9.02 “Dust Control.” Appropriate measures from among the following will be considered during development of Plans, Specifications, and Estimates (PS&E) for the project construction contract.

- Water all active construction areas daily.
- Cover all trucks hauling soil, sand, and other loose materials *or* require all trucks to maintain at least 2 feet of freeboard.
- Pave, apply water daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily or apply (nontoxic) soil binders to exposed stockpiles (dirt, sand, etc.)
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

In addition, pollutant emissions in construction equipment exhaust can be mitigated by the following:

- Keeping engines properly tuned;
- Limiting idling; and
- Avoiding unnecessary concurrent use of equipment.
- Using solar and battery powered signal boards.

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Appendix A
EMFAC 2011 and CO Modeling Results

2015

Performance Measure	No Build	Build	
AM Northbound			
Total Distance Traveled (VMT) (mi)	359,911	408,928	
Average Speed (mph)	37	53	
AM Southbound			
Total Distance Traveled (VMT) (mi)	200,617	205,373	
Average Speed (mph)	62	62	
PM Northbound			
Total Distance Traveled (VMT) (mi)	347,381	356,220	
Average Speed (mph)	58	59	
PM Southbound			
Total Distance Traveled (VMT) (mi)	514,936	548,141	
Average Speed (mph)	40	42	
Total peak VMT both directions	1,422,845	1,518,662	
Total daily VMT	2,811,947	3,001,308	
Total annual VMT	933,055,022	995,888,663	
Peak hour speed	38.5	47.5	Average of the primary travel direction in each peak

2035

Performance Measure	No Build	Build	
AM Northbound			
Total Distance Traveled (VMT) (mi)	367,024	418,602	
Average Speed (mph)	30	45	
AM Southbound			
Total Distance Traveled (VMT) (mi)	260,794	278,199	
Average Speed (mph)	58	60	
PM Northbound			
Total Distance Traveled (VMT) (mi)	398,216	436,357	
Average Speed (mph)	51	52	
PM Southbound			
Total Distance Traveled (VMT) (mi)	498,373	546,851	
Average Speed (mph)	29	30	
Total peak VMT both directions	1,524,407	1,680,009	
Total daily VMT	3,012,662	3,320,176	
Total annual VMT	999,656,046	1,101,694,727	
Peak hour speed	29.5	37.5	Average of the primary travel direction in each peak

Year	Segments	Volume per hour		Speed	
		No Build	Build	No Build	Build
2015	AM: SR 85 between Union on-ramp and Bascom off-ramp	7,145	8,083	16	61
	PM: SR 85 between Saratoga on-ramp and Winchester off-ramp	6,409	7,820	60	27
2035	AM: SR 85 between Union on-ramp and Bascom off-ramp	7,720	8,510	12	41
	PM: SR 85 between Saratoga on-ramp and Winchester off-ramp	6,738	8,155	9	11

Mainline CO Analysis - SR 85 Express Lanes

Model: Evening - (Wind Speed :1.0 m/s, stdev 5 deg, Stability Class 7, 9 C)

SR 85 Express Lanes - Caline4 Model Input and Result

Year	2015		2035	
Mainline Section	**SR-85 Union-Bascom**	**SR-85 Saratoga-Winchester**	**SR-85 Union-Bascom**	**SR-85 Saratoga-Winchester**
AM/PM	AM	PM	AM	PM
No Build (vph) - Northbound	7145	4841	7720	5595
No Build (vph) - Southbound	3543	6409	4672	6738
Build (vph) - Northbound	8083	5471	8510	7005
Build (vph) - Southbound	3564	7820	5217	7472
Caline Result - No Build (ppm)	1.7	0.9	0.8	0.8
Caline Result - Build (ppm)	1.2	1.4	0.5	0.8
Background CO 1hr (ppm)	2.60	2.60	2.60	2.60
Background CO 8hr (ppm)	2.18	2.18	2.18	2.18
1- hr concentration - No Build (ppm)	4.30	3.50	3.40	3.40
1- hr concentration - Build (ppm)	3.80	4.00	3.10	3.40
8-hr concentration - No Build (ppm)	3.37	2.81	2.74	2.74
8-hr concentration - Build (ppm)	3.02	3.16	2.53	2.74

Note: Background CO was taken from San Jose Jackson Street station (second highest data from the last three years)

Union-Bascom Links and Receptors

FID	Shape *	Id	Direction	UTM_X1	UTM_Y1	UTM_X2	UTM_Y2	Formatted X1	Formatted Y1	Formatted X2	Formatted Y2
0	Polyline	0	NB	593022.41	4123640.97	594771.57	4123263.46	3022.41	3640.97	4771.57	3263.46
1	Polyline	0	SB	592998.86	4123605.43	594755.57	4123239.25	2998.86	3605.43	4755.57	3239.25

FID	Shape *	Id	Height	UTM_X	UTM_Y	Formatted X	Formatted Y
0	Point	0	1.8	593183.94	4123666.29	3183.94	3666.29
1	Point	0	1.8	593361.74	4123615.49	3361.74	3615.49
2	Point	0	1.8	593541.13	4123559.92	3541.13	3559.92
3	Point	0	1.8	593714.16	4123518.65	3714.16	3518.65
4	Point	0	1.8	593911.01	4123480.55	3911.01	3480.55
5	Point	0	1.8	594112.63	4123434.51	4112.63	3434.51
6	Point	0	1.8	594350.75	4123390.06	4350.75	3390.06
7	Point	0	1.8	594565.07	4123350.37	4565.07	3350.37
8	Point	0	1.8	594711.12	4123221.79	4711.12	3221.79
9	Point	0	1.8	594465.05	4123256.71	4465.05	3256.71
10	Point	0	1.8	594157.08	4123328.15	4157.08	3328.15
11	Point	0	1.8	594015.79	4123358.31	4015.79	3358.31
12	Point	0	1.8	593768.14	4123410.70	3768.14	3410.70
13	Point	0	1.8	593496.68	4123464.67	3496.68	3464.67
14	Point	0	1.8	593196.64	4123517.06	3196.64	3517.06
15	Point	0	6	593737.92	4123424.46	3737.92	3424.46
16	Point	0	6	593741.89	4123444.30	3741.89	3444.30
17	Point	0	6	593745.60	4123463.35	3745.60	3463.35
18	Point	0	6	593748.64	4123479.62	3748.64	3479.62
19	Point	0	6	593752.61	4123498.28	3752.61	3498.28

Year	Peak Period	Hour	Case	Direction	VPH	Speed	CO EF (g/mi)
2015	AM	7-8	No Build	NB	7145	16	2.596554
2015	AM	7-8	No Build	SB	3543	63	1.638741
2015	AM	7-8	Build	NB	8083	61	1.58786
2015	AM	7-8	Build	SB	3564	63	1.638741
2035	AM	7-8	No Build	NB	7720	12	1.161227
2035	AM	7-8	No Build	SB	4672	63	0.686269
2035	AM	7-8	Build	NB	8510	60	0.658074
2035	AM	7-8	Build	SB	5217	65	0.705066

Saratoga-Winchester Links and Receptors

FID	Shape *	Id	Direction	UTM_X1	UTM_Y1	UTM_X2	UTM_Y2
0	Polyline	0	NB	588009.82	4126050.98	588257.86	4125882.31
1	Polyline	0	NB	588257.86	4125882.31	588658.05	4125670.64
2	Polyline	0	NB	588658.05	4125670.64	589101.22	4125515.20
3	Polyline	0	NB	589101.22	4125515.20	589591.50	4125218.20
4	Polyline	0	NB	589591.50	4125218.20	590603.27	4124657.29
5	Polyline	0	NB	590603.27	4124657.29	591394.90	4124227.60
6	Polyline	0	NB	591394.90	4124227.60	591839.40	4124083.67
7	Polyline	0	SB	591818.24	4124051.92	591367.39	4124210.67
8	Polyline	0	SB	591367.39	4124210.67	590533.42	4124665.75
9	Polyline	0	SB	590533.42	4124665.75	589614.78	4125175.87
10	Polyline	0	SB	589614.78	4125175.87	589178.75	4125440.45
11	Polyline	0	SB	589178.75	4125440.45	589051.75	4125506.07
12	Polyline	0	SB	589051.75	4125506.07	588615.71	4125660.59
13	Polyline	0	SB	588615.71	4125660.59	588202.96	4125874.37
14	Polyline	0	SB	588202.96	4125874.37	587982.83	4126033.12

Formatted X1	Formatted Y1	Formatted X2	Formatted Y2
8009.82	6050.98	8257.86	5882.31
8257.86	5882.31	8658.05	5670.64
8658.05	5670.64	9101.22	5515.20
9101.22	5515.20	9591.50	5218.20
9591.50	5218.20	10603.27	4657.29
10603.27	4657.29	11394.90	4227.60
11394.90	4227.60	11839.40	4083.67
11818.24	4051.92	11367.39	4210.67
11367.39	4210.67	10533.42	4665.75
10533.42	4665.75	9614.78	5175.87
9614.78	5175.87	9178.75	5440.45
9178.75	5440.45	9051.75	5506.07
9051.75	5506.07	8615.71	5660.59
8615.71	5660.59	8202.96	5874.37
8202.96	5874.37	7982.83	6033.12

FID	Shape *	Id	Height	UTM_X	UTM_Y
0	Point	0	1.8	588120.4119	4126042.648
1	Point	0	1.8	588349.0124	4125869.61
2	Point	0	1.8	588626.8254	4125709.272
3	Point	0	1.8	589018.9387	4125566.397
4	Point	0	1.8	589488.8397	4125306.178
5	Point	0	1.8	590239.3318	4124882.095
6	Point	0	1.8	590564.0028	4124708.863
7	Point	0	1.8	590959.0436	4124520.66
8	Point	0	1.8	591526.3701	4124205.186
9	Point	0	1.8	591539.1899	4124111.935
10	Point	0	1.8	590986.7388	4124355.352
11	Point	0	1.8	590467.096	4124646.395
12	Point	0	1.8	590035.2952	4124894.045
13	Point	0	1.8	589500.8358	4125184.029
14	Point	0	1.8	589034.1098	4125445.438
15	Point	0	1.8	588658.4008	4125598.897
16	Point	0	1.8	588293.275	4125777.755
17	Point	0	6	589820.4531	4125004.112
18	Point	0	6	589847.9698	4125052.796
19	Point	0	6	589863.8448	4125086.662

Formatted X	Formatted Y
8120.41	6042.65
8349.01	5869.61
8626.83	5709.27
9018.94	5566.40
9488.84	5306.18
10239.33	4882.09
10564.00	4708.86
10959.04	4520.66
11526.37	4205.19
11539.19	4111.94
10986.74	4355.35
10467.10	4646.39
10035.30	4894.05
9500.84	5184.03
9034.11	5445.44
8658.40	5598.90
8293.28	5777.76
9820.45	5004.11
9847.97	5052.80
9863.84	5086.66

Year	Peak Period	Hour	Case	Direction	VPH	Speed	CO EF (g/mi)
2015	PM	5-6	No Build	SB	6409	60	1.562419
2015	PM	5-6	No Build	NB	4841	59	1.551211
2015	PM	5-6	Build	SB	7820	27	1.989103
2015	PM	5-6	Build	NB	5471	61	1.58786
2035	PM	5-6	No Build	SB	6738	9	1.264519
2035	PM	5-6	No Build	NB	5595	34	0.749964
2035	PM	5-6	Build	SB	7472	11	1.193899
2035	PM	5-6	Build	NB	7005	34	0.749964

Speeds are presented in multiple segments over the secti
The segment with minimum peak speed is used

on

Region_Ty	Region	CalYr	Season	Veh	Fuel	Veh & Tech	MdlYr	Speed	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	CO2(Pavley I + LCFS)_RUNEX	PM10_RUNEX	PM2_5_RUNEX	SOx_RUNEX
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	05 MPH	0.374800546	0.501467988	3.755199181	1.099622732	1389.966543	1240.364132	0.026235539	0.024136315	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	10 MPH	0.251008503	0.332430084	3.159292286	0.861294064	1044.545089	933.6452661	0.018566132	0.017075399	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	15 MPH	0.165808018	0.219748743	2.667151724	0.678559013	806.7200792	721.2417535	0.013140842	0.012082493	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	20 MPH	0.113547306	0.151024188	2.314163514	0.559191161	643.150472	574.8444067	0.0094185	0.008657595	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	25 MPH	0.089543913	0.118001202	2.065083833	0.516481379	539.640023	482.8347865	0.007692698	0.00706997	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	30 MPH	0.073848368	0.096539211	1.875132234	0.48422736	469.3650533	420.332664	0.00656487	0.006032572	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	35 MPH	0.063672186	0.082646375	1.727991297	0.462569845	422.2114888	378.3647122	0.0058767	0.005399591	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	40 MPH	0.05739644	0.074081721	1.618483908	0.449219129	393.1300236	352.440166	0.005539543	0.005089396	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	45 MPH	0.054282501	0.069696465	1.545517834	0.44321468	379.017829	339.8053669	0.00550217	0.005054806	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	50 MPH	0.054018682	0.068921225	1.505237474	0.445563636	377.5160111	338.3825249	0.005736621	0.00527005	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	55 MPH	0.056385575	0.071681222	1.50637965	0.458672733	389.5790619	349.0048677	0.006231141	0.005724244	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	60 MPH	0.062407057	0.078919622	1.562419016	0.477729641	415.0365996	371.5444888	0.006975179	0.00640754	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	65 MPH	0.072265167	0.090959877	1.689621625	0.492509261	459.0165265	410.5145187	0.007887914	0.007245492	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	70 MPH	0.097276834	0.119844867	2.189106755	0.569470954	502.8551181	444.7249722	0.009182381	0.008429779	0.004472393

INTERPOLATED SPEED VALUES

Region_Ty	Region	CalYr	Season	Veh	Fuel	Veh & Tech	MdlYr	Speed	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	CO2(Pavley I + LCFS)_RUNEX	PM10_RUNEX	PM2_5_RUNEX	SOx_RUNEX
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	15 MPH 15	0.165808018	0.219748743	2.667151724	0.678559013	806.7200792	721.2417535	0.013140842	0.012082493	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	20 MPH 20	0.113547306	0.151024188	2.314163514	0.559191161	643.150472	574.8444067	0.0094185	0.008657595	0.004472393
							Interpolated EF:	16 MPH 16	0.155355875	0.206003832	2.596554082	0.654685443	774.0061578	691.9622842	0.012396373	0.011397513	0.004472393

Region_Ty	Region	CalYr	Season	Veh	Fuel	Veh & Tech	MdlYr	Speed	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	CO2(Pavley I + LCFS)_RUNEX	PM10_RUNEX	PM2_5_RUNEX	SOx_RUNEX
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	25 MPH 25	0.089543913	0.118001202	2.065083833	0.516481379	539.640023	482.8347865	0.007692698	0.00706997	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	30 MPH 30	0.073848368	0.096539211	1.875132234	0.48422736	469.3650533	420.332664	0.00656487	0.006032572	0.004472393
							Interpolated EF:	27 MPH 27	0.083265695	0.109416406	1.989103193	0.503579771	511.5300351	457.8339375	0.007241567	0.00665501	0.004472393

Region_Ty	Region	CalYr	Season	Veh	Fuel	Veh & Tech	MdlYr	Speed	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	CO2(Pavley I + LCFS)_RUNEX	PM10_RUNEX	PM2_5_RUNEX	SOx_RUNEX
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	55 MPH 55	0.056385575	0.071681222	1.50637965	0.458672733	389.5790619	349.0048677	0.006231141	0.005724244	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	60 MPH 60	0.062407057	0.078919622	1.562419016	0.477729641	415.0365996	371.5444888	0.006975179	0.00640754	0.004472393
							Interpolated EF:	59 MPH 59	0.061202761	0.077471942	1.551211142	0.473918259	409.9450921	367.0365646	0.006826371	0.006270881	0.004472393

County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	60 MPH 60	0.062407057	0.078919622	1.562419016	0.477729641	415.0365996		371.5444888	0.006975179	0.00640754	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	65 MPH 65	0.072265167	0.090959877	1.689621625	0.492509261	459.0165265		410.5145187	0.007887914	0.007245492	0.004472393
							Interpolated EF:	61 MPH 61	0.064378679	0.081327673	1.587859538	0.480685565	423.832585		379.3384948	0.007157726	0.00657513	0.004472393

County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	60 MPH 60	0.062407057	0.078919622	1.562419016	0.477729641	415.0365996		371.5444888	0.006975179	0.00640754	0.004472393
County	Santa Clara	2015	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	65 MPH 65	0.072265167	0.090959877	1.689621625	0.492509261	459.0165265		410.5145187	0.007887914	0.007245492	0.004472393
							Interpolated EF:	63 MPH 63	0.068321923	0.086143775	1.638740581	0.486597413	441.4245558		394.9265067	0.00752282	0.006910311	0.004472393

Region_Type	Region	CalYr	Season	Veh	Fuel	Veh & Tech	MdlYr	Speed	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	CO2(Pavley I + LCFS)_RUNEX	PM10_RUNEX	PM2_5_RUNEX	SOx_RUNEX
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	05 MPH	0.183749451	0.251815098	1.416307214	0.389601844	1409.400885	959.3694659	0.016634401	0.015401972	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	10 MPH	0.119648412	0.162742012	1.226571346	0.314555111	1061.325399	726.9663967	0.011573695	0.010709718	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	15 MPH	0.074974639	0.102896536	1.063210806	0.253092043	820.8869542	563.0045506	0.008416718	0.007784485	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	20 MPH	0.048269103	0.067156511	0.940383174	0.208191122	654.2299801	448.2366074	0.00642	0.005935181	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	25 MPH	0.039277081	0.053649611	0.859793155	0.188935474	550.4487503	378.8252632	0.005233822	0.004836373	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	30 MPH	0.033348216	0.044856691	0.793879069	0.173853063	479.7979965	331.435393	0.004527087	0.004181478	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	35 MPH	0.029500648	0.039173052	0.738984842	0.162909253	432.244477	299.4184161	0.004149168	0.003830839	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	40 MPH	0.027216946	0.035767455	0.695757999	0.15531831	402.7865068	279.4468448	0.004015202	0.003705776	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	45 MPH	0.026275809	0.034218839	0.664847681	0.150843985	388.3495067	269.4873317	0.004077339	0.003761928	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	50 MPH	0.026603806	0.034378946	0.644954534	0.149797645	386.5899246	268.0161983	0.004310313	0.003975876	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	55 MPH	0.028388999	0.036393898	0.641104333	0.152785626	398.4652661	275.6476882	0.00470441	0.00433862	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	60 MPH	0.032096101	0.040770479	0.658074316	0.160158338	423.825381	292.3266072	0.005278958	0.004867968	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	65 MPH	0.038163655	0.048138661	0.70506624	0.160491813	467.7819689	321.3739137	0.005940037	0.005477648	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	70 MPH	0.049153395	0.061438986	0.899457968	0.180721294	510.6087977	348.8265248	0.006658614	0.006139811	0.004545989

INTERPOLATED SPEED VALUES

Region_Type	Region	CalYr	Season	Veh	Fuel	Veh & Tech	MdlYr	Speed	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	CO2(Pavley I + LCFS)_RUNEX	PM10_RUNEX	PM2_5_RUNEX	SOx_RUNEX
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	05 MPH 5	0.183749451	0.251815098	1.416307214	0.389601844	1409.400885	959.3694659	0.016634401	0.015401972	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	10 MPH 10	0.119648412	0.162742012	1.226571346	0.314555111	1061.325399	726.9663967	0.011573695	0.010709718	0.004545989
							Interpolated EF:	9 MPH 9	0.13246862	0.180556629	1.264518519	0.329564458	1130.940496	773.4470106	0.012585837	0.011648169	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	10 MPH 10	0.119648412	0.162742012	1.226571346	0.314555111	1061.325399	726.9663967	0.011573695	0.010709718	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	15 MPH 15	0.074974639	0.102896536	1.063210806	0.253092043	820.8869542	563.0045506	0.008416718	0.007784485	0.004545989
							Interpolated EF:	11 MPH 11	0.110713657	0.150772917	1.193899238	0.302262497	1013.23771	694.1740275	0.0109423	0.010124671	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	10 MPH 10	0.119648412	0.162742012	1.226571346	0.314555111	1061.325399	726.9663967	0.011573695	0.010709718	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	15 MPH 15	0.074974639	0.102896536	1.063210806	0.253092043	820.8869542	563.0045506	0.008416718	0.007784485	0.004545989
							Interpolated EF:	12 MPH 12	0.101778903	0.138803822	1.16122713	0.289969884	965.1500209	661.3816583	0.010310905	0.009539624	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	30 MPH 30	0.033348216	0.044856691	0.793879069	0.173853063	479.7979965	331.435393	0.004527087	0.004181478	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	35 MPH 35	0.029500648	0.039173052	0.738984842	0.162909253	432.244477	299.4184161	0.004149168	0.003830839	0.004545989
							Interpolated EF:	34 MPH 34	0.030270162	0.04030978	0.749963687	0.165098015	441.7551809	305.8218115	0.004224751	0.003900967	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	60 MPH 60	0.032096101	0.040770479	0.658074316	0.160158338	423.825381	292.3266072	0.005278958	0.004867968	0.004545989
County	Santa Clara	2035	Annual	AllVehicles Combined	TOT	AllVehicles Combined - TOT	AllMYr	65 MPH 65	0.038163655	0.048138661	0.70506624	0.160491813	467.7819689	321.3739137	0.005940037	0.005477648	0.004545989
							Interpolated EF:	63 MPH 63	0.035736633	0.045191388	0.68626947	0.160358423	450.1993338	309.7549911	0.005675605	0.005233776	0.004545989

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: SR 85 Hot Spots Union-Basc NB 2015
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1 M/S	Z0=	100 CM	ALT=	0 (M)
BRG=	WORST CASE	VD=	0 CM/S		
CLAS=	7 (G)	VS=	0 CM/S		
MIXH=	1000 M	AMB=	0 PPM		
SIGTH=	5 DEGREES	TEMP=	9 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link	A *	3022	3641	4772	3263	*	AG	7145	2.6	0	10
B. Link	B *	2999	3605	4756	3239	*	AG	3543	1.6	0	10

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1 Recpt	1 *	3184	3666	1.8
2 Recpt	2 *	3362	3615	1.8
3 Recpt	3 *	3541	3560	1.8
4 Recpt	4 *	3714	3519	1.8
5 Recpt	5 *	3911	3481	1.8
6 Recpt	6 *	4113	3435	1.8
7 Recpt	7 *	4351	3390	1.8
8 Recpt	8 *	4565	3350	1.8
9 Recpt	9 *	4711	3222	1.8
10 Recpt	10 *	4465	3257	1.8
11 Recpt	11 *	4157	3328	1.8
12 Recpt	12 *	4016	3358	1.8
13 Recpt	13 *	3768	3411	1.8
14 Recpt	14 *	3497	3465	1.8
15 Recpt	15 *	3197	3517	1.8
16 Recpt	16 *	3738	3424	6
17 Recpt	17 *	3742	3444	6
18 Recpt	18 *	3746	3463	6
19 Recpt	19 *	3749	3480	6
20 Recpt	20 *	3753	3498	6

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR 85 Hot Spots Union-Basc NB 2015
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B
1 Recpt	1 *	109	*	0.4	*	0.3	0.1
2 Recpt	2 *	109	*	0.5	*	0.4	0.1
3 Recpt	3 *	108	*	0.6	*	0.5	0.1
4 Recpt	4 *	108	*	0.6	*	0.5	0.1
5 Recpt	5 *	109	*	0.5	*	0.4	0.1
6 Recpt	6 *	110	*	0.5	*	0.5	0.1
7 Recpt	7 *	276	*	0.5	*	0.4	0.1
8 Recpt	8 *	276	*	0.5	*	0.4	0.1
9 Recpt	9 *	288	*	0.5	*	0.4	0.2
10 Recpt	10 *	290	*	0.4	*	0.3	0.1
11 Recpt	11 *	290	*	0.4	*	0.3	0.1
12 Recpt	12 *	290	*	0.4	*	0.3	0.1
13 Recpt	13 *	291	*	0.4	*	0.3	0.1
14 Recpt	14 *	94	*	0.4	*	0.3	0.1
15 Recpt	15 *	94	*	0.4	*	0.3	0.1

16	Recpt	16	*	95	*	0.5	*	0.3	0.2
17	Recpt	17	*	288	*	0.7	*	0.3	0.4
18	Recpt	18	*	288	*	0.6	*	0.6	0
19	Recpt	19	*	100	*	1.7	*	1.7	0
20	Recpt	20	*	107	*	0.8	*	0.7	0.1

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: SR 85 Hot Spots Union-Bascom Build 2015
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1 M/S	Z0=	100 CM	ALT=	0 (M)
BRG= WORST	CASE	VD=	0 CM/S		
CLAS=	7 (G)	VS=	0 CM/S		
MIXH=	1000 M	AMB=	0 PPM		
SIGTH=	5 DEGREES	TEMP=	9 DEGREE	(C)	

II. LINK VARIABLES

LINK	*	LINK	COORDINATES	(M)	*	EF	H	W			
DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	(G/MI)	(M)	(M)
A. Link	A *	3022	3641	4772	3263 *	AG	8083	1.6	0	10	
B. Link	B *	2999	3605	4756	3239 *	AG	3564	1.6	0	10	

III. RECEPTOR LOCATIONS

*	COORDINATES	(M)		
RECEPTOR	*	X	Y	Z
1 Recpt	1 *	3184	3666	1.8
2 Recpt	2 *	3362	3615	1.8
3 Recpt	3 *	3541	3560	1.8
4 Recpt	4 *	3714	3519	1.8
5 Recpt	5 *	3911	3481	1.8
6 Recpt	6 *	4113	3435	1.8
7 Recpt	7 *	4351	3390	1.8
8 Recpt	8 *	4565	3350	1.8
9 Recpt	9 *	4711	3222	1.8
10 Recpt	10 *	4465	3257	1.8
11 Recpt	11 *	4157	3328	1.8
12 Recpt	12 *	4016	3358	1.8
13 Recpt	13 *	3768	3411	1.8
14 Recpt	14 *	3497	3465	1.8
15 Recpt	15 *	3197	3517	1.8
16 Recpt	16 *	3738	3424	6
17 Recpt	17 *	3742	3444	6
18 Recpt	18 *	3746	3463	6
19 Recpt	19 *	3749	3480	6
20 Recpt	20 *	3753	3498	6

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR 85 Hot Spots Union-Bascom Build 2015
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

*	*	PRED	*	CONC/LINK	
*	BRG	*	CONC	*	(PPM)
RECEPTOR	*	(DEG)	*	(PPM)	* A B
1 Recpt	1 *	109 *	0.3 *	0.2	0.1
2 Recpt	2 *	109 *	0.3 *	0.3	0.1
3 Recpt	3 *	108 *	0.4 *	0.3	0.1
4 Recpt	4 *	108 *	0.4 *	0.4	0.1
5 Recpt	5 *	109 *	0.4 *	0.3	0.1
6 Recpt	6 *	110 *	0.4 *	0.3	0.1
7 Recpt	7 *	276 *	0.4 *	0.3	0.1
8 Recpt	8 *	276 *	0.4 *	0.3	0.1
9 Recpt	9 *	288 *	0.4 *	0.2	0.2
10 Recpt	10 *	289 *	0.3 *	0.2	0.1
11 Recpt	11 *	290 *	0.3 *	0.2	0.1
12 Recpt	12 *	290 *	0.3 *	0.2	0.1
13 Recpt	13 *	291 *	0.3 *	0.2	0.1
14 Recpt	14 *	94 *	0.3 *	0.2	0.1
15 Recpt	15 *	94 *	0.3 *	0.2	0.1
16 Recpt	16 *	95 *	0.4 *	0.2	0.2
17 Recpt	17 *	288 *	0.6 *	0.2	0.4
18 Recpt	18 *	288 *	0.4 *	0.4	0
19 Recpt	19 *	100 *	1.2 *	1.2	0
20 Recpt	20 *	107 *	0.6 *	0.5	0.1

CALINE4:	CALIFORNIA	LINE	SOURCE	DISPERSION	MODEL			
JUNE	1989	VERSION						
PAGE	1							
JOB:	SR	85	Hot	Spots	Union-Bascom	NB	2035	
RUN:	Hour	1	(WORST	CASE	ANGLE)			
POLLUTANT:	Carbon	Monoxide						

I.	SITE	VARIABLES							
U=		1	M/S	Z0=	100	CM	ALT=	0	(M)
BRG=	WORST	CASE		VD=	0	CM/S			
CLAS=		7	(G)	VS=	0	CM/S			
MIXH=		1000	M	AMB=	0	PPM			
SIGTH=		5	DEGREES	TEMP=	9	DEGREE	(C)		

II.	LINK	VARIABLES											
LINK	*	LINK	COORDINATES	(M)	*	EF	H	W					
DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	(G/MI)	(M)	(M)		
A.	Link	A	*	3022	3641	4772	3263	*	AG	7720	1.2	0	10
B.	Link	B	*	2999	3605	4756	3239	*	AG	4672	0.7	0	10

III.	RECEPTOR	LOCATIONS				
*	COORDINATES	(M)				
RECEPTOR	*	X	Y	Z		
1	Recpt	1	*	3184	3666	1.8
2	Recpt	2	*	3362	3615	1.8
3	Recpt	3	*	3541	3560	1.8
4	Recpt	4	*	3714	3519	1.8
5	Recpt	5	*	3911	3481	1.8
6	Recpt	6	*	4113	3435	1.8
7	Recpt	7	*	4351	3390	1.8
8	Recpt	8	*	4565	3350	1.8
9	Recpt	9	*	4711	3222	1.8
10	Recpt	10	*	4465	3257	1.8
11	Recpt	11	*	4157	3328	1.8
12	Recpt	12	*	4016	3358	1.8
13	Recpt	13	*	3768	3411	1.8
14	Recpt	14	*	3497	3465	1.8
15	Recpt	15	*	3197	3517	1.8
16	Recpt	16	*	3738	3424	6
17	Recpt	17	*	3742	3444	6
18	Recpt	18	*	3746	3463	6
19	Recpt	19	*	3749	3480	6
20	Recpt	20	*	3753	3498	6

CALINE4:	CALIFORNIA	LINE	SOURCE	DISPERSION	MODEL			
JUNE	1989	VERSION						
PAGE	2							
JOB:	SR	85	Hot	Spots	Union-Bascom	NB	2035	
RUN:	Hour	1	(WORST	CASE	ANGLE)			
POLLUTANT:	Carbon	Monoxide						

IV.	MODEL	RESULTS	(WORST	CASE	WIND	ANGLE	)		
*	*	PRED	*	CONC/LINK					
*	BRG	*	CONC	*	(PPM)				
RECEPTOR	*	(DEG)	*	(PPM)	*	A	B		
1	Recpt	1	*	109	*	0.2	*	0.2	0
2	Recpt	2	*	109	*	0.2	*	0.2	0
3	Recpt	3	*	108	*	0.3	*	0.2	0
4	Recpt	4	*	108	*	0.3	*	0.2	0
5	Recpt	5	*	109	*	0.3	*	0.2	0
6	Recpt	6	*	110	*	0.3	*	0.2	0
7	Recpt	7	*	276	*	0.3	*	0.2	0
8	Recpt	8	*	276	*	0.2	*	0.2	0
9	Recpt	9	*	288	*	0.3	*	0.2	0.1
10	Recpt	10	*	290	*	0.2	*	0.1	0.1
11	Recpt	11	*	290	*	0.2	*	0.1	0.1
12	Recpt	12	*	290	*	0.2	*	0.1	0.1
13	Recpt	13	*	291	*	0.2	*	0.1	0.1
14	Recpt	14	*	94	*	0.2	*	0.1	0.1
15	Recpt	15	*	94	*	0.2	*	0.1	0.1
16	Recpt	16	*	95	*	0.2	*	0.1	0.1
17	Recpt	17	*	288	*	0.4	*	0.2	0.2
18	Recpt	18	*	288	*	0.3	*	0.3	0
19	Recpt	19	*	100	*	0.8	*	0.8	0
20	Recpt	20	*	107	*	0.4	*	0.4	0.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: SR 85 Hot Spots Union-Bascom Build 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=		1 M/S	Z0=	100 CM	ALT=	0 (M)
BRG=	WORST	CASE	VD=	0 CM/S		
CLAS=		7 (G)	VS=	0 CM/S		
MIXH=		1000 M	AMB=	0 PPM		
SIGTH=		5 DEGREES	TEMP=	9 DEGREE	(C)	

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	EF TYPE	H VPH	W (G/MI)	(M)	(M)
A. Link	A	*	3022	3641	4772	3263 *	AG	8510	0.7	0	10
B. Link	B	*	2999	3605	4756	3239 *	AG	5217	0.7	0	10

III. RECEPTOR LOCATIONS

RECEPTOR	* COORDINATES (M)	X	Y	Z
1 Recpt	1 *	3184	3666	1.8
2 Recpt	2 *	3362	3615	1.8
3 Recpt	3 *	3541	3560	1.8
4 Recpt	4 *	3714	3519	1.8
5 Recpt	5 *	3911	3481	1.8
6 Recpt	6 *	4113	3435	1.8
7 Recpt	7 *	4351	3390	1.8
8 Recpt	8 *	4565	3350	1.8
9 Recpt	9 *	4711	3222	1.8
10 Recpt	10 *	4465	3257	1.8
11 Recpt	11 *	4157	3328	1.8
12 Recpt	12 *	4016	3358	1.8
13 Recpt	13 *	3768	3411	1.8
14 Recpt	14 *	3497	3465	1.8
15 Recpt	15 *	3197	3517	1.8
16 Recpt	16 *	3738	3424	6
17 Recpt	17 *	3742	3444	6
18 Recpt	18 *	3746	3463	6
19 Recpt	19 *	3749	3480	6
20 Recpt	20 *	3753	3498	6

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR 85 Hot Spots Union-Bascom Build 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG *	PRED (DEG)	* CONC * (PPM)	CONC/LINK (PPM) A	B
1 Recpt	1 *	110 *	0.1 *	0.1	0
2 Recpt	2 *	109 *	0.2 *	0.1	0.1
3 Recpt	3 *	109 *	0.2 *	0.1	0.1
4 Recpt	4 *	108 *	0.2 *	0.2	0.1
5 Recpt	5 *	109 *	0.2 *	0.1	0.1
6 Recpt	6 *	110 *	0.2 *	0.1	0.1
7 Recpt	7 *	275 *	0.2 *	0.1	0.1
8 Recpt	8 *	275 *	0.2 *	0.1	0.1
9 Recpt	9 *	288 *	0.2 *	0.1	0.1
10 Recpt	10 *	289 *	0.2 *	0.1	0.1
11 Recpt	11 *	289 *	0.2 *	0.1	0.1
12 Recpt	12 *	290 *	0.2 *	0.1	0.1
13 Recpt	13 *	291 *	0.2 *	0.1	0.1
14 Recpt	14 *	95 *	0.2 *	0.1	0.1
15 Recpt	15 *	95 *	0.2 *	0.1	0.1
16 Recpt	16 *	291 *	0.2 *	0.1	0.1
17 Recpt	17 *	287 *	0.4 *	0.1	0.3
18 Recpt	18 *	98 *	0.2 *	0.2	0
19 Recpt	19 *	100 *	0.5 *	0.5	0
20 Recpt	20 *	108 *	0.3 *	0.2	0.1

CALINE4:	CALIFORNIA	LINE	SOURCE	DISPERSION	MODEL		
JUNE	1989	VERSION					
PAGE	1						
JOB:	SR		85 Hot	Spots	Sar-Winc	NB	2015
RUN:	Hour		1 (WORST	CASE	ANGLE)		
POLLUTANT:	Carbon	Monoxide					

I. SITE VARIABLES

U=		1 M/S	Z0=	100 CM	ALT=	0 (M)
BRG=	WORST	CASE	VD=	0 CM/S		
CLAS=		7 (G)	VS=	0 CM/S		
MIXH=		1000 M	AMB=	0 PPM		
SIGTH=		5 DEGREES	TEMP=	9 DEGREE	(C)	

II. LINK VARIABLES

LINK	*	LINK	COORDINATES	(M)	*	EF	H	W				
DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	(G/MI)	(M)	(M)	
A.	Link	A	*	8010	6051	8258	5882 *	AG	4841	1.6	0	10
B.	Link	B	*	8258	5882	8658	5671 *	AG	4841	1.6	0	10
C.	Link	C	*	8658	5671	9101	5515 *	AG	4841	1.6	0	10
D.	Link	D	*	9101	5515	9592	5218 *	AG	4841	1.6	0	10
E.	Link	E	*	9592	5218	10603	4657 *	AG	4841	1.6	0	10
F.	Link	F	*	10603	4657	11395	4228 *	AG	4841	1.6	0	10
G.	Link	G	*	11395	4228	11839	4084 *	AG	4841	1.6	0	10
H.	Link	H	*	11818	4052	11367	4211 *	AG	6409	1.6	0	10
I.	Link	I	*	11367	4211	10533	4666 *	AG	6409	1.6	0	10
J.	Link	J	*	10533	4666	9615	5176 *	AG	6409	1.6	0	10
K.	Link	K	*	9615	5176	9179	5440 *	AG	6409	1.6	0	10
L.	Link	L	*	9179	5440	9052	5506 *	AG	6409	1.6	0	10
M.	Link	M	*	9052	5506	8616	5661 *	AG	6409	1.6	0	10
N.	Link	N	*	8616	5661	8203	5874 *	AG	6409	1.6	0	10
O.	Link	O	*	8203	5874	7983	6033 *	AG	6409	1.6	0	10

CALINE4:	CALIFORNIA	LINE	SOURCE	DISPERSION	MODEL		
JUNE	1989	VERSION					
PAGE	2						
JOB:	SR		85 Hot	Spots	Sar-Winc	NB	2015
RUN:	Hour		1 (WORST	CASE	ANGLE)		
POLLUTANT:	Carbon	Monoxide					

III. RECEPTOR LOCATIONS

*	COORDINATES	(M)		
RECEPTOR	*	X	Y	Z
1 Recpt	1 *	8120	6043	1.8
2 Recpt	2 *	8349	5870	1.8
3 Recpt	3 *	8627	5709	1.8
4 Recpt	4 *	9019	5566	1.8
5 Recpt	5 *	9489	5306	1.8
6 Recpt	6 *	10239	4882	1.8
7 Recpt	7 *	10564	4709	1.8
8 Recpt	8 *	10959	4521	1.8
9 Recpt	9 *	11526	4205	1.8
10 Recpt	10 *	11539	4112	1.8
11 Recpt	11 *	10987	4355	1.8
12 Recpt	12 *	10467	4646	1.8
13 Recpt	13 *	10035	4894	1.8
14 Recpt	14 *	9501	5184	1.8
15 Recpt	15 *	9034	5445	1.8
16 Recpt	16 *	8658	5599	1.8
17 Recpt	17 *	8293	5778	1.8
18 Recpt	18 *	9820	5004	6
19 Recpt	19 *	9848	5053	6
20 Recpt	20 *	9864	5087	6

CALINE4:	CALIFORNIA	LINE	SOURCE	DISPERSION	MODEL		
JUNE	1989	VERSION					
PAGE	3						
JOB:	SR		85 Hot	Spots	Sar-Winc	NB	2015
RUN:	Hour		1 (WORST	CASE	ANGLE)		

POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

*	*	PRED	*	CONC/LINK							
*	BRG	*	CONC	*	(PPM)						
RECEPTOR	* (DEG)	* (PPM)	*	A	B	C	D	E	F	G	H
1 Recpt 1 *	122 *	0.2 *		0	0	0.1	0	0	0	0	0
2 Recpt 2 *	119 *	0.4 *		0	0	0.1	0	0	0	0	0
3 Recpt 3 *	117 *	0.6 *		0	0	0.2	0	0	0	0	0
4 Recpt 4 *	123 *	0.7 *		0	0	0.1	0.3	0.1	0	0	0
5 Recpt 5 *	293 *	0.6 *		0	0	0	0.2	0	0	0	0
6 Recpt 6 *	294 *	0.5 *		0	0	0	0	0.2	0	0	0
7 Recpt 7 *	294 *	0.4 *		0	0	0	0	0.2	0	0	0
8 Recpt 8 *	293 *	0.3 *		0	0	0	0	0.1	0	0	0
9 Recpt 9 *	123 *	0.4 *		0	0	0	0	0	0	0.2	0.2
10 Recpt 10 *	301 *	0.6 *		0	0	0	0	0	0.1	0	0.1
11 Recpt 11 *	305 *	0.3 *		0	0	0	0	0.1	0	0	0
12 Recpt 12 *	112 *	0.3 *		0	0	0	0	0	0.1	0	0
13 Recpt 13 *	113 *	0.4 *		0	0	0	0	0	0.1	0	0
14 Recpt 14 *	113 *	0.3 *		0	0	0	0	0.1	0	0	0
15 Recpt 15 *	300 *	0.3 *		0	0.1	0	0	0	0	0	0
16 Recpt 16 *	307 *	0.3 *		0	0.1	0	0	0	0	0	0
17 Recpt 17 *	109 *	0.4 *		0	0	0.1	0	0	0	0	0
18 Recpt 18 *	308 *	0.3 *		0	0	0	0.1	0	0	0	0
19 Recpt 19 *	121 *	0.9 *		0	0	0	0	0	0	0	0
20 Recpt 20 *	295 *	0.5 *		0	0	0	0.1	0.2	0	0	0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: SR 85 Hot Spots Sar-Winc NB 2015
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

*	CONC/LINK						
*	(PPM)						
RECEPTOR	*	I	J	K	L	M	N O
1 Recpt 1 *	0	0	0	0	0.1	0	0
2 Recpt 2 *	0	0	0	0	0.1	0	0
3 Recpt 3 *	0	0	0.1	0	0.1	0	0
4 Recpt 4 *	0	0.1	0.1	0	0	0	0
5 Recpt 5 *	0	0	0.1	0.1	0.1	0	0
6 Recpt 6 *	0	0.1	0	0	0	0	0
7 Recpt 7 *	0	0.2	0	0	0	0	0
8 Recpt 8 *	0	0.1	0	0	0	0	0
9 Recpt 9 *	0	0	0	0	0	0	0
10 Recpt 10 *	0.2	0	0	0	0	0	0
11 Recpt 11 *	0.1	0.1	0	0	0	0	0
12 Recpt 12 *	0.2	0	0	0	0	0	0
13 Recpt 13 *	0.1	0.2	0	0	0	0	0
14 Recpt 14 *	0	0.2	0	0	0	0	0
15 Recpt 15 *	0	0	0	0	0.1	0	0
16 Recpt 16 *	0	0	0	0	0	0.2	0
17 Recpt 17 *	0	0	0	0	0.1	0.1	0
18 Recpt 18 *	0	0	0.1	0	0	0	0
19 Recpt 19 *	0.1	0.8	0	0	0	0	0
20 Recpt 20 *	0	0	0.1	0	0	0	0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: SR 85 Hot Spots Sar-Winc Build 2015
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1 M/S	Z0=	100 CM	ALT=	0 (M)
BRG=	WORST CASE	VD=	0 CM/S		
CLAS=	7 (G)	VS=	0 CM/S		
MIXH=	1000 M	AMB=	0 PPM		
SIGTH=	5 DEGREES	TEMP=	9 DEGREE	(C)	

II. LINK VARIABLES

LINK	*	LINK	COORDINATES	(M)	*	EF	H	W				
DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	(G/MI)	(M)	(M)	
A.	Link	A	*	8010	6051	8258	5882 *	AG	5471	1.6	0	10
B.	Link	B	*	8258	5882	8658	5671 *	AG	5471	1.6	0	10
C.	Link	C	*	8658	5671	9101	5515 *	AG	5471	1.6	0	10
D.	Link	D	*	9101	5515	9592	5218 *	AG	5471	1.6	0	10
E.	Link	E	*	9592	5218	10603	4657 *	AG	5471	1.6	0	10
F.	Link	F	*	10603	4657	11395	4228 *	AG	5471	1.6	0	10
G.	Link	G	*	11395	4228	11839	4084 *	AG	5471	1.6	0	10
H.	Link	H	*	11818	4052	11367	4211 *	AG	7820	2	0	10
I.	Link	I	*	11367	4211	10533	4666 *	AG	7820	2	0	10
J.	Link	J	*	10533	4666	9615	5176 *	AG	7820	2	0	10
K.	Link	K	*	9615	5176	9179	5440 *	AG	7820	2	0	10
L.	Link	L	*	9179	5440	9052	5506 *	AG	7820	2	0	10
M.	Link	M	*	9052	5506	8616	5661 *	AG	7820	2	0	10
N.	Link	N	*	8616	5661	8203	5874 *	AG	7820	2	0	10
O.	Link	O	*	8203	5874	7983	6033 *	AG	7820	2	0	10

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR 85 Hot Spots Sar-Winc Build 2015
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

*	COORDINATES	(M)			
RECEPTOR	*	X	Y	Z	
1 Recpt	1 *	8120	6043	1.8	
2 Recpt	2 *	8349	5870	1.8	
3 Recpt	3 *	8627	5709	1.8	
4 Recpt	4 *	9019	5566	1.8	
5 Recpt	5 *	9489	5306	1.8	
6 Recpt	6 *	10239	4882	1.8	
7 Recpt	7 *	10564	4709	1.8	
8 Recpt	8 *	10959	4521	1.8	
9 Recpt	9 *	11526	4205	1.8	
10 Recpt	10 *	11539	4112	1.8	
11 Recpt	11 *	10987	4355	1.8	
12 Recpt	12 *	10467	4646	1.8	
13 Recpt	13 *	10035	4894	1.8	
14 Recpt	14 *	9501	5184	1.8	
15 Recpt	15 *	9034	5445	1.8	
16 Recpt	16 *	8658	5599	1.8	
17 Recpt	17 *	8293	5778	1.8	
18 Recpt	18 *	9820	5004	6	
19 Recpt	19 *	9848	5053	6	
20 Recpt	20 *	9864	5087	6	

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: SR 85 Hot Spots Sar-Winc Build 2015
RUN: Hour 1 (WORST CASE ANGLE)

POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
1 Recpt 1	122	0.3	0	0	0.1	0	0	0	0	0
2 Recpt 2	119	0.5	0	0	0.1	0	0	0	0	0
3 Recpt 3	117	0.8	0	0	0.2	0.1	0	0	0	0
4 Recpt 4	123	0.9	0	0	0.1	0.3	0.1	0	0	0
5 Recpt 5	293	0.8	0	0	0	0.2	0	0	0	0
6 Recpt 6	294	0.7	0	0	0	0	0.3	0	0	0
7 Recpt 7	294	0.6	0	0	0	0	0.2	0	0	0
8 Recpt 8	293	0.4	0	0	0	0	0.1	0	0	0
9 Recpt 9	123	0.5	0	0	0	0	0	0	0.2	0.2
10 Recpt 10	300	0.8	0	0	0	0	0	0.1	0	0.2
11 Recpt 11	305	0.5	0	0	0	0	0.1	0	0	0
12 Recpt 12	112	0.5	0	0	0	0	0	0.1	0	0
13 Recpt 13	113	0.5	0	0	0	0	0.1	0.1	0	0
14 Recpt 14	113	0.5	0	0	0	0	0.1	0	0	0
15 Recpt 15	300	0.4	0	0.1	0	0	0	0	0	0
16 Recpt 16	306	0.5	0	0.1	0	0	0	0	0	0
17 Recpt 17	109	0.6	0	0	0.1	0.1	0	0	0	0
18 Recpt 18	308	0.4	0	0	0	0.1	0	0	0	0
19 Recpt 19	121	1.4	0	0	0	0	0	0	0	0
20 Recpt 20	295	0.7	0	0	0	0.1	0.2	0	0	0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: SR 85 Hot Spots Sar-Winc Build 2015
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	I	J	K	L	M	N	O
1 Recpt 1	0	0	0	0	0.1	0	0
2 Recpt 2	0	0	0.1	0	0.1	0	0
3 Recpt 3	0	0.1	0.1	0	0.2	0	0
4 Recpt 4	0	0.1	0.2	0	0	0	0
5 Recpt 5	0	0	0.2	0.1	0.1	0.1	0
6 Recpt 6	0	0.2	0.1	0	0	0	0
7 Recpt 7	0	0.2	0	0	0	0	0
8 Recpt 8	0	0.2	0	0	0	0	0
9 Recpt 9	0	0	0	0	0	0	0
10 Recpt 10	0.4	0.1	0	0	0	0	0
11 Recpt 11	0.2	0.1	0	0	0	0	0
12 Recpt 12	0.3	0	0	0	0	0	0
13 Recpt 13	0.1	0.2	0	0	0	0	0
14 Recpt 14	0	0.3	0	0	0	0	0
15 Recpt 15	0	0	0	0	0.2	0.1	0
16 Recpt 16	0	0	0	0	0	0.3	0
17 Recpt 17	0	0	0	0	0.2	0.2	0
18 Recpt 18	0	0.1	0.2	0	0	0	0
19 Recpt 19	0.1	1.2	0	0	0	0	0
20 Recpt 20	0	0	0.2	0	0.1	0	0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: SR 85 Hot Spots Sar-Winc NB 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=		1	M/S	Z0=	100	CM	ALT= 0 (M)
BRG=	WORST		CASE	VD=	0	CM/S	
CLAS=		7	(G)	VS=	0	CM/S	
MIXH=		1000	M	AMB=	0	PPM	
SIGTH=		5	DEGREES	TEMP=	9	DEGREE	(C)

II. LINK VARIABLES

LINK	*	LINK	COORDINATES	(M)	*	EF	H	W				
DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	(G/MI)	(M)	(M)	
A.	Link	A	*	8010	6051	8258	5882 *	AG	5595	0.8	0	10
B.	Link	B	*	8258	5882	8658	5671 *	AG	5595	0.8	0	10
C.	Link	C	*	8658	5671	9101	5515 *	AG	5595	0.8	0	10
D.	Link	D	*	9101	5515	9592	5218 *	AG	5595	0.8	0	10
E.	Link	E	*	9592	5218	10603	4657 *	AG	5595	0.8	0	10
F.	Link	F	*	10603	4657	11395	4228 *	AG	5595	0.8	0	10
G.	Link	G	*	11395	4228	11839	4084 *	AG	5595	0.8	0	10
H.	Link	H	*	11818	4052	11367	4211 *	AG	6738	1.3	0	10
I.	Link	I	*	11367	4211	10533	4666 *	AG	6738	1.3	0	10
J.	Link	J	*	10533	4666	9615	5176 *	AG	6738	1.3	0	10
K.	Link	K	*	9615	5176	9179	5440 *	AG	6738	1.3	0	10
L.	Link	L	*	9179	5440	9052	5506 *	AG	6738	1.3	0	10
M.	Link	M	*	9052	5506	8616	5661 *	AG	6738	1.3	0	10
N.	Link	N	*	8616	5661	8203	5874 *	AG	6738	1.3	0	10
O.	Link	O	*	8203	5874	7983	6033 *	AG	6738	1.3	0	10

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR 85 Hot Spots Sar-Winc NB 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

*	COORDINATES (M)			
RECEPTOR	*	X	Y	Z
1 Recpt	1 *	8120	6043	1.8
2 Recpt	2 *	8349	5870	1.8
3 Recpt	3 *	8627	5709	1.8
4 Recpt	4 *	9019	5566	1.8
5 Recpt	5 *	9489	5306	1.8
6 Recpt	6 *	10239	4882	1.8
7 Recpt	7 *	10564	4709	1.8
8 Recpt	8 *	10959	4521	1.8
9 Recpt	9 *	11526	4205	1.8
10 Recpt	10 *	11539	4112	1.8
11 Recpt	11 *	10987	4355	1.8
12 Recpt	12 *	10467	4646	1.8
13 Recpt	13 *	10035	4894	1.8
14 Recpt	14 *	9501	5184	1.8
15 Recpt	15 *	9034	5445	1.8
16 Recpt	16 *	8658	5599	1.8
17 Recpt	17 *	8293	5778	1.8
18 Recpt	18 *	9820	5004	6
19 Recpt	19 *	9848	5053	6
20 Recpt	20 *	9864	5087	6

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: SR 85 Hot Spots Sar-Winc NB 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

* RECEPTOR	* BRG (DEG)	PRED * CONC (PPM)	* CONC/LINK * (PPM) A	B	C	D	E	F	G	H
1 Recpt	1 *	122 *	0.2 * 0	0	0	0	0	0	0	0
2 Recpt	2 *	119 *	0.3 * 0	0	0	0	0	0	0	0
3 Recpt	3 *	118 *	0.4 * 0	0	0.1	0	0	0	0	0
4 Recpt	4 *	123 *	0.5 * 0	0	0.1	0.1	0	0	0	0
5 Recpt	5 *	293 *	0.4 * 0	0	0	0.1	0	0	0	0
6 Recpt	6 *	294 *	0.3 * 0	0	0	0	0.1	0	0	0
7 Recpt	7 *	294 *	0.3 * 0	0	0	0	0.1	0	0	0
8 Recpt	8 *	293 *	0.2 * 0	0	0	0	0.1	0	0	0
9 Recpt	9 *	123 *	0.3 * 0	0	0	0	0	0	0.1	0.1
10 Recpt	10 *	300 *	0.4 * 0	0	0	0	0	0	0	0.1
11 Recpt	11 *	305 *	0.2 * 0	0	0	0	0.1	0	0	0
12 Recpt	12 *	112 *	0.2 * 0	0	0	0	0	0.1	0	0
13 Recpt	13 *	113 *	0.3 * 0	0	0	0	0	0	0	0
14 Recpt	14 *	113 *	0.3 * 0	0	0	0	0.1	0	0	0
15 Recpt	15 *	300 *	0.2 * 0	0	0	0	0	0	0	0
16 Recpt	16 *	306 *	0.2 * 0	0	0	0	0	0	0	0
17 Recpt	17 *	109 *	0.3 * 0	0	0	0	0	0	0	0
18 Recpt	18 *	308 *	0.2 * 0	0	0	0.1	0	0	0	0
19 Recpt	19 *	121 *	0.8 * 0	0	0	0	0	0	0	0
20 Recpt	20 *	295 *	0.4 * 0	0	0	0	0.1	0	0	0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: SR 85 Hot Spots Sar-Winc NB 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

* RECEPTOR	* CONC/LINK * (PPM) I	J	K	L	M	N	O
1 Recpt 1 *	0	0	0	0	0.1	0	0
2 Recpt 2 *	0	0	0	0	0.1	0	0
3 Recpt 3 *	0	0	0.1	0	0.1	0	0
4 Recpt 4 *	0	0.1	0.1	0	0	0	0
5 Recpt 5 *	0	0	0.1	0	0.1	0	0
6 Recpt 6 *	0	0.1	0	0	0	0	0
7 Recpt 7 *	0	0.1	0	0	0	0	0
8 Recpt 8 *	0	0.1	0	0	0	0	0
9 Recpt 9 *	0	0	0	0	0	0	0
10 Recpt 10 *	0.2	0	0	0	0	0	0
11 Recpt 11 *	0.1	0.1	0	0	0	0	0
12 Recpt 12 *	0.2	0	0	0	0	0	0
13 Recpt 13 *	0.1	0.1	0	0	0	0	0
14 Recpt 14 *	0	0.2	0	0	0	0	0
15 Recpt 15 *	0	0	0	0	0.1	0	0
16 Recpt 16 *	0	0	0	0	0	0.2	0
17 Recpt 17 *	0	0	0	0	0.1	0.1	0
18 Recpt 18 *	0	0	0.1	0	0	0	0
19 Recpt 19 *	0	0.7	0	0	0	0	0
20 Recpt 20 *	0	0	0.1	0	0	0	0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: SR 85 Hot Spots Sar-Winc Build 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1 M/S	Z0=	100 CM	ALT= 0 (M)
BRG=	WORST CASE	VD=	0 CM/S	
CLAS=	7 (G)	VS=	0 CM/S	
MIXH=	1000 M	AMB=	0 PPM	
SIGTH=	5 DEGREES	TEMP=	9 DEGREE	(C)

II. LINK VARIABLES

LINK	*	LINK	COORDINATES	(M)	*	EF	H	W				
DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	(G/MI)	(M)	(M)	
A.	Link	A	*	8010	6051	8258	5882 *	AG	7005	0.8	0	10
B.	Link	B	*	8258	5882	8658	5671 *	AG	7005	0.8	0	10
C.	Link	C	*	8658	5671	9101	5515 *	AG	7005	0.8	0	10
D.	Link	D	*	9101	5515	9592	5218 *	AG	7005	0.8	0	10
E.	Link	E	*	9592	5218	10603	4657 *	AG	7005	0.8	0	10
F.	Link	F	*	10603	4657	11395	4228 *	AG	7005	0.8	0	10
G.	Link	G	*	11395	4228	11839	4084 *	AG	7005	0.8	0	10
H.	Link	H	*	11818	4052	11367	4211 *	AG	7472	1.2	0	10
I.	Link	I	*	11367	4211	10533	4666 *	AG	7472	1.2	0	10
J.	Link	J	*	10533	4666	9615	5176 *	AG	7472	1.2	0	10
K.	Link	K	*	9615	5176	9179	5440 *	AG	7472	1.2	0	10
L.	Link	L	*	9179	5440	9052	5506 *	AG	7472	1.2	0	10
M.	Link	M	*	9052	5506	8616	5661 *	AG	7472	1.2	0	10
N.	Link	N	*	8616	5661	8203	5874 *	AG	7472	1.2	0	10
O.	Link	O	*	8203	5874	7983	6033 *	AG	7472	1.2	0	10

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR 85 Hot Spots Sar-Winc Build 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

*	COORDINATES	(M)			
RECEPTOR	*	X	Y	Z	
	1 Recpt	1 *	8120	6043	1.8
	2 Recpt	2 *	8349	5870	1.8
	3 Recpt	3 *	8627	5709	1.8
	4 Recpt	4 *	9019	5566	1.8
	5 Recpt	5 *	9489	5306	1.8
	6 Recpt	6 *	10239	4882	1.8
	7 Recpt	7 *	10564	4709	1.8
	8 Recpt	8 *	10959	4521	1.8
	9 Recpt	9 *	11526	4205	1.8
	10 Recpt	10 *	11539	4112	1.8
	11 Recpt	11 *	10987	4355	1.8
	12 Recpt	12 *	10467	4646	1.8
	13 Recpt	13 *	10035	4894	1.8
	14 Recpt	14 *	9501	5184	1.8
	15 Recpt	15 *	9034	5445	1.8
	16 Recpt	16 *	8658	5599	1.8
	17 Recpt	17 *	8293	5778	1.8
	18 Recpt	18 *	9820	5004	6
	19 Recpt	19 *	9848	5053	6
	20 Recpt	20 *	9864	5087	6

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: SR 85 Hot Spots Sar-Winc Build 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	A	B	C	D	E	F	G	H
1 Recpt	1 *	122 *		0.2 *		0	0	0	0	0	0	0	0
2 Recpt	2 *	119 *		0.3 *		0	0	0.1	0	0	0	0	0
3 Recpt	3 *	117 *		0.5 *		0	0	0.1	0	0	0	0	0
4 Recpt	4 *	123 *		0.5 *		0	0	0.1	0.2	0	0	0	0
5 Recpt	5 *	293 *		0.5 *		0	0	0	0.1	0	0	0	0
6 Recpt	6 *	294 *		0.4 *		0	0	0	0	0.2	0	0	0
7 Recpt	7 *	294 *		0.4 *		0	0	0	0	0.1	0	0	0
8 Recpt	8 *	293 *		0.3 *		0	0	0	0	0.1	0	0	0
9 Recpt	9 *	123 *		0.3 *		0	0	0	0	0	0	0.2	0.1
10 Recpt	10 *	300 *		0.5 *		0	0	0	0	0	0.1	0	0.1
11 Recpt	11 *	305 *		0.3 *		0	0	0	0	0.1	0	0	0
12 Recpt	12 *	112 *		0.3 *		0	0	0	0	0	0.1	0	0
13 Recpt	13 *	113 *		0.3 *		0	0	0	0	0	0	0	0
14 Recpt	14 *	113 *		0.3 *		0	0	0	0	0.1	0	0	0
15 Recpt	15 *	300 *		0.3 *		0	0	0	0	0	0	0	0
16 Recpt	16 *	306 *		0.3 *		0	0	0	0	0	0	0	0
17 Recpt	17 *	109 *		0.3 *		0	0	0	0	0	0	0	0
18 Recpt	18 *	308 *		0.3 *		0	0	0	0.1	0	0	0	0
19 Recpt	19 *	121 *		0.8 *		0	0	0	0	0	0	0	0
20 Recpt	20 *	295 *		0.4 *		0	0	0	0.1	0.1	0	0	0

CONC/LINK (PPM)

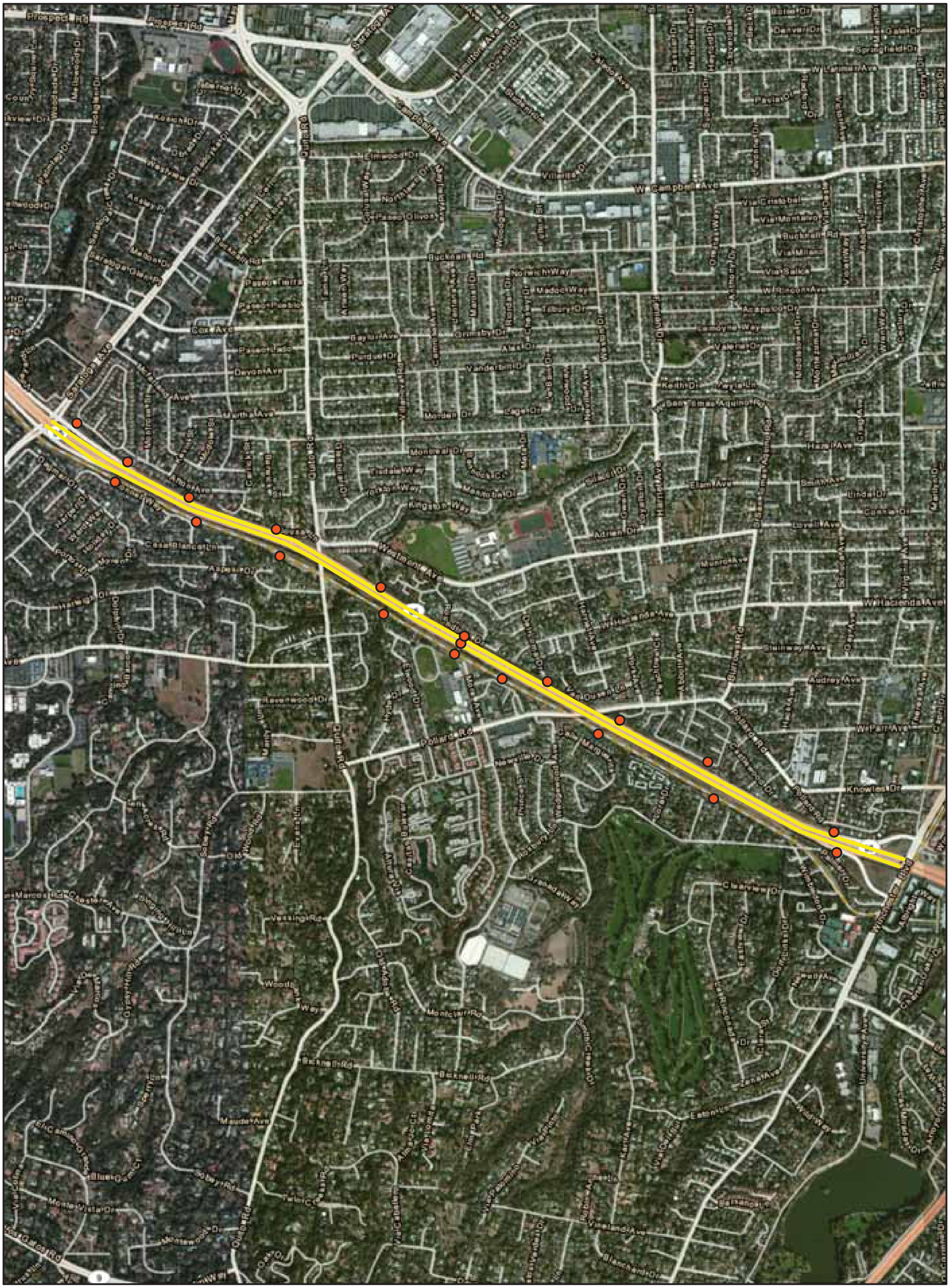
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: SR 85 Hot Spots Sar-Winc Build 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	I	J	K	L	M	N	O
1 Recpt	1 *	0	0	0	0	0.1	0	0
2 Recpt	2 *	0	0	0	0	0.1	0	0
3 Recpt	3 *	0	0	0.1	0	0.1	0	0
4 Recpt	4 *	0	0.1	0.1	0	0	0	0
5 Recpt	5 *	0	0	0.1	0.1	0.1	0	0
6 Recpt	6 *	0	0.1	0	0	0	0	0
7 Recpt	7 *	0	0.1	0	0	0	0	0
8 Recpt	8 *	0	0.1	0	0	0	0	0
9 Recpt	9 *	0	0	0	0	0	0	0
10 Recpt	10 *	0.2	0	0	0	0	0	0
11 Recpt	11 *	0.1	0.1	0	0	0	0	0
12 Recpt	12 *	0.2	0	0	0	0	0	0
13 Recpt	13 *	0.1	0.1	0	0	0	0	0
14 Recpt	14 *	0	0.2	0	0	0	0	0
15 Recpt	15 *	0	0	0	0	0.1	0	0
16 Recpt	16 *	0	0	0	0	0	0.2	0
17 Recpt	17 *	0	0	0	0	0.1	0.1	0
18 Recpt	18 *	0	0	0.1	0	0	0	0
19 Recpt	19 *	0	0.7	0	0	0	0	0
20 Recpt	20 *	0	0	0.1	0	0	0	0

UNION-BASCOM SEGMENT CO HOT SPOT LINKS AND RECEPTORS



SARATOGA-WINCHESTER SEGMENT CO HOT SPOT LINKS AND RECEPTORS

Appendix B
Sacramento Roadway Construction Emission Model Results

Road Construction Emissions Model, Version 7.1.4

Emission Estimates for -> SR-85 Express Lanes Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	7.6	43.5	72.8	97.8	3.3	94.5	22.5	2.9	19.7	8,985.3
Grading/Excavation	8.5	51.0	79.1	98.4	3.9	94.5	23.0	3.3	19.7	10,155.2
Drainage/Utilities/Sub-Grade	5.8	35.9	44.0	97.1	2.6	94.5	21.9	2.2	19.7	6,647.8
Paving	4.9	36.6	34.1	2.3	2.3	-	1.9	1.9	-	6,405.9
Maximum (pounds/day)	8.5	51.0	79.1	98.4	3.9	94.5	23.0	3.3	19.7	10,155.2
Total (tons/construction project)	1.0	5.9	8.1	11.3	0.4	10.8	2.6	0.4	2.3	1,151.4
Construction period daily average (lbs/day)	4.9	30.4	41.7	57.8	2.2	55.6	13.5	1.9	11.6	5,904.4

Notes:		
	Project Start Year ->	2014
	Project Length (months) ->	13
	Total Project Area (acres) ->	38
	Maximum Area Disturbed/Day (acres) ->	9
	Total Soil Imported/Exported (yd^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> SR-85 Express Lanes Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	3.4	19.8	33.1	44.5	1.5	43.0	10.2	1.3	8.9	4,084.2
Grading/Excavation	3.8	23.2	36.0	44.7	1.8	43.0	10.5	1.5	8.9	4,616.0
Drainage/Utilities/Sub-Grade	2.6	16.3	20.0	44.1	1.2	43.0	9.9	1.0	8.9	3,021.7
Paving	2.2	16.6	15.5	1.0	1.0	-	0.9	0.9	-	2,911.8
Maximum (kilograms/day)	3.8	23.2	36.0	44.7	1.8	43.0	10.5	1.5	8.9	4,616.0
Total (megagrams/construction project)	0.9	5.4	7.4	10.2	0.4	9.8	2.4	0.3	2.0	1,044.3

Notes:		
	Project Start Year ->	2014
	Project Length (months) ->	13
	Total Project Area (hectares) ->	15
	Maximum Area Disturbed/Day (hectares) ->	4
	Total Soil Imported/Exported ($meters^3$/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.4

Data Entry Worksheet

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Input Type		
Project Name	SR-85 Express Lanes	
Construction Start Year	2014	Enter a Year between 2009 and 2025 (inclusive)
Project Type	2	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	13.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	30.8	miles
Total Project Area	37.8	acres
Maximum Area Disturbed/Day	9.5	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.0	yd^3/day
Soil Exported	0.0	yd^3/day
Average Truck Capacity	20.0	yd^3 (assume 20 if unknown)

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%		2006	%	2007	%
Grubbing/Land Clearing	0.68	1.30	0.00	0.00		0.00	0.00	0.00	0.00
Grading/Excavation	4.32	5.85	0.00	0.00		0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	6.36	3.90	0.00	0.00		0.00	0.00	0.00	0.00
Paving	1.59	1.95	0.00	0.00		0.00	0.00	0.00	0.00
Totals	12.95	13.00							

Please note: You have entered a different number of months than the project length shown in cell C13.

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.28	10.43	1.26	0.25	0.18	1713.35
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip	20.00	20
One-way trips/day	2.00	2
No. of employees: Grubbing/Land Clearing	82.00	84
No. of employees: Grading/Excavation	87.00	106
No. of employees: Drainage/Utilities/Sub-Grade	85.00	100
No. of employees: Paving	87.00	91

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Grading/Excavation (grams/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Paving (grams/mile)	0.171	0.231	2.057	0.047	0.020	443.459
Emission rate - Grubbing/Land Clearing (grams/trip)	0.616	0.407	5.187	0.004	0.003	95.481
Emission rate - Grading/Excavation (grams/trip)	0.616	0.407	5.187	0.004	0.003	95.481
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.616	0.407	5.187	0.004	0.003	95.481
Emission rate - Paving (grams/trip)	0.581	0.381	4.875	0.004	0.003	95.509
Pounds per day - Grubbing/Land Clearing	1.760	2.092	19.698	0.344	0.147	3272.184
Tons per const. Period - Grub/Land Clear	0.013	0.016	0.148	0.003	0.001	24.541
Pounds per day - Grading/Excavation	1.867	2.219	20.899	0.365	0.156	3471.707
Tons per const. Period - Grading/Excavation	0.089	0.105	0.993	0.017	0.007	164.906
Pounds per day - Drainage/Utilities/Sub-Grade	1.824	2.168	20.418	0.356	0.153	3391.898
Tons per const. Period - Drain/Util/Sub-Grade	0.128	0.152	1.429	0.025	0.011	237.433
Pounds per day - Paving	1.756	2.063	19.502	0.364	0.155	3472.409
Tons per const. Period - Paving	0.031	0.036	0.341	0.006	0.003	60.767
tons per construction period	0.260	0.309	2.911	0.051	0.022	487.647

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day		
Grubbing/Land Clearing - Exhaust		2		80		
Grading/Excavation - Exhaust		2		80		
Drainage/Utilities/Subgrade		1		40		
	ROG	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**
Emission rate - Grubbing/Land Clearing (grams/mile)	0.28	10.43	1.26	0.25	0.18	1713.35
Emission rate - Grading/Excavation (grams/mile)	0.28	10.43	1.26	0.25	0.18	1713.35
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.28	10.43	1.26	0.25	0.18	1713.35
Pounds per day - Grubbing/Land Clearing	0.10	3.67	0.45	0.09	0.06	603.82
Tons per const. Period - Grub/Land Clear	0.00	0.17	0.02	0.00	0.00	28.68
Pound per day - Grading/Excavation	0.10	3.67	0.45	0.09	0.06	603.82
Tons per const. Period - Grading/Excavation	0.00	0.17	0.02	0.00	0.00	28.68
Pound per day - Drainage/Utilities/Subgrade	0.03	0.92	0.11	0.02	0.02	150.96
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.06	0.01	0.00	0.00	10.57

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		9.45	94.5	0.7	19.7	0.1
Fugitive Dust - Grading/Excavation		9.45	94.5	6.1	19.7	1.3
Fugitive Dust - Drainage/Utilities/Subgrade		9.45	94.5	4.1	19.7	0.8

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
2.00		Rubber Tired Dozers	2.63	8.84	28.68	1.34	1.23	1890.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
2.00		Scrapers	3.08	14.52	38.31	1.55	1.42	3219.25
0.00	62	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	5.7	23.4	67.0	2.9	2.7	5109.3
	Grubbing/Land Clearing	tons per phase	0.0	0.2	0.5	0.0	0.0	38.3

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
2.00	4	Excavators	0.89	5.58	10.20	0.50	0.46	1145.54
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
2.00	3	Graders	2.23	6.98	21.90	1.23	1.13	1344.61
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Other Construction Equipment	0.74	3.60	8.01	0.42	0.39	654.37
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2	Rubber Tired Loaders	1.08	6.23	13.99	0.48	0.44	1325.56
1.00	3	Scrapers	1.54	7.26	19.16	0.77	0.71	1609.63
0.00	62	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	6.5	29.6	73.3	3.4	3.1	6079.7
	Grading	tons per phase	0.3	1.4	3.5	0.2	0.1	288.8

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Graders	1.12	3.49	10.95	0.61	0.57	672.31
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2	Plate Compactors	0.08	0.42	0.50	0.02	0.02	68.90
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Scrapers	1.54	7.26	19.16	0.77	0.71	1609.63
0.00	62	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
2.00		Trenchers	1.22	4.20	10.32	0.81	0.74	754.14
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	4.0	15.4	40.9	2.2	2.0	3105.0
	Drainage	tons per phase	0.3	1.1	2.9	0.2	0.1	217.3

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2	Pavers	0.95	5.67	10.34	0.52	0.48	962.97
2.00	2	Paving Equipment	0.71	5.39	8.28	0.40	0.37	852.29
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
4.00	3	Rollers	1.53	6.04	13.46	1.00	0.92	1118.23
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	62	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	3.2	17.1	32.1	1.9	1.8	2933.5
	Paving	tons per phase	0.1	0.3	0.6	0.0	0.0	51.3
Total Emissions all Phases (tons per construction period) =>			0.7	3.0	7.4	0.4	0.3	595.8

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Light Duty Truck

Worker Commute Truck Emissions (Emfac2011-LDV V2.50.57.246, LDT1 and LDT2)

	Running Exhaust (g/mi)											
Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	NOx	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	CO	Weighted - Grubbing
2009	0.1332	-	-	-	-	0.4682	-	-	-	-	3.9529	-
2010	0.1140	-	-	-	-	0.4124	-	-	-	-	3.5174	-
2011	0.0982	-	-	-	-	0.3637	-	-	-	-	3.1372	-
2012	0.0843	-	-	-	-	0.3206	-	-	-	-	2.7952	-
2013	0.0722	-	-	-	-	0.2827	-	-	-	-	2.4899	-
2014	0.0609	0.0609	0.0609	0.0609	0.0243	0.2488	0.2488	0.2488	0.2488	0.0995	2.2077	2.2077
2015	0.0507	-	-	-	0.0304	0.2192	-	-	-	0.1315	1.9561	-
2016	0.0424	-	-	-	-	0.1942	-	-	-	-	1.7439	-
2017	0.0348	-	-	-	-	0.1724	-	-	-	-	1.5551	-
2018	0.0288	-	-	-	-	0.1543	-	-	-	-	1.3987	-
2019	0.0250	-	-	-	-	0.1402	-	-	-	-	1.2910	-
2020	0.0223	-	-	-	-	0.1288	-	-	-	-	1.1956	-
2021	0.0207	-	-	-	-	0.1196	-	-	-	-	1.1218	-
2022	0.0193	-	-	-	-	0.1117	-	-	-	-	1.0563	-
2023	0.0181	-	-	-	-	0.1050	-	-	-	-	0.9989	-
2024	0.0171	-	-	-	-	0.0994	-	-	-	-	0.9531	-
2025	0.0162	-	-	-	-	0.0946	-	-	-	-	0.9138	-
		0.0609	0.0609	0.0609	0.0548		0.2488	0.2488	0.2488	0.2310		2.2077

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2011-HD web, T7 Single Unit Construction Truck)

	Running Exhaust (g/mi)											
Model Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	NOx	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	CO	Weighted-Grubbing
2009	0.5461	-	-	-	-	14.1399	-	-	-	-	2.4577	-
2010	0.5341	-	-	-	-	13.5704	-	-	-	-	2.3852	-
2011	0.5194	-	-	-	-	12.9096	-	-	-	-	2.3044	-
2012	0.4608	-	-	-	-	12.1601	-	-	-	-	2.0332	-
2013	0.4024	-	-	-	-	11.3235	-	-	-	-	1.7799	-
2014	0.2846	0.2846	0.2846	0.2846	0.1138	10.4258	10.4258	10.4258	10.4258	4.1703	1.2629	1.2629
2015	0.2456	-	-	-	0.1473	9.4052	-	-	-	5.6431	1.0869	-
2016	0.1569	-	-	-	-	8.2519	-	-	-	-	0.7011	-
2017	0.1451	-	-	-	-	7.4301	-	-	-	-	0.6528	-
2018	0.1491	-	-	-	-	6.6629	-	-	-	-	0.6732	-
2019	0.1527	-	-	-	-	5.8768	-	-	-	-	0.6921	-
2020	0.1568	-	-	-	-	4.6723	-	-	-	-	0.7143	-
2021	0.1673	-	-	-	-	2.8722	-	-	-	-	0.7688	-
2022	0.1808	-	-	-	-	1.7730	-	-	-	-	0.8311	-
2023	0.1670	-	-	-	-	1.3478	-	-	-	-	0.7682	-
2024	0.1683	-	-	-	-	1.3659	-	-	-	-	0.7743	-
2025	0.1694	-	-	-	-	1.3805	-	-	-	-	0.7793	-
		0.2846	0.2846	0.2846	0.2612		10.4258	10.4258	10.4258	9.8135		1.2629

								Tire Wear (g/mi)			
Weighted - Grading	Weighted - Drainage	Weighted Paving	PM10	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	PM10	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage
-	-	-	0.0045	-	-	-	-	0.0080	-	-	-
-	-	-	0.0039	-	-	-	-	0.0080	-	-	-
-	-	-	0.0034	-	-	-	-	0.0080	-	-	-
-	-	-	0.0030	-	-	-	-	0.0080	-	-	-
-	-	-	0.0027	-	-	-	-	0.0080	-	-	-
2.2077	2.2077	0.8831	0.0025	0.0025	0.0025	0.0025	0.0010	0.0080	0.0080	0.0080	0.0080
-	-	1.1737	0.0023	-	-	-	0.0014	0.0080	-	-	-
-	-	-	0.0022	-	-	-	-	0.0080	-	-	-
-	-	-	0.0021	-	-	-	-	0.0080	-	-	-
-	-	-	0.0021	-	-	-	-	0.0080	-	-	-
-	-	-	0.0020	-	-	-	-	0.0080	-	-	-
-	-	-	0.0020	-	-	-	-	0.0080	-	-	-
-	-	-	0.0020	-	-	-	-	0.0080	-	-	-
-	-	-	0.0020	-	-	-	-	0.0080	-	-	-
-	-	-	0.0020	-	-	-	-	0.0080	-	-	-
-	-	-	0.0020	-	-	-	-	0.0080	-	-	-
-	-	-	0.0020	-	-	-	-	0.0080	-	-	-
2.2077	2.2077	2.0568		0.0025	0.0025	0.0025	0.0024		0.0080	0.0080	0.0080

								Tire Wear (g/mi)			
Weighted - Grading	Weighted - Drainage	Weighted Paving	PM10	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	PM10	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage
-	-	-	0.4056	-	-	-	-	0.0360	-	-	-
-	-	-	0.3778	-	-	-	-	0.0360	-	-	-
-	-	-	0.3511	-	-	-	-	0.0360	-	-	-
-	-	-	0.3007	-	-	-	-	0.0360	-	-	-
-	-	-	0.2490	-	-	-	-	0.0360	-	-	-
1.2629	1.2629	0.5052	0.1544	0.1544	0.1544	0.1544	0.0618	0.0360	0.0360	0.0360	0.0360
-	-	0.6521	0.1266	-	-	-	0.0760	0.0360	-	-	-
-	-	-	0.0693	-	-	-	-	0.0360	-	-	-
-	-	-	0.0583	-	-	-	-	0.0360	-	-	-
-	-	-	0.0582	-	-	-	-	0.0360	-	-	-
-	-	-	0.0581	-	-	-	-	0.0360	-	-	-
-	-	-	0.0576	-	-	-	-	0.0360	-	-	-
-	-	-	0.0555	-	-	-	-	0.0360	-	-	-
-	-	-	0.0529	-	-	-	-	0.0360	-	-	-
-	-	-	0.0515	-	-	-	-	0.0360	-	-	-
-	-	-	0.0520	-	-	-	-	0.0360	-	-	-
-	-	-	0.0525	-	-	-	-	0.0360	-	-	-
1.2629	1.2629	1.1573		0.1544	0.1544	0.1544	0.1377		0.0360	0.0360	0.0360

	Break Wear (g/mi)					Running Exhaust (grams/mile)					Tire Wear (g/mi)	
Weighted Paving	PM10	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	PM2.5	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	PM2.5	Weighted - Grubbing
-	0.0368	-	-	-	-	0.0040	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0035	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0031	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0028	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0025	-	-	-	-	0.0020	-
0.0032	0.0368	0.0368	0.0368	0.0368	0.0147	0.0023	0.0023	0.0023	0.0023	0.0009	0.0020	0.0020
0.0048	0.0368	-	-	-	0.0221	0.0021	-	-	-	0.0013	0.0020	-
-	0.0368	-	-	-	-	0.0020	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0019	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0019	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0019	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0018	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0018	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0018	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0018	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0018	-	-	-	-	0.0020	-
-	0.0368	-	-	-	-	0.0018	-	-	-	-	0.0020	-
0.0080		0.0368	0.0368	0.0368	0.0368		0.0023	0.0023	0.0023	0.0022		0.0020

	Break Wear (g/mi)					Running Exhaust (grams/mile)					Tire Wear (g/mi)	
Weighted Paving	PM10	Weighted- Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	PM2.5	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	PM2.5	Weighted - Grubbing
-	0.0617	-	-	-	-	0.3732	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.3476	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.3230	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.2766	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.2291	-	-	-	-	0.0090	-
0.0144	0.0617	0.0617	0.0617	0.0617	0.0247	0.1420	0.1420	0.1420	0.1420	0.0568	0.0090	0.0090
0.0216	0.0617	-	-	-	0.0370	0.1165	-	-	-	0.0699	0.0090	-
-	0.0617	-	-	-	-	0.0637	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.0537	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.0536	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.0535	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.0530	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.0510	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.0486	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.0474	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.0479	-	-	-	-	0.0090	-
-	0.0617	-	-	-	-	0.0483	-	-	-	-	0.0090	-
0.0360		0.0617	0.0617	0.0617	0.0617		0.1420	0.1420	0.1420	0.1267		0.0090

			Break Wear (grams/mile)					Running Exhaust (grams/mile)			
Weighted - Grading	Weighted - Drainage	Weighted Paving	PM2.5	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	CO2	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage
-	-	-	0.0158	-	-	-	-	443.6768	-	-	-
-	-	-	0.0158	-	-	-	-	443.3164	-	-	-
-	-	-	0.0157	-	-	-	-	443.2099	-	-	-
-	-	-	0.0157	-	-	-	-	443.1990	-	-	-
-	-	-	0.0158	-	-	-	-	443.2620	-	-	-
0.0020	0.0020	0.0008	0.0158	0.0158	0.0158	0.0158	0.0063	443.3700	443.3700	443.3700	443.3700
-	-	0.0012	0.0157	-	-	-	0.0094	443.5179	-	-	-
-	-	-	0.0158	-	-	-	-	443.6501	-	-	-
-	-	-	0.0158	-	-	-	-	443.7653	-	-	-
-	-	-	0.0158	-	-	-	-	443.8800	-	-	-
-	-	-	0.0158	-	-	-	-	441.7394	-	-	-
-	-	-	0.0158	-	-	-	-	441.8557	-	-	-
-	-	-	0.0158	-	-	-	-	441.8142	-	-	-
-	-	-	0.0158	-	-	-	-	441.7716	-	-	-
-	-	-	0.0158	-	-	-	-	441.7165	-	-	-
-	-	-	0.0158	-	-	-	-	441.6478	-	-	-
-	-	-	0.0158	-	-	-	-	441.5839	-	-	-
0.0020	0.0020	0.0020		0.0158	0.0158	0.0158	0.0158		443.3700	443.3700	443.3700

			Break Wear (grams/mile)					Running Exhaust (grams/mile)			
Weighted - Grading	Weighted - Drainage	Weighted Paving	PM2.5	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	CO2	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage
-	-	-	0.0265	-	-	-	-	1,741.6354	-	-	-
-	-	-	0.0265	-	-	-	-	1,737.2406	-	-	-
-	-	-	0.0265	-	-	-	-	1,729.2678	-	-	-
-	-	-	0.0265	-	-	-	-	1,724.8967	-	-	-
-	-	-	0.0265	-	-	-	-	1,716.8426	-	-	-
0.0090	0.0090	0.0036	0.0265	0.0265	0.0265	0.0265	0.0106	1,713.3514	1,713.3514	1,713.3514	1,713.3514
-	-	0.0054	0.0265	-	-	-	0.0159	1,694.6737	-	-	-
-	-	-	0.0265	-	-	-	-	1,679.8566	-	-	-
-	-	-	0.0265	-	-	-	-	1,652.5585	-	-	-
-	-	-	0.0265	-	-	-	-	1,624.6148	-	-	-
-	-	-	0.0265	-	-	-	-	1,596.4935	-	-	-
-	-	-	0.0265	-	-	-	-	1,558.5933	-	-	-
-	-	-	0.0265	-	-	-	-	1,551.9813	-	-	-
-	-	-	0.0265	-	-	-	-	1,546.6929	-	-	-
-	-	-	0.0265	-	-	-	-	1,541.8979	-	-	-
-	-	-	0.0265	-	-	-	-	1,541.8955	-	-	-
-	-	-	0.0265	-	-	-	-	1,541.8907	-	-	-
0.0090	0.0090	0.0090		0.0265	0.0265	0.0265	0.0265		1,713.3514	1,713.3514	1,713.3514

						Start Emission Rate @ 480 min (g/trip)						
Weighted Paving	CH4	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	NOx	Weighted - Grubbing
-	0.0359	-	-	-	-	0.6971	-	-	-	-	0.6670	-
-	0.0325	-	-	-	-	0.6284	-	-	-	-	0.6127	-
-	0.0294	-	-	-	-	0.5648	-	-	-	-	0.5587	-
-	0.0266	-	-	-	-	0.5050	-	-	-	-	0.5058	-
-	0.0241	-	-	-	-	0.4500	-	-	-	-	0.4552	-
177.3480	0.0218	0.0218	0.0218	0.0218	0.0087	0.3985	0.3985	0.3985	0.3985	0.1594	0.4073	0.4073
266.1108	0.0198	-	-	-	0.0119	0.3514	-	-	-	0.2108	0.3630	-
-	0.0181	-	-	-	-	0.3102	-	-	-	-	0.3229	-
-	0.0166	-	-	-	-	0.2732	-	-	-	-	0.2867	-
-	0.0153	-	-	-	-	0.2415	-	-	-	-	0.2549	-
-	0.0143	-	-	-	-	0.2164	-	-	-	-	0.2280	-
-	0.0135	-	-	-	-	0.1945	-	-	-	-	0.2049	-
-	0.0128	-	-	-	-	0.1770	-	-	-	-	0.1853	-
-	0.0123	-	-	-	-	0.1620	-	-	-	-	0.1684	-
-	0.0118	-	-	-	-	0.1490	-	-	-	-	0.1540	-
-	0.0115	-	-	-	-	0.1380	-	-	-	-	0.1418	-
-	0.0111	-	-	-	-	0.1287	-	-	-	-	0.1315	-
443.4588		0.0218	0.0218	0.0218	0.0206		0.3985	0.3985	0.3985	0.3702		0.4073

There are no start emissions for heavy-duty diesel trucks, so trips are not necessary for the emission
ARB didn't make assumptions on the numbers of trips for the vehicle categories in EMFAC2011-HD.

						Start Emission Rate @ 480 min (g/trip)						
Weighted Paving	CH4	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	ROG	Weighted- Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	NOx	Wieghted - Grubbing
-	0.0254	-	-	-	-	-	-	-	-	-	-	-
-	0.0248	-	-	-	-	-	-	-	-	-	-	-
-	0.0241	-	-	-	-	-	-	-	-	-	-	-
-	0.0214	-	-	-	-	-	-	-	-	-	-	-
-	0.0187	-	-	-	-	-	-	-	-	-	-	-
685.3406	0.0132	0.0132	0.0132	0.0132	0.0053	-	-	-	-	-	-	-
1,016.8042	0.0114	-	-	-	0.0068	-	-	-	-	-	-	-
-	0.0073	-	-	-	-	-	-	-	-	-	-	-
-	0.0067	-	-	-	-	-	-	-	-	-	-	-
-	0.0069	-	-	-	-	-	-	-	-	-	-	-
-	0.0071	-	-	-	-	-	-	-	-	-	-	-
-	0.0073	-	-	-	-	-	-	-	-	-	-	-
-	0.0078	-	-	-	-	-	-	-	-	-	-	-
-	0.0084	-	-	-	-	-	-	-	-	-	-	-
-	0.0078	-	-	-	-	-	-	-	-	-	-	-
-	0.0078	-	-	-	-	-	-	-	-	-	-	-
-	0.0079	-	-	-	-	-	-	-	-	-	-	-
1,702.1448		0.0132	0.0132	0.0132	0.0121		-	-	-	-		-

Weighted - Grading	Weighted - Drainage	Weighted Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	PM10	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving
-	-	-	8.3195	-	-	-	-	0.0061	-	-	-	-
-	-	-	7.6413	-	-	-	-	0.0055	-	-	-	-
-	-	-	6.9829	-	-	-	-	0.0049	-	-	-	-
-	-	-	6.3515	-	-	-	-	0.0045	-	-	-	-
-	-	-	5.7532	-	-	-	-	0.0041	-	-	-	-
0.4073	0.4073	0.1629	5.1874	5.1874	5.1874	5.1874	2.0750	0.0038	0.0038	0.0038	0.0038	0.0015
-	-	0.2178	4.6660	-	-	-	2.7996	0.0037	-	-	-	0.0022
-	-	-	4.2002	-	-	-	-	0.0036	-	-	-	-
-	-	-	3.7791	-	-	-	-	0.0036	-	-	-	-
-	-	-	3.4098	-	-	-	-	0.0036	-	-	-	-
-	-	-	3.1009	-	-	-	-	0.0037	-	-	-	-
-	-	-	2.8241	-	-	-	-	0.0038	-	-	-	-
-	-	-	2.5917	-	-	-	-	0.0039	-	-	-	-
-	-	-	2.3864	-	-	-	-	0.0040	-	-	-	-
-	-	-	2.2068	-	-	-	-	0.0042	-	-	-	-
-	-	-	2.0584	-	-	-	-	0.0043	-	-	-	-
-	-	-	1.9312	-	-	-	-	0.0044	-	-	-	-
0.4073	0.4073	0.3808		5.1874	5.1874	5.1874	4.8746		0.0038	0.0038	0.0038	0.0037

s calculation.

Weighted - Grading	Weighted - Drainage	Weighted Paving	CO	Wieghted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	PM10	Wieghted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-		-	-	-	-		-	-	-	-

PM2.5	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	CO2	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	CH4	Weighted - Grubbing	Weighted - Grading
0.0055	-	-	-	-	95.5391	-	-	-	-	0.0406	-	-
0.0050	-	-	-	-	95.4160	-	-	-	-	0.0365	-	-
0.0045	-	-	-	-	95.3882	-	-	-	-	0.0327	-	-
0.0040	-	-	-	-	95.3992	-	-	-	-	0.0292	-	-
0.0037	-	-	-	-	95.4418	-	-	-	-	0.0259	-	-
0.0035	0.0035	0.0035	0.0035	0.0014	95.4806	95.4806	95.4806	95.4806	38.1922	0.0229	0.0229	0.0229
0.0034	-	-	-	0.0020	95.5280	-	-	-	57.3168	0.0201	-	-
0.0033	-	-	-	-	95.5917	-	-	-	-	0.0177	-	-
0.0033	-	-	-	-	95.6440	-	-	-	-	0.0155	-	-
0.0034	-	-	-	-	95.7114	-	-	-	-	0.0137	-	-
0.0034	-	-	-	-	95.8217	-	-	-	-	0.0122	-	-
0.0035	-	-	-	-	95.9429	-	-	-	-	0.0110	-	-
0.0036	-	-	-	-	96.0432	-	-	-	-	0.0100	-	-
0.0038	-	-	-	-	96.1274	-	-	-	-	0.0091	-	-
0.0039	-	-	-	-	96.1963	-	-	-	-	0.0084	-	-
0.0040	-	-	-	-	96.2519	-	-	-	-	0.0078	-	-
0.0041	-	-	-	-	96.2981	-	-	-	-	0.0073	-	-
	0.0035	0.0035	0.0035	0.0034		95.4806	95.4806	95.4806	95.5091		0.0229	0.0229

PM2.5	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	CO2	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	CH4	Weighted - Grubbing	Weighted - Grading
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-		-	-	-	-		-	-

		20 minutes Hot Soak (g/trip)					20 minutes Evaporative Running Loss (g/mi)				
Weighted - Drainage	Weighted Paving	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving
-	-	0.2665	-	-	-	-	0.1747	-	-	-	-
-	-	0.2560	-	-	-	-	0.1628	-	-	-	-
-	-	0.2471	-	-	-	-	0.1521	-	-	-	-
-	-	0.2375	-	-	-	-	0.1417	-	-	-	-
-	-	0.2283	-	-	-	-	0.1316	-	-	-	-
0.0229	0.0092	0.2175	0.2175	0.2175	0.2175	0.0870	0.1211	0.1211	0.1211	0.1211	0.0485
-	0.0121	0.2063	-	-	-	0.1238	0.1128	-	-	-	0.0677
-	-	0.1953	-	-	-	-	0.1050	-	-	-	-
-	-	0.1839	-	-	-	-	0.0977	-	-	-	-
-	-	0.1735	-	-	-	-	0.0914	-	-	-	-
-	-	0.1655	-	-	-	-	0.0869	-	-	-	-
-	-	0.1587	-	-	-	-	0.0831	-	-	-	-
-	-	0.1529	-	-	-	-	0.0800	-	-	-	-
-	-	0.1476	-	-	-	-	0.0773	-	-	-	-
-	-	0.1427	-	-	-	-	0.0749	-	-	-	-
-	-	0.1383	-	-	-	-	0.0730	-	-	-	-
-	-	0.1344	-	-	-	-	0.0712	-	-	-	-
0.0229	0.0212		0.2175	0.2175	0.2175	0.2108		0.1211	0.1211	0.1211	0.1161

		20 minutes Hot Soak (g/trip)					20 minutes Evaporative Running Loss (g/mi)				
Weighted - Drainage	Weighted Paving	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving	ROG	Weighted- Grubbing	Weighted - Grading	Weighted - Drainage	Weighted Paving
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-		-	-	-	-

	B	C	D	E	F	G	H	I	J	K	L	M
1												
2	The following emission rates by equipment type and year cannot be directly edited. The rates shown below,											
3	however, will change when changes are made to the default values for horsepower and/or hours per day.											
4	Note: Years 2005 through 2008 were not updated and are not used in the current model											
5	Emissions (pounds / day)		ROG	ROG	ROG	ROG		CO	CO	CO	CO	
6	Aerial Lifts		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
7		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx
12	2009	0.1542	-	-	-	-	0.7783	-	-	-	-	1.7197
13	2010	0.1296	-	-	-	-	0.7783	-	-	-	-	1.5814
14	2011	0.1101	-	-	-	-	0.7783	-	-	-	-	1.4547
15	2012	0.0944	-	-	-	-	0.7783	-	-	-	-	1.3522
16	2013	0.0782	-	-	-	-	0.7783	-	-	-	-	1.2109
17	2014	0.0653	0.0653	0.0653	0.0653	0.0261	0.7783	0.7783	0.7783	0.7783	0.3113	1.0395
18	2015	0.0615	-	-	-	0.0369	0.7783	-	-	-	0.4670	0.9596
19	2016	0.0534	-	-	-	-	0.7783	-	-	-	-	0.8390
20	2017	0.0460	-	-	-	-	0.7783	-	-	-	-	0.7285
21	2018	0.0393	-	-	-	-	0.7783	-	-	-	-	0.6360
22	2019	0.0381	-	-	-	-	0.7783	-	-	-	-	0.6092
23	2020	0.0371	-	-	-	-	0.7783	-	-	-	-	0.5759
24	2021	0.0351	-	-	-	-	0.7783	-	-	-	-	0.5374
25	2022	0.0338	-	-	-	-	0.7783	-	-	-	-	0.5013
26	2023	0.0324	-	-	-	-	0.7783	-	-	-	-	0.4771
27	2024	0.0324	-	-	-	-	0.7783	-	-	-	-	0.4709
28	2025	0.0319	-	-	-	-	0.7783	-	-	-	-	0.4656
29			0.0653	0.0653	0.0653	0.0630		0.7783	0.7783	0.7783	0.7783	
30												
31	Air Compressors		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
32		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx
37	2009	0.6074	-	-	-	-	1.9501	-	-	-	-	3.5865
38	2010	0.5767	-	-	-	-	1.9358	-	-	-	-	3.4241
39	2011	0.5434	-	-	-	-	1.9194	-	-	-	-	3.2512
40	2012	0.5064	-	-	-	-	1.9000	-	-	-	-	3.0548
41	2013	0.4686	-	-	-	-	1.8805	-	-	-	-	2.8606
42	2014	0.4312	0.4312	0.4312	0.4312	0.1725	1.8614	1.8614	1.8614	1.8614	0.7446	2.6861
43	2015	0.3936	-	-	-	0.2361	1.8432	-	-	-	1.1059	2.4880
44	2016	0.3674	-	-	-	-	1.8374	-	-	-	-	2.3534
45	2017	0.3403	-	-	-	-	1.8312	-	-	-	-	2.2153
46	2018	0.3125	-	-	-	-	1.8246	-	-	-	-	2.0735
47	2019	0.2847	-	-	-	-	1.8175	-	-	-	-	1.9300
48	2020	0.2633	-	-	-	-	1.8123	-	-	-	-	1.7971
49	2021	0.2177	-	-	-	-	1.7627	-	-	-	-	1.5224
50	2022	0.2040	-	-	-	-	1.7598	-	-	-	-	1.4087
51	2023	0.1920	-	-	-	-	1.7584	-	-	-	-	1.3068
52	2024	0.1816	-	-	-	-	1.7578	-	-	-	-	1.2250
53	2025	0.1720	-	-	-	-	1.7573	-	-	-	-	1.1528
54			0.4312	0.4312	0.4312	0.4086		1.8614	1.8614	1.8614	1.8505	
55												
56	Bore/Drill Rigs		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
57		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
62	2009	0.1339	-	-	-	-	1.0596	-	-	-	-	2.4004
63	2010	0.1332	-	-	-	-	1.0571	-	-	-	-	2.3124
64	2011	0.1281	-	-	-	-	1.0541	-	-	-	-	2.1846
65	2012	0.1322	-	-	-	-	1.0539	-	-	-	-	2.1687
66	2013	0.1265	-	-	-	-	1.0528	-	-	-	-	2.0192
67	2014	0.1143	0.1143	0.1143	0.1143	0.0457	1.0470	1.0470	1.0470	1.0470	0.4188	1.7711
68	2015	0.1122	-	-	-	0.0673	1.0457	-	-	-	0.6274	1.6706
69	2016	0.1013	-	-	-	-	1.0474	-	-	-	-	1.4583
70	2017	0.0912	-	-	-	-	1.0470	-	-	-	-	1.2671
71	2018	0.0813	-	-	-	-	1.0432	-	-	-	-	1.0819
72	2019	0.0754	-	-	-	-	1.0410	-	-	-	-	0.9519
73	2020	0.0749	-	-	-	-	1.0441	-	-	-	-	0.9082
74	2021	0.0697	-	-	-	-	1.0467	-	-	-	-	0.7794
75	2022	0.0605	-	-	-	-	1.0484	-	-	-	-	0.5844
76	2023	0.0581	-	-	-	-	1.0505	-	-	-	-	0.5259
77	2024	0.0568	-	-	-	-	1.0528	-	-	-	-	0.4902
78	2025	0.0565	-	-	-	-	1.0526	-	-	-	-	0.4810
79			0.1143	0.1143	0.1143	0.1130		1.0470	1.0470	1.0470	1.0462	
80												
81												
82												
83	Cement and Mortar Mixers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
84		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
89	2009	0.4151	-	-	-	-	1.9680	-	-	-	-	2.6767
90	2010	0.3974	-	-	-	-	1.9559	-	-	-	-	2.5451
91	2011	0.3838	-	-	-	-	1.9483	-	-	-	-	2.4371
92	2012	0.3779	-	-	-	-	1.9444	-	-	-	-	2.3926
93	2013	0.3748	-	-	-	-	1.9432	-	-	-	-	2.3649
94	2014	0.3731	0.3731	0.3731	0.3731	0.1492	1.9432	1.9432	1.9432	1.9432	0.7773	2.3472
95	2015	0.3718	-	-	-	0.2231	1.9432	-	-	-	1.1659	2.3341
96	2016	0.3710	-	-	-	-	1.9432	-	-	-	-	2.3257
97	2017	0.3706	-	-	-	-	1.9432	-	-	-	-	2.3213
98	2018	0.3705	-	-	-	-	1.9432	-	-	-	-	2.3199
99	2019	0.3705	-	-	-	-	1.9432	-	-	-	-	2.3199
100	2020	0.3705	-	-	-	-	1.9432	-	-	-	-	2.3199
101	2021	0.3705	-	-	-	-	1.9432	-	-	-	-	2.3199
102	2022	0.3705	-	-	-	-	1.9432	-	-	-	-	2.3199

	B	C	D	E	F	G	H	I	J	K	L	M
103	2023	0.3705	-	-	-	-	1.9432	-	-	-	-	2.3199
104	2024	0.3705	-	-	-	-	1.9432	-	-	-	-	2.3199
105	2025	0.3705	-	-	-	-	1.9432	-	-	-	-	2.3199
106			0.3731	0.3731	0.3731	0.3723		1.9432	1.9432	1.9432	1.9432	
107												
108												
109												
110	Concrete/Industrial Saws		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
111		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
116	2009	0.8069	-	-	-	-	2.8140	-	-	-	-	5.0944
117	2010	0.7517	-	-	-	-	2.7842	-	-	-	-	4.8134
118	2011	0.6988	-	-	-	-	2.7566	-	-	-	-	4.5439
119	2012	0.6470	-	-	-	-	2.7307	-	-	-	-	4.2685
120	2013	0.5969	-	-	-	-	2.7066	-	-	-	-	4.0057
121	2014	0.5483	0.5483	0.5483	0.5483	0.2193	2.6840	2.6840	2.6840	2.6840	1.0736	3.7709
122	2015	0.5004	-	-	-	0.3002	2.6634	-	-	-	1.5980	3.4998
123	2016	0.4538	-	-	-	-	2.6439	-	-	-	-	3.2393
124	2017	0.4076	-	-	-	-	2.6248	-	-	-	-	2.9835
125	2018	0.3641	-	-	-	-	2.6075	-	-	-	-	2.7402
126	2019	0.3241	-	-	-	-	2.5922	-	-	-	-	2.5121
127	2020	0.2936	-	-	-	-	2.5809	-	-	-	-	2.3094
128	2021	0.2703	-	-	-	-	2.5725	-	-	-	-	2.1272
129	2022	0.2511	-	-	-	-	2.5659	-	-	-	-	1.9610
130	2023	0.2341	-	-	-	-	2.5603	-	-	-	-	1.8098
131	2024	0.2196	-	-	-	-	2.5558	-	-	-	-	1.6903
132	2025	0.2069	-	-	-	-	2.5521	-	-	-	-	1.5891
133			0.5483	0.5483	0.5483	0.5195		2.6840	2.6840	2.6840	2.6716	
134												
135												
136												
137												
138	Cranes		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
139		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
144	2009	0.2088	-	-	-	-	0.7540	-	-	-	-	2.4288
145	2010	0.2093	-	-	-	-	0.7540	-	-	-	-	2.4200
146	2011	0.2075	-	-	-	-	0.7540	-	-	-	-	2.3911
147	2012	0.2087	-	-	-	-	0.7540	-	-	-	-	2.3917
148	2013	0.2060	-	-	-	-	0.7540	-	-	-	-	2.3496
149	2014	0.1992	0.1992	0.1992	0.1992	0.0797	0.7539	0.7539	0.7539	0.7539	0.3016	2.2645
150	2015	0.1936	-	-	-	0.1162	0.7539	-	-	-	0.4524	2.1958
151	2016	0.1878	-	-	-	-	0.7539	-	-	-	-	2.1264
152	2017	0.1690	-	-	-	-	0.7540	-	-	-	-	1.9174
153	2018	0.1457	-	-	-	-	0.7539	-	-	-	-	1.6632
154	2019	0.1286	-	-	-	-	0.7538	-	-	-	-	1.4648
155	2020	0.1157	-	-	-	-	0.7538	-	-	-	-	1.3147
156	2021	0.1054	-	-	-	-	0.7537	-	-	-	-	1.1825
157	2022	0.0952	-	-	-	-	0.7539	-	-	-	-	1.0203
158	2023	0.0897	-	-	-	-	0.7538	-	-	-	-	0.9304
159	2024	0.0847	-	-	-	-	0.7538	-	-	-	-	0.8545
160	2025	0.0798	-	-	-	-	0.7539	-	-	-	-	0.7725
161			0.1992	0.1992	0.1992	0.1959		0.7539	0.7539	0.7539	0.7539	
162												
163												
164												
165												
166	Crawler Tractors		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
167		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
172	2009	0.2009	-	-	-	-	1.2190	-	-	-	-	2.7729
173	2010	0.2039	-	-	-	-	1.2189	-	-	-	-	2.7733
174	2011	0.2042	-	-	-	-	1.2190	-	-	-	-	2.7542
175	2012	0.2074	-	-	-	-	1.2189	-	-	-	-	2.7611
176	2013	0.2067	-	-	-	-	1.2185	-	-	-	-	2.7305
177	2014	0.2038	0.2038	0.2038	0.2038	0.0815	1.2184	1.2184	1.2184	1.2184	0.4874	2.6746
178	2015	0.2024	-	-	-	0.1215	1.2187	-	-	-	0.7312	2.6342
179	2016	0.2014	-	-	-	-	1.2180	-	-	-	-	2.5931
180	2017	0.1928	-	-	-	-	1.2189	-	-	-	-	2.4698
181	2018	0.1787	-	-	-	-	1.2181	-	-	-	-	2.2682
182	2019	0.1704	-	-	-	-	1.2174	-	-	-	-	2.1320
183	2020	0.1616	-	-	-	-	1.2174	-	-	-	-	1.9863
184	2021	0.1538	-	-	-	-	1.2173	-	-	-	-	1.8584
185	2022	0.1373	-	-	-	-	1.2152	-	-	-	-	1.6023
186	2023	0.1240	-	-	-	-	1.2140	-	-	-	-	1.3667
187	2024	0.1184	-	-	-	-	1.2146	-	-	-	-	1.2663
188	2025	0.1043	-	-	-	-	1.2140	-	-	-	-	1.0555
189			0.2038	0.2038	0.2038	0.2030		1.2184	1.2184	1.2184	1.2186	
190												
191												
192												

	B	C	D	E	F	G	H	I	J	K	L	M
193	Crushing/Proc. Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
194		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
199	2009	0.6594	-	-	-	-	2.5879	-	-	-	-	5.1983
200	2010	0.6281	-	-	-	-	2.5803	-	-	-	-	4.9338
201	2011	0.5929	-	-	-	-	2.5702	-	-	-	-	4.6469
202	2012	0.5542	-	-	-	-	2.5589	-	-	-	-	4.3356
203	2013	0.5156	-	-	-	-	2.5487	-	-	-	-	4.0432
204	2014	0.4784	0.4784	0.4784	0.4784	0.1914	2.5402	2.5402	2.5402	2.5402	1.0161	3.7675
205	2015	0.4395	-	-	-	0.2637	2.5336	-	-	-	1.5202	3.3934
206	2016	0.4018	-	-	-	-	2.5284	-	-	-	-	3.0339
207	2017	0.3660	-	-	-	-	2.5247	-	-	-	-	2.6927
208	2018	0.3334	-	-	-	-	2.5228	-	-	-	-	2.3785
209	2019	0.3077	-	-	-	-	2.5222	-	-	-	-	2.1063
210	2020	0.2870	-	-	-	-	2.5225	-	-	-	-	1.8663
211	2021	0.2690	-	-	-	-	2.5235	-	-	-	-	1.6494
212	2022	0.2525	-	-	-	-	2.5251	-	-	-	-	1.4523
213	2023	0.2377	-	-	-	-	2.5276	-	-	-	-	1.2907
214	2024	0.2240	-	-	-	-	2.5303	-	-	-	-	1.1488
215	2025	0.2107	-	-	-	-	2.5325	-	-	-	-	1.0152
216			0.4784	0.4784	0.4784	0.4551		2.5402	2.5402	2.5402	2.5363	
217												
218												
219												
220	Excavators		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
221		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
226	2009	0.1968	-	-	-	-	0.9735	-	-	-	-	2.2883
227	2010	0.1924	-	-	-	-	0.9734	-	-	-	-	2.2263
228	2011	0.1791	-	-	-	-	0.9730	-	-	-	-	2.0811
229	2012	0.1796	-	-	-	-	0.9727	-	-	-	-	2.0580
230	2013	0.1692	-	-	-	-	0.9728	-	-	-	-	1.9438
231	2014	0.1559	0.1559	0.1559	0.1559	0.0624	0.9729	0.9729	0.9729	0.9729	0.3891	1.7785
232	2015	0.1534	-	-	-	0.0920	0.9729	-	-	-	0.5837	1.7112
233	2016	0.1429	-	-	-	-	0.9730	-	-	-	-	1.5585
234	2017	0.1333	-	-	-	-	0.9728	-	-	-	-	1.4129
235	2018	0.1091	-	-	-	-	0.9729	-	-	-	-	1.1165
236	2019	0.0984	-	-	-	-	0.9726	-	-	-	-	0.9672
237	2020	0.0925	-	-	-	-	0.9728	-	-	-	-	0.8701
238	2021	0.0865	-	-	-	-	0.9730	-	-	-	-	0.7766
239	2022	0.0764	-	-	-	-	0.9726	-	-	-	-	0.6409
240	2023	0.0712	-	-	-	-	0.9728	-	-	-	-	0.5585
241	2024	0.0680	-	-	-	-	0.9731	-	-	-	-	0.5059
242	2025	0.0631	-	-	-	-	0.9733	-	-	-	-	0.4406
243			0.1559	0.1559	0.1559	0.1544		0.9729	0.9729	0.9729	0.9729	
244												
245												
246												
247	Forklifts		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
248		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
253	2009	0.1862	-	-	-	-	0.5722	-	-	-	-	1.5517
254	2010	0.1848	-	-	-	-	0.5722	-	-	-	-	1.5346
255	2011	0.1809	-	-	-	-	0.5722	-	-	-	-	1.4994
256	2012	0.1815	-	-	-	-	0.5722	-	-	-	-	1.4936
257	2013	0.1762	-	-	-	-	0.5722	-	-	-	-	1.4503
258	2014	0.1671	0.1671	0.1671	0.1671	0.0669	0.5722	0.5722	0.5722	0.5722	0.2289	1.3765
259	2015	0.1617	-	-	-	0.0970	0.5722	-	-	-	0.3433	1.3268
260	2016	0.1521	-	-	-	-	0.5722	-	-	-	-	1.2506
261	2017	0.1413	-	-	-	-	0.5722	-	-	-	-	1.1694
262	2018	0.1194	-	-	-	-	0.5722	-	-	-	-	1.0081
263	2019	0.1072	-	-	-	-	0.5722	-	-	-	-	0.9145
264	2020	0.0965	-	-	-	-	0.5722	-	-	-	-	0.8307
265	2021	0.0867	-	-	-	-	0.5722	-	-	-	-	0.7549
266	2022	0.0761	-	-	-	-	0.5722	-	-	-	-	0.6754
267	2023	0.0687	-	-	-	-	0.5722	-	-	-	-	0.6144
268	2024	0.0631	-	-	-	-	0.5722	-	-	-	-	0.5657
269	2025	0.0582	-	-	-	-	0.5722	-	-	-	-	0.5241
270			0.1671	0.1671	0.1671	0.1638		0.5722	0.5722	0.5722	0.5722	
271												
272												
273												
274	Generator Sets		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
275		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
280	2009	0.7833	-	-	-	-	2.7396	-	-	-	-	5.0707
281	2010	0.7369	-	-	-	-	2.7154	-	-	-	-	4.8338
282	2011	0.6885	-	-	-	-	2.6903	-	-	-	-	4.5876
283	2012	0.6359	-	-	-	-	2.6634	-	-	-	-	4.3120
284	2013	0.5833	-	-	-	-	2.6371	-	-	-	-	4.0419
285	2014	0.5317	0.5317	0.5317	0.5317	0.2127	2.6120	2.6120	2.6120	2.6120	1.0448	3.8009
286	2015	0.4804	-	-	-	0.2883	2.5884	-	-	-	1.5531	3.5242
287	2016	0.4433	-	-	-	-	2.5763	-	-	-	-	3.3371
288	2017	0.4056	-	-	-	-	2.5642	-	-	-	-	3.1472
289	2018	0.3675	-	-	-	-	2.5524	-	-	-	-	2.9540
290	2019	0.3299	-	-	-	-	2.5408	-	-	-	-	2.7589
291	2020	0.3012	-	-	-	-	2.5325	-	-	-	-	2.5767
292	2021	0.2483	-	-	-	-	2.4901	-	-	-	-	2.1974
293	2022	0.2303	-	-	-	-	2.4851	-	-	-	-	2.0388
294	2023	0.2146	-	-	-	-	2.4814	-	-	-	-	1.8956

	B		C	D	E	F	G	H	I	J	K	L	M
295		2024	0.2007	-	-	-	-	2.4786	-	-	-	-	1.7800
296		2025	0.1882	-	-	-	-	2.4760	-	-	-	-	1.6777
297				0.5317	0.5317	0.5317	0.5009		2.6120	2.6120	2.6120	2.5978	
298													
299													
300													
301	Graders			Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
302			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
307		2009	0.3650	-	-	-	-	1.1350	-	-	-	-	3.6633
308		2010	0.3686	-	-	-	-	1.1349	-	-	-	-	3.6742
309		2011	0.3665	-	-	-	-	1.1347	-	-	-	-	3.6425
310		2012	0.3677	-	-	-	-	1.1346	-	-	-	-	3.6362
311		2013	0.3666	-	-	-	-	1.1341	-	-	-	-	3.6104
312		2014	0.3623	0.3623	0.3623	0.3623	0.1449	1.1331	1.1331	1.1331	1.1331	0.4532	3.5565
313		2015	0.3610	-	-	-	0.2166	1.1326	-	-	-	0.6795	3.5301
314		2016	0.3463	-	-	-	-	1.1310	-	-	-	-	3.3716
315		2017	0.3238	-	-	-	-	1.1279	-	-	-	-	3.1317
316		2018	0.2829	-	-	-	-	1.1248	-	-	-	-	2.6993
317		2019	0.2604	-	-	-	-	1.1240	-	-	-	-	2.4577
318		2020	0.2424	-	-	-	-	1.1231	-	-	-	-	2.2603
319		2021	0.2161	-	-	-	-	1.1243	-	-	-	-	1.9779
320		2022	0.1883	-	-	-	-	1.1244	-	-	-	-	1.6858
321		2023	0.1668	-	-	-	-	1.1241	-	-	-	-	1.4500
322		2024	0.1556	-	-	-	-	1.1242	-	-	-	-	1.3087
323		2025	0.1406	-	-	-	-	1.1242	-	-	-	-	1.1337
324				0.3623	0.3623	0.3623	0.3615		1.1331	1.1331	1.1331	1.1328	
325													
326													
327													
328	Off-Highway Tractors			Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
329			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
334		2009	0.2402	-	-	-	-	1.1749	-	-	-	-	2.7415
335		2010	0.2388	-	-	-	-	1.1751	-	-	-	-	2.6977
336		2011	0.2255	-	-	-	-	1.1747	-	-	-	-	2.5612
337		2012	0.2197	-	-	-	-	1.1746	-	-	-	-	2.4863
338		2013	0.2085	-	-	-	-	1.1747	-	-	-	-	2.3609
339		2014	0.1933	0.1933	0.1933	0.1933	0.0773	1.1751	1.1751	1.1751	1.1751	0.4700	2.1885
340		2015	0.1831	-	-	-	0.1099	1.1744	-	-	-	0.7046	2.0572
341		2016	0.1782	-	-	-	-	1.1750	-	-	-	-	1.9645
342		2017	0.1622	-	-	-	-	1.1739	-	-	-	-	1.7533
343		2018	0.1435	-	-	-	-	1.1738	-	-	-	-	1.5232
344		2019	0.1341	-	-	-	-	1.1738	-	-	-	-	1.3969
345		2020	0.1235	-	-	-	-	1.1737	-	-	-	-	1.2587
346		2021	0.1179	-	-	-	-	1.1738	-	-	-	-	1.1583
347		2022	0.1054	-	-	-	-	1.1735	-	-	-	-	0.9750
348		2023	0.0916	-	-	-	-	1.1739	-	-	-	-	0.7773
349		2024	0.0832	-	-	-	-	1.1742	-	-	-	-	0.6514
350		2025	0.0799	-	-	-	-	1.1747	-	-	-	-	0.5873
351				0.1933	0.1933	0.1933	0.1872		1.1751	1.1751	1.1751	1.1747	
352													
353													
354													
355	Off-Highway Trucks			Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
356			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
361		2009	0.1650	-	-	-	-	0.6097	-	-	-	-	2.1007
362		2010	0.1719	-	-	-	-	0.6096	-	-	-	-	2.1083
363		2011	0.1731	-	-	-	-	0.6094	-	-	-	-	2.0615
364		2012	0.1766	-	-	-	-	0.6094	-	-	-	-	2.0534
365		2013	0.1688	-	-	-	-	0.6097	-	-	-	-	1.9333
366		2014	0.1573	0.1573	0.1573	0.1573	0.0629	0.6099	0.6099	0.6099	0.6099	0.2439	1.7895
367		2015	0.1537	-	-	-	0.0922	0.6099	-	-	-	0.3660	1.7292
368		2016	0.1404	-	-	-	-	0.6091	-	-	-	-	1.5459
369		2017	0.1300	-	-	-	-	0.6085	-	-	-	-	1.4010
370		2018	0.1147	-	-	-	-	0.6085	-	-	-	-	1.1801
371		2019	0.1053	-	-	-	-	0.6082	-	-	-	-	1.0191
372		2020	0.0984	-	-	-	-	0.6079	-	-	-	-	0.8962
373		2021	0.0899	-	-	-	-	0.6079	-	-	-	-	0.7461
374		2022	0.0784	-	-	-	-	0.6081	-	-	-	-	0.5689
375		2023	0.0748	-	-	-	-	0.6085	-	-	-	-	0.5057
376		2024	0.0737	-	-	-	-	0.6087	-	-	-	-	0.4717
377		2025	0.0709	-	-	-	-	0.6084	-	-	-	-	0.4063
378				0.1573	0.1573	0.1573	0.1551		0.6099	0.6099	0.6099	0.6099	
379													
380													
381													
382	Other Construction Equipment			Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
383			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
388		2009	0.2776	-	-	-	-	1.1888	-	-	-	-	3.0247
389		2010	0.2811	-	-	-	-	1.1889	-	-	-	-	3.0364
390		2011	0.2651	-	-	-	-	1.1885	-	-	-	-	2.8750
391		2012	0.2670	-	-	-	-	1.1885	-	-	-	-	2.8730
392		2013	0.2587	-	-	-	-	1.1891	-	-	-	-	2.7794
393		2014	0.2463	0.2463	0.2463	0.2463	0.0985	1.1895	1.1895	1.1895	1.1895	0.4758	2.6469
394		2015	0.2422	-	-	-	0.1453	1.1894	-	-	-	0.7137	2.5882
395		2016	0.2280	-	-	-	-	1.1891	-	-	-	-	2.4166
396		2017	0.2176	-	-	-	-	1.1887	-	-	-	-	2.2823

	B	C	D	E	F	G	H	I	J	K	L	M
397	2018	0.1897	-	-	-	-	1.1884	-	-	-	-	1.9752
398	2019	0.1791	-	-	-	-	1.1891	-	-	-	-	1.8415
399	2020	0.1686	-	-	-	-	1.1890	-	-	-	-	1.7081
400	2021	0.1433	-	-	-	-	1.1885	-	-	-	-	1.4283
401	2022	0.1283	-	-	-	-	1.1881	-	-	-	-	1.2439
402	2023	0.1189	-	-	-	-	1.1880	-	-	-	-	1.1208
403	2024	0.1133	-	-	-	-	1.1879	-	-	-	-	1.0469
404	2025	0.1021	-	-	-	-	1.1887	-	-	-	-	0.9003
405			0.2463	0.2463	0.2463	0.2439		1.1895	1.1895	1.1895	1.1894	
406												
407												
408												
409	Other General Industrial Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
410		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
415	2009	0.3056	-	-	-	-	0.8686	-	-	-	-	2.5284
416	2010	0.3057	-	-	-	-	0.8686	-	-	-	-	2.5164
417	2011	0.3024	-	-	-	-	0.8686	-	-	-	-	2.4769
418	2012	0.3031	-	-	-	-	0.8686	-	-	-	-	2.4653
419	2013	0.2952	-	-	-	-	0.8686	-	-	-	-	2.4032
420	2014	0.2820	0.2820	0.2820	0.2820	0.1128	0.8686	0.8686	0.8686	0.8686	0.3474	2.2972
421	2015	0.2720	-	-	-	0.1632	0.8686	-	-	-	0.5212	2.2216
422	2016	0.2559	-	-	-	-	0.8686	-	-	-	-	2.0994
423	2017	0.2360	-	-	-	-	0.8686	-	-	-	-	1.9550
424	2018	0.1993	-	-	-	-	0.8686	-	-	-	-	1.6930
425	2019	0.1787	-	-	-	-	0.8686	-	-	-	-	1.5365
426	2020	0.1595	-	-	-	-	0.8686	-	-	-	-	1.3876
427	2021	0.1444	-	-	-	-	0.8686	-	-	-	-	1.2703
428	2022	0.1211	-	-	-	-	0.8686	-	-	-	-	1.0933
429	2023	0.1100	-	-	-	-	0.8686	-	-	-	-	0.9991
430	2024	0.1027	-	-	-	-	0.8686	-	-	-	-	0.9252
431	2025	0.0921	-	-	-	-	0.8686	-	-	-	-	0.8334
432			0.2820	0.2820	0.2820	0.2760		0.8686	0.8686	0.8686	0.8686	
433												
434												
435												
436	Other Material Handling Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
437		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
442	2009	0.2426	-	-	-	-	1.0781	-	-	-	-	2.6300
443	2010	0.2447	-	-	-	-	1.0781	-	-	-	-	2.6206
444	2011	0.2417	-	-	-	-	1.0781	-	-	-	-	2.5639
445	2012	0.2408	-	-	-	-	1.0781	-	-	-	-	2.5335
446	2013	0.2315	-	-	-	-	1.0781	-	-	-	-	2.4325
447	2014	0.2186	0.2186	0.2186	0.2186	0.0874	1.0781	1.0781	1.0781	1.0781	0.4312	2.2918
448	2015	0.2172	-	-	-	0.1303	1.0781	-	-	-	0.6468	2.2313
449	2016	0.2022	-	-	-	-	1.0781	-	-	-	-	2.0601
450	2017	0.1766	-	-	-	-	1.0781	-	-	-	-	1.7741
451	2018	0.1351	-	-	-	-	1.0781	-	-	-	-	1.3173
452	2019	0.1157	-	-	-	-	1.0781	-	-	-	-	1.0964
453	2020	0.1043	-	-	-	-	1.0781	-	-	-	-	0.9355
454	2021	0.1029	-	-	-	-	1.0781	-	-	-	-	0.8880
455	2022	0.0933	-	-	-	-	1.0781	-	-	-	-	0.7486
456	2023	0.0897	-	-	-	-	1.0781	-	-	-	-	0.6993
457	2024	0.0862	-	-	-	-	1.0781	-	-	-	-	0.6478
458	2025	0.0783	-	-	-	-	1.0781	-	-	-	-	0.5518
459			0.2186	0.2186	0.2186	0.2178		1.0781	1.0781	1.0781	1.0781	
460												
461												
462												
463	Pavers	ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
468	2009	0.2507	-	-	-	-	1.2817	-	-	-	-	2.7677
469	2010	0.2534	-	-	-	-	1.2818	-	-	-	-	2.7702
470	2011	0.2465	-	-	-	-	1.2820	-	-	-	-	2.6800
471	2012	0.2476	-	-	-	-	1.2822	-	-	-	-	2.6759
472	2013	0.2302	-	-	-	-	1.2809	-	-	-	-	2.5170
473	2014	0.2184	0.2184	0.2184	0.2184	0.0874	1.2801	1.2801	1.2801	1.2801	0.5120	2.3829
474	2015	0.2128	-	-	-	0.1277	1.2805	-	-	-	0.7683	2.2999
475	2016	0.1884	-	-	-	-	1.2808	-	-	-	-	2.0246
476	2017	0.1691	-	-	-	-	1.2816	-	-	-	-	1.8083
477	2018	0.1473	-	-	-	-	1.2822	-	-	-	-	1.5566
478	2019	0.1299	-	-	-	-	1.2821	-	-	-	-	1.3479
479	2020	0.1186	-	-	-	-	1.2818	-	-	-	-	1.2123
480	2021	0.1112	-	-	-	-	1.2812	-	-	-	-	1.1194
481	2022	0.0934	-	-	-	-	1.2817	-	-	-	-	0.9054
482	2023	0.0867	-	-	-	-	1.2816	-	-	-	-	0.8122
483	2024	0.0829	-	-	-	-	1.2815	-	-	-	-	0.7514
484	2025	0.0785	-	-	-	-	1.2810	-	-	-	-	0.6829
485			0.2184	0.2184	0.2184	0.2150		1.2801	1.2801	1.2801	1.2803	
486												
487												
488												
489	Paving Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
490		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
495	2009	0.1752	-	-	-	-	1.1710	-	-	-	-	2.1495
496	2010	0.1791	-	-	-	-	1.1710	-	-	-	-	2.1644
497	2011	0.1765	-	-	-	-	1.1711	-	-	-	-	2.1218
498	2012	0.1766	-	-	-	-	1.1708	-	-	-	-	2.1067

	B	C	D	E	F	G	H	I	J	K	L	M
499	2013	0.1661	-	-	-	-	1.1698	-	-	-	-	1.9898
500	2014	0.1543	0.1543	0.1543	0.1543	0.0617	1.1698	1.1698	1.1698	1.1698	0.4679	1.8521
501	2015	0.1527	-	-	-	0.0916	1.1700	-	-	-	0.7020	1.7633
502	2016	0.1382	-	-	-	-	1.1703	-	-	-	-	1.5346
503	2017	0.1273	-	-	-	-	1.1707	-	-	-	-	1.3836
504	2018	0.1054	-	-	-	-	1.1705	-	-	-	-	1.1264
505	2019	0.0944	-	-	-	-	1.1702	-	-	-	-	0.9561
506	2020	0.0920	-	-	-	-	1.1701	-	-	-	-	0.9073
507	2021	0.0852	-	-	-	-	1.1699	-	-	-	-	0.8221
508	2022	0.0790	-	-	-	-	1.1699	-	-	-	-	0.7362
509	2023	0.0757	-	-	-	-	1.1699	-	-	-	-	0.6791
510	2024	0.0731	-	-	-	-	1.1699	-	-	-	-	0.6339
511	2025	0.0651	-	-	-	-	1.1695	-	-	-	-	0.5358
512			0.1543	0.1543	0.1543	0.1533		1.1698	1.1698	1.1698	1.1699	
513												
514												
515												
516	Plate Compactors		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
517		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
522	2009	0.2882	-	-	-	-	1.4921	-	-	-	-	1.8206
523	2010	0.2859	-	-	-	-	1.4921	-	-	-	-	1.7967
524	2011	0.2848	-	-	-	-	1.4921	-	-	-	-	1.7846
525	2012	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
526	2013	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
527	2014	0.2845	0.2845	0.2845	0.2845	0.1138	1.4921	1.4921	1.4921	1.4921	0.5968	1.7814
528	2015	0.2845	-	-	-	0.1707	1.4921	-	-	-	0.8953	1.7814
529	2016	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
530	2017	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
531	2018	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
532	2019	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
533	2020	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
534	2021	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
535	2022	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
536	2023	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
537	2024	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
538	2025	0.2845	-	-	-	-	1.4921	-	-	-	-	1.7814
539			0.2845	0.2845	0.2845	0.2845		1.4921	1.4921	1.4921	1.4921	
540												
541												
542												
543	Pressure Washers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
544		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
549	2009	0.5144	-	-	-	-	1.3823	-	-	-	-	1.6710
550	2010	0.4808	-	-	-	-	1.3475	-	-	-	-	1.6455
551	2011	0.4447	-	-	-	-	1.3092	-	-	-	-	1.6181
552	2012	0.4053	-	-	-	-	1.2667	-	-	-	-	1.5888
553	2013	0.3656	-	-	-	-	1.2238	-	-	-	-	1.5235
554	2014	0.3267	0.3267	0.3267	0.3267	0.1307	1.1826	1.1826	1.1826	1.1826	0.4730	1.4604
555	2015	0.2914	-	-	-	0.1748	1.1479	-	-	-	0.6888	1.4047
556	2016	0.2658	-	-	-	-	1.1268	-	-	-	-	1.3715
557	2017	0.2398	-	-	-	-	1.1054	-	-	-	-	1.3379
558	2018	0.2134	-	-	-	-	1.0838	-	-	-	-	1.3034
559	2019	0.1873	-	-	-	-	1.0619	-	-	-	-	1.2676
560	2020	0.1673	-	-	-	-	1.0452	-	-	-	-	1.2330
561	2021	0.1356	-	-	-	-	1.0023	-	-	-	-	1.1446
562	2022	0.1236	-	-	-	-	0.9916	-	-	-	-	1.1107
563	2023	0.1131	-	-	-	-	0.9826	-	-	-	-	1.0788
564	2024	0.1040	-	-	-	-	0.9751	-	-	-	-	1.0487
565	2025	0.0961	-	-	-	-	0.9683	-	-	-	-	1.0190
566			0.3267	0.3267	0.3267	0.3055		1.1826	1.1826	1.1826	1.1618	
567												
568												
569												
570	Pumps		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
571		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
576	2009	0.8081	-	-	-	-	2.7822	-	-	-	-	5.1466
577	2010	0.7614	-	-	-	-	2.7582	-	-	-	-	4.9074
578	2011	0.7125	-	-	-	-	2.7329	-	-	-	-	4.6580
579	2012	0.6592	-	-	-	-	2.7055	-	-	-	-	4.3784
580	2013	0.6058	-	-	-	-	2.6786	-	-	-	-	4.1039
581	2014	0.5533	0.5533	0.5533	0.5533	0.2213	2.6529	2.6529	2.6529	2.6529	1.0611	3.8588
582	2015	0.5011	-	-	-	0.3007	2.6287	-	-	-	1.5772	3.5780
583	2016	0.4637	-	-	-	-	2.6173	-	-	-	-	3.3884
584	2017	0.4256	-	-	-	-	2.6059	-	-	-	-	3.1957
585	2018	0.3871	-	-	-	-	2.5947	-	-	-	-	2.9995
586	2019	0.3490	-	-	-	-	2.5835	-	-	-	-	2.8011
587	2020	0.3198	-	-	-	-	2.5756	-	-	-	-	2.6159
588	2021	0.2640	-	-	-	-	2.5278	-	-	-	-	2.2288
589	2022	0.2456	-	-	-	-	2.5229	-	-	-	-	2.0675
590	2023	0.2294	-	-	-	-	2.5195	-	-	-	-	1.9220
591	2024	0.2151	-	-	-	-	2.5169	-	-	-	-	1.8043
592	2025	0.2021	-	-	-	-	2.5146	-	-	-	-	1.7001
593			0.5533	0.5533	0.5533	0.5220		2.6529	2.6529	2.6529	2.6384	
594												
595												
596												

	B	C	D	E	F	G	H	I	J	K	L	M
597	Rollers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
598		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
603	2009	0.3258	-	-	-	-	1.0656	-	-	-	-	2.8286
604	2010	0.3246	-	-	-	-	1.0657	-	-	-	-	2.8145
605	2011	0.3050	-	-	-	-	1.0649	-	-	-	-	2.6766
606	2012	0.3049	-	-	-	-	1.0647	-	-	-	-	2.6587
607	2013	0.2883	-	-	-	-	1.0646	-	-	-	-	2.5325
608	2014	0.2729	0.2729	0.2729	0.2729	0.1092	1.0638	1.0638	1.0638	1.0638	0.4255	2.3977
609	2015	0.2683	-	-	-	0.1610	1.0637	-	-	-	0.6382	2.3531
610	2016	0.2467	-	-	-	-	1.0637	-	-	-	-	2.1783
611	2017	0.2277	-	-	-	-	1.0634	-	-	-	-	2.0304
612	2018	0.1889	-	-	-	-	1.0633	-	-	-	-	1.7449
613	2019	0.1659	-	-	-	-	1.0633	-	-	-	-	1.5681
614	2020	0.1524	-	-	-	-	1.0634	-	-	-	-	1.4563
615	2021	0.1388	-	-	-	-	1.0635	-	-	-	-	1.3466
616	2022	0.1218	-	-	-	-	1.0636	-	-	-	-	1.2078
617	2023	0.1126	-	-	-	-	1.0636	-	-	-	-	1.1267
618	2024	0.1067	-	-	-	-	1.0638	-	-	-	-	1.0667
619	2025	0.1003	-	-	-	-	1.0634	-	-	-	-	1.0098
620			0.2729	0.2729	0.2729	0.2702		1.0638	1.0638	1.0638	1.0638	
621												
622												
623												
624												
625	Rough Terrain Forklifts		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
626		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
631	2009	0.2263	-	-	-	-	1.1458	-	-	-	-	2.4140
632	2010	0.2149	-	-	-	-	1.1456	-	-	-	-	2.3359
633	2011	0.1941	-	-	-	-	1.1452	-	-	-	-	2.1857
634	2012	0.1875	-	-	-	-	1.1450	-	-	-	-	2.1270
635	2013	0.1661	-	-	-	-	1.1447	-	-	-	-	1.9792
636	2014	0.1476	0.1476	0.1476	0.1476	0.0590	1.1447	1.1447	1.1447	1.1447	0.4579	1.7958
637	2015	0.1421	-	-	-	0.0852	1.1449	-	-	-	0.6869	1.7206
638	2016	0.1269	-	-	-	-	1.1454	-	-	-	-	1.5437
639	2017	0.1140	-	-	-	-	1.1454	-	-	-	-	1.3739
640	2018	0.0935	-	-	-	-	1.1452	-	-	-	-	1.1437
641	2019	0.0849	-	-	-	-	1.1451	-	-	-	-	1.0541
642	2020	0.0796	-	-	-	-	1.1456	-	-	-	-	0.9858
643	2021	0.0735	-	-	-	-	1.1459	-	-	-	-	0.9187
644	2022	0.0667	-	-	-	-	1.1458	-	-	-	-	0.8435
645	2023	0.0631	-	-	-	-	1.1460	-	-	-	-	0.7974
646	2024	0.0611	-	-	-	-	1.1458	-	-	-	-	0.7694
647	2025	0.0578	-	-	-	-	1.1457	-	-	-	-	0.7319
648			0.1476	0.1476	0.1476	0.1443		1.1447	1.1447	1.1447	1.1448	
649												
650												
651												
652												
653	Rubber Tired Dozers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
654		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
659	2009	0.3098	-	-	-	-	0.9839	-	-	-	-	3.4941
660	2010	0.3072	-	-	-	-	0.9829	-	-	-	-	3.4419
661	2011	0.3054	-	-	-	-	0.9835	-	-	-	-	3.4012
662	2012	0.3070	-	-	-	-	0.9833	-	-	-	-	3.3934
663	2013	0.3004	-	-	-	-	0.9831	-	-	-	-	3.2954
664	2014	0.2926	0.2926	0.2926	0.2926	0.1170	0.9821	0.9821	0.9821	0.9821	0.3928	3.1854
665	2015	0.2928	-	-	-	0.1757	0.9817	-	-	-	0.5890	3.1614
666	2016	0.2848	-	-	-	-	0.9807	-	-	-	-	3.0479
667	2017	0.2738	-	-	-	-	0.9817	-	-	-	-	2.8989
668	2018	0.2474	-	-	-	-	0.9823	-	-	-	-	2.5702
669	2019	0.2367	-	-	-	-	0.9827	-	-	-	-	2.4285
670	2020	0.2213	-	-	-	-	0.9828	-	-	-	-	2.2298
671	2021	0.2037	-	-	-	-	0.9812	-	-	-	-	2.0085
672	2022	0.1964	-	-	-	-	0.9819	-	-	-	-	1.9005
673	2023	0.1848	-	-	-	-	0.9822	-	-	-	-	1.7426
674	2024	0.1723	-	-	-	-	0.9820	-	-	-	-	1.5932
675	2025	0.1518	-	-	-	-	0.9814	-	-	-	-	1.3320
676			0.2926	0.2926	0.2926	0.2927		0.9821	0.9821	0.9821	0.9818	
677												
678												
679												
680												
681	Rubber Tired Loaders		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
682		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
687	2009	0.1464	-	-	-	-	0.8859	-	-	-	-	2.1401
688	2010	0.1514	-	-	-	-	0.8858	-	-	-	-	2.1514
689	2011	0.1531	-	-	-	-	0.8857	-	-	-	-	2.1263
690	2012	0.1566	-	-	-	-	0.8857	-	-	-	-	2.1194
691	2013	0.1580	-	-	-	-	0.8856	-	-	-	-	2.0814
692	2014	0.1540	0.1540	0.1540	0.1540	0.0616	0.8853	0.8853	0.8853	0.8853	0.3541	1.9882
693	2015	0.1536	-	-	-	0.0921	0.8852	-	-	-	0.5311	1.9426
694	2016	0.1489	-	-	-	-	0.8851	-	-	-	-	1.8506
695	2017	0.1411	-	-	-	-	0.8853	-	-	-	-	1.7203
696	2018	0.1263	-	-	-	-	0.8849	-	-	-	-	1.4947
697	2019	0.1172	-	-	-	-	0.8850	-	-	-	-	1.3548
698	2020	0.1099	-	-	-	-	0.8847	-	-	-	-	1.2378

	B	C	D	E	F	G	H	I	J	K	L	M
699	2021	0.1008	-	-	-	-	0.8848	-	-	-	-	1.0846
700	2022	0.0856	-	-	-	-	0.8854	-	-	-	-	0.8491
701	2023	0.0795	-	-	-	-	0.8853	-	-	-	-	0.7452
702	2024	0.0746	-	-	-	-	0.8852	-	-	-	-	0.6534
703	2025	0.0672	-	-	-	-	0.8854	-	-	-	-	0.5217
704			0.1540	0.1540	0.1540	0.1537		0.8853	0.8853	0.8853	0.8852	
705												
706												
707												
708												
709	Scrapers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
710		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
715	2009	0.2490	-	-	-	-	1.1397	-	-	-	-	3.2550
716	2010	0.2524	-	-	-	-	1.1396	-	-	-	-	3.2588
717	2011	0.2505	-	-	-	-	1.1398	-	-	-	-	3.2064
718	2012	0.2531	-	-	-	-	1.1399	-	-	-	-	3.2046
719	2013	0.2506	-	-	-	-	1.1400	-	-	-	-	3.1439
720	2014	0.2417	0.2417	0.2417	0.2417	0.0967	1.1398	1.1398	1.1398	1.1398	0.4559	3.0068
721	2015	0.2384	-	-	-	0.1430	1.1394	-	-	-	0.6837	2.9358
722	2016	0.2284	-	-	-	-	1.1387	-	-	-	-	2.7774
723	2017	0.2146	-	-	-	-	1.1386	-	-	-	-	2.5758
724	2018	0.1864	-	-	-	-	1.1390	-	-	-	-	2.2035
725	2019	0.1731	-	-	-	-	1.1386	-	-	-	-	2.0051
726	2020	0.1613	-	-	-	-	1.1385	-	-	-	-	1.8247
727	2021	0.1510	-	-	-	-	1.1392	-	-	-	-	1.6618
728	2022	0.1331	-	-	-	-	1.1410	-	-	-	-	1.3886
729	2023	0.1279	-	-	-	-	1.1409	-	-	-	-	1.2861
730	2024	0.1235	-	-	-	-	1.1401	-	-	-	-	1.1949
731	2025	0.1092	-	-	-	-	1.1394	-	-	-	-	0.9892
732			0.2417	0.2417	0.2417	0.2397		1.1398	1.1398	1.1398	1.1396	
733												
734												
735												
736												
737	Signal Boards		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
738		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
743	2009	1.9377	-	-	-	-	4.7943	-	-	-	-	4.5821
744	2010	1.8287	-	-	-	-	4.6872	-	-	-	-	4.5175
745	2011	1.7007	-	-	-	-	4.5519	-	-	-	-	4.4445
746	2012	1.5578	-	-	-	-	4.3950	-	-	-	-	4.3658
747	2013	1.4124	-	-	-	-	4.2356	-	-	-	-	4.1837
748	2014	1.2707	1.2707	1.2707	1.2707	0.5083	4.0833	4.0833	4.0833	4.0833	1.6333	4.0101
749	2015	1.1427	-	-	-	0.6856	3.9563	-	-	-	2.3738	3.8569
750	2016	1.0219	-	-	-	-	3.8421	-	-	-	-	3.7151
751	2017	0.9050	-	-	-	-	3.7333	-	-	-	-	3.5801
752	2018	0.7949	-	-	-	-	3.6330	-	-	-	-	3.4529
753	2019	0.6926	-	-	-	-	3.5401	-	-	-	-	3.3321
754	2020	0.6158	-	-	-	-	3.4698	-	-	-	-	3.2226
755	2021	0.5583	-	-	-	-	3.4169	-	-	-	-	3.1215
756	2022	0.5117	-	-	-	-	3.3747	-	-	-	-	3.0265
757	2023	0.4713	-	-	-	-	3.3405	-	-	-	-	2.9382
758	2024	0.4373	-	-	-	-	3.3133	-	-	-	-	2.8565
759	2025	0.4077	-	-	-	-	3.2901	-	-	-	-	2.7778
760			1.2707	1.2707	1.2707	1.1939		4.0833	4.0833	4.0833	4.0071	
761												
762												
763												
764												
765	Skid Steer Loaders		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
766		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
771	2009	0.1753	-	-	-	-	1.2361	-	-	-	-	1.9956
772	2010	0.1636	-	-	-	-	1.2358	-	-	-	-	1.9140
773	2011	0.1491	-	-	-	-	1.2351	-	-	-	-	1.7995
774	2012	0.1437	-	-	-	-	1.2346	-	-	-	-	1.7448
775	2013	0.1312	-	-	-	-	1.2339	-	-	-	-	1.6370
776	2014	0.1173	0.1173	0.1173	0.1173	0.0469	1.2340	1.2340	1.2340	1.2340	0.4936	1.4789
777	2015	0.1133	-	-	-	0.0680	1.2335	-	-	-	0.7401	1.4042
778	2016	0.1053	-	-	-	-	1.2334	-	-	-	-	1.3024
779	2017	0.0984	-	-	-	-	1.2331	-	-	-	-	1.2110
780	2018	0.0832	-	-	-	-	1.2322	-	-	-	-	1.0539
781	2019	0.0769	-	-	-	-	1.2326	-	-	-	-	0.9787
782	2020	0.0727	-	-	-	-	1.2326	-	-	-	-	0.9229
783	2021	0.0686	-	-	-	-	1.2328	-	-	-	-	0.8718
784	2022	0.0633	-	-	-	-	1.2340	-	-	-	-	0.8067
785	2023	0.0592	-	-	-	-	1.2346	-	-	-	-	0.7512
786	2024	0.0567	-	-	-	-	1.2351	-	-	-	-	0.7180
787	2025	0.0539	-	-	-	-	1.2345	-	-	-	-	0.6881
788			0.1173	0.1173	0.1173	0.1149		1.2340	1.2340	1.2340	1.2337	
789												
790												
791												
792												
793	Surfacing Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
794		ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
799	2009	0.0798	-	-	-	-	0.7479	-	-	-	-	1.3623
800	2010	0.0791	-	-	-	-	0.7470	-	-	-	-	1.3365

	B		C	D	E	F	G	H	I	J	K	L	M
801		2011	0.0768	-	-	-	-	0.7452	-	-	-	-	1.2865
802		2012	0.0769	-	-	-	-	0.7451	-	-	-	-	1.2672
803		2013	0.0766	-	-	-	-	0.7447	-	-	-	-	1.2339
804		2014	0.0748	0.0748	0.0748	0.0748	0.0299	0.7448	0.7448	0.7448	0.7448	0.2979	1.1744
805		2015	0.0760	-	-	-	0.0456	0.7448	-	-	-	0.4469	1.1760
806		2016	0.0685	-	-	-	-	0.7437	-	-	-	-	1.0456
807		2017	0.0643	-	-	-	-	0.7471	-	-	-	-	0.9366
808		2018	0.0497	-	-	-	-	0.7453	-	-	-	-	0.6645
809		2019	0.0459	-	-	-	-	0.7482	-	-	-	-	0.5727
810		2020	0.0459	-	-	-	-	0.7485	-	-	-	-	0.5540
811		2021	0.0444	-	-	-	-	0.7487	-	-	-	-	0.5285
812		2022	0.0417	-	-	-	-	0.7467	-	-	-	-	0.4695
813		2023	0.0415	-	-	-	-	0.7465	-	-	-	-	0.4449
814		2024	0.0422	-	-	-	-	0.7463	-	-	-	-	0.4455
815		2025	0.0403	-	-	-	-	0.7464	-	-	-	-	0.4000
816				0.0748	0.0748	0.0748	0.0755		0.7448	0.7448	0.7448	0.7448	
817													
818													
819													
820													
821	Sweepers/Scrubbers			Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
822		ROG		Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
827		2009	0.4311	-	-	-	-	1.3931	-	-	-	-	3.4829
828		2010	0.4382	-	-	-	-	1.3931	-	-	-	-	3.5034
829		2011	0.4287	-	-	-	-	1.3931	-	-	-	-	3.4168
830		2012	0.4323	-	-	-	-	1.3931	-	-	-	-	3.4182
831		2013	0.4085	-	-	-	-	1.3931	-	-	-	-	3.2565
832		2014	0.3970	0.3970	0.3970	0.3970	0.1588	1.3931	1.3931	1.3931	1.3931	0.5572	3.1591
833		2015	0.3974	-	-	-	0.2384	1.3931	-	-	-	0.8358	3.1374
834		2016	0.3732	-	-	-	-	1.3931	-	-	-	-	2.9405
835		2017	0.3436	-	-	-	-	1.3931	-	-	-	-	2.7428
836		2018	0.2858	-	-	-	-	1.3931	-	-	-	-	2.3399
837		2019	0.2621	-	-	-	-	1.3931	-	-	-	-	2.1744
838		2020	0.2479	-	-	-	-	1.3931	-	-	-	-	2.0420
839		2021	0.2099	-	-	-	-	1.3931	-	-	-	-	1.8051
840		2022	0.1776	-	-	-	-	1.3931	-	-	-	-	1.5819
841		2023	0.1672	-	-	-	-	1.3931	-	-	-	-	1.4968
842		2024	0.1583	-	-	-	-	1.3931	-	-	-	-	1.4117
843		2025	0.1445	-	-	-	-	1.3931	-	-	-	-	1.2836
844				0.3970	0.3970	0.3970	0.3973		1.3931	1.3931	1.3931	1.3931	
845													
846													
847													
848													
849	Tractors/Loaders/Backhoes			Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
850		ROG		Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
855		2009	0.1276	-	-	-	-	0.9084	-	-	-	-	1.2255
856		2010	0.1141	-	-	-	-	0.9088	-	-	-	-	1.1037
857		2011	0.1004	-	-	-	-	0.9099	-	-	-	-	0.9755
858		2012	0.0922	-	-	-	-	0.9109	-	-	-	-	0.8940
859		2013	0.0877	-	-	-	-	0.9114	-	-	-	-	0.8431
860		2014	0.0805	0.0805	0.0805	0.0805	0.0322	0.9123	0.9123	0.9123	0.9123	0.3649	0.7772
861		2015	0.2196	-	-	-	0.1317	0.9130	-	-	-	0.5478	1.9980
862		2016	0.2075	-	-	-	-	0.9118	-	-	-	-	1.8950
863		2017	0.1930	-	-	-	-	0.9107	-	-	-	-	1.7720
864		2018	0.1621	-	-	-	-	0.9093	-	-	-	-	1.5309
865		2019	0.1418	-	-	-	-	0.9087	-	-	-	-	1.3607
866		2020	0.1276	-	-	-	-	0.9084	-	-	-	-	1.2255
867		2021	0.1141	-	-	-	-	0.9088	-	-	-	-	1.1037
868		2022	0.1004	-	-	-	-	0.9099	-	-	-	-	0.9755
869		2023	0.0922	-	-	-	-	0.9109	-	-	-	-	0.8940
870		2024	0.0877	-	-	-	-	0.9114	-	-	-	-	0.8431
871		2025	0.0805	-	-	-	-	0.9123	-	-	-	-	0.7772
872				0.0805	0.0805	0.0805	0.1639		0.9123	0.9123	0.9123	0.9128	
873													
874													
875													
876													
877	Trenchers			Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
878		ROG		Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
883		2009	0.4913	-	-	-	-	1.4755	-	-	-	-	4.0635
884		2010	0.4858	-	-	-	-	1.4755	-	-	-	-	4.0196
885		2011	0.4619	-	-	-	-	1.4748	-	-	-	-	3.8566
886		2012	0.4652	-	-	-	-	1.4747	-	-	-	-	3.8665
887		2013	0.4468	-	-	-	-	1.4739	-	-	-	-	3.7438
888		2014	0.4303	0.4303	0.4303	0.4303	0.1721	1.4738	1.4738	1.4738	1.4738	0.5895	3.6266
889		2015	0.4297	-	-	-	0.2578	1.4736	-	-	-	0.8841	3.6072
890		2016	0.4144	-	-	-	-	1.4730	-	-	-	-	3.4684
891		2017	0.4005	-	-	-	-	1.4730	-	-	-	-	3.3561
892		2018	0.3461	-	-	-	-	1.4720	-	-	-	-	2.9724
893		2019	0.3321	-	-	-	-	1.4707	-	-	-	-	2.8618
894		2020	0.3209	-	-	-	-	1.4717	-	-	-	-	2.7736
895		2021	0.2924	-	-	-	-	1.4721	-	-	-	-	2.5657
896		2022	0.2782	-	-	-	-	1.4723	-	-	-	-	2.4690
897		2023	0.2651	-	-	-	-	1.4734	-	-	-	-	2.3620
898		2024	0.2600	-	-	-	-	1.4732	-	-	-	-	2.3081

	B		C	D	E	F	G	H	I	J	K	L	M
899		2025	0.2401	-	-	-	-	1.4741	-	-	-	-	2.1502
900				0.4303	0.4303	0.4303	0.4299		1.4738	1.4738	1.4738	1.4737	
901													
902													
903													
904													
905	Welders			Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted	
906			ROG	Grubbing/Lanc	Grading	Drainage	Paving	CO	Grubbing/L	Grading	Drainage	Paving	NOx
911		2009	1.2418	-	-	-	-	2.9918	-	-	-	-	2.7010
912		2010	1.1798	-	-	-	-	2.9326	-	-	-	-	2.6654
913		2011	1.1080	-	-	-	-	2.8591	-	-	-	-	2.6259
914		2012	1.0245	-	-	-	-	2.7688	-	-	-	-	2.5818
915		2013	0.9370	-	-	-	-	2.6734	-	-	-	-	2.4825
916		2014	0.8488	0.8488	0.8488	0.8488	0.3395	2.5785	2.5785	2.5785	2.5785	1.0314	2.3858
917		2015	0.7675	-	-	-	0.4605	2.4972	-	-	-	1.4983	2.2994
918		2016	0.7108	-	-	-	-	2.4613	-	-	-	-	2.2523
919		2017	0.6511	-	-	-	-	2.4224	-	-	-	-	2.2039
920		2018	0.5887	-	-	-	-	2.3800	-	-	-	-	2.1532
921		2019	0.5248	-	-	-	-	2.3340	-	-	-	-	2.0994
922		2020	0.4752	-	-	-	-	2.2978	-	-	-	-	2.0467
923		2021	0.3829	-	-	-	-	2.1276	-	-	-	-	1.8856
924		2022	0.3517	-	-	-	-	2.1024	-	-	-	-	1.8312
925		2023	0.3247	-	-	-	-	2.0829	-	-	-	-	1.7800
926		2024	0.3018	-	-	-	-	2.0678	-	-	-	-	1.7314
927		2025	0.2818	-	-	-	-	2.0545	-	-	-	-	1.6828
928				0.8488	0.8488	0.8488	0.8000		2.5785	2.5785	2.5785	2.5297	
929													

	N	O	P	Q	R	S	T	U	V	W	X	Y
1												
2												
3												92 % of PM2.5 in
4												
5	NOx	NOx	NOx	NOx		PM10	PM10	PM10	PM10		PM2.5	PM2.5
6	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
7	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land Cle	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
12	-	-	-	-	0.1137	-	-	-	-	0.1046	-	-
13	-	-	-	-	0.1015	-	-	-	-	0.0934	-	-
14	-	-	-	-	0.0886	-	-	-	-	0.0815	-	-
15	-	-	-	-	0.0774	-	-	-	-	0.0712	-	-
16	-	-	-	-	0.0622	-	-	-	-	0.0572	-	-
17	1.0395	1.0395	1.0395	0.4158	0.0496	0.0496	0.0496	0.0496	0.0198	0.0456	0.0456	0.0456
18	-	-	-	0.5757	0.0441	-	-	-	0.0265	0.0406	-	-
19	-	-	-	-	0.0345	-	-	-	-	0.0317	-	-
20	-	-	-	-	0.0257	-	-	-	-	0.0237	-	-
21	-	-	-	-	0.0176	-	-	-	-	0.0162	-	-
22	-	-	-	-	0.0150	-	-	-	-	0.0138	-	-
23	-	-	-	-	0.0128	-	-	-	-	0.0118	-	-
24	-	-	-	-	0.0103	-	-	-	-	0.0094	-	-
25	-	-	-	-	0.0093	-	-	-	-	0.0086	-	-
26	-	-	-	-	0.0082	-	-	-	-	0.0076	-	-
27	-	-	-	-	0.0082	-	-	-	-	0.0075	-	-
28	-	-	-	-	0.0080	-	-	-	-	0.0073	-	-
29	1.0395	1.0395	1.0395	0.9915		0.0496	0.0496	0.0496	0.0463		0.0456	0.0456
30												
31	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
32	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land Cle	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
37	-	-	-	-	0.3218	-	-	-	-	0.2961	-	-
38	-	-	-	-	0.3110	-	-	-	-	0.2861	-	-
39	-	-	-	-	0.2987	-	-	-	-	0.2748	-	-
40	-	-	-	-	0.2806	-	-	-	-	0.2581	-	-
41	-	-	-	-	0.2595	-	-	-	-	0.2387	-	-
42	2.6861	2.6861	2.6861	1.0744	0.2370	0.2370	0.2370	0.2370	0.0948	0.2180	0.2180	0.2180
43	-	-	-	1.4928	0.2139	-	-	-	0.1283	0.1968	-	-
44	-	-	-	-	0.1971	-	-	-	-	0.1813	-	-
45	-	-	-	-	0.1792	-	-	-	-	0.1649	-	-
46	-	-	-	-	0.1605	-	-	-	-	0.1476	-	-
47	-	-	-	-	0.1413	-	-	-	-	0.1300	-	-
48	-	-	-	-	0.1253	-	-	-	-	0.1153	-	-
49	-	-	-	-	0.0961	-	-	-	-	0.0884	-	-
50	-	-	-	-	0.0842	-	-	-	-	0.0775	-	-
51	-	-	-	-	0.0734	-	-	-	-	0.0675	-	-
52	-	-	-	-	0.0638	-	-	-	-	0.0587	-	-
53	-	-	-	-	0.0547	-	-	-	-	0.0504	-	-
54	2.6861	2.6861	2.6861	2.5672		0.2370	0.2370	0.2370	0.2231		0.2180	0.2180
55												
56	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
57	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
62	-	-	-	-	0.0712	-	-	-	-	0.0655	-	-
63	-	-	-	-	0.0696	-	-	-	-	0.0641	-	-
64	-	-	-	-	0.0665	-	-	-	-	0.0612	-	-
65	-	-	-	-	0.0671	-	-	-	-	0.0617	-	-
66	-	-	-	-	0.0621	-	-	-	-	0.0571	-	-
67	1.7711	1.7711	1.7711	0.7084	0.0527	0.0527	0.0527	0.0527	0.0211	0.0485	0.0485	0.0485
68	-	-	-	1.0023	0.0500	-	-	-	0.0300	0.0460	-	-
69	-	-	-	-	0.0428	-	-	-	-	0.0394	-	-
70	-	-	-	-	0.0364	-	-	-	-	0.0335	-	-
71	-	-	-	-	0.0306	-	-	-	-	0.0281	-	-
72	-	-	-	-	0.0270	-	-	-	-	0.0248	-	-
73	-	-	-	-	0.0262	-	-	-	-	0.0241	-	-
74	-	-	-	-	0.0236	-	-	-	-	0.0217	-	-
75	-	-	-	-	0.0188	-	-	-	-	0.0173	-	-
76	-	-	-	-	0.0170	-	-	-	-	0.0157	-	-
77	-	-	-	-	0.0162	-	-	-	-	0.0149	-	-
78	-	-	-	-	0.0158	-	-	-	-	0.0145	-	-
79	1.7711	1.7711	1.7711	1.7108		0.0527	0.0527	0.0527	0.0511		0.0485	0.0485
80												
81												
82												
83	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
84	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
89	-	-	-	-	0.1653	-	-	-	-	0.1520	-	-
90	-	-	-	-	0.1457	-	-	-	-	0.1340	-	-
91	-	-	-	-	0.1295	-	-	-	-	0.1191	-	-
92	-	-	-	-	0.1174	-	-	-	-	0.1080	-	-
93	-	-	-	-	0.1074	-	-	-	-	0.0988	-	-
94	2.3472	2.3472	2.3472	0.9389	0.0991	0.0991	0.0991	0.0991	0.0396	0.0912	0.0912	0.0912
95	-	-	-	1.4005	0.0959	-	-	-	0.0576	0.0883	-	-
96	-	-	-	-	0.0938	-	-	-	-	0.0863	-	-
97	-	-	-	-	0.0926	-	-	-	-	0.0852	-	-
98	-	-	-	-	0.0915	-	-	-	-	0.0842	-	-
99	-	-	-	-	0.0909	-	-	-	-	0.0836	-	-
100	-	-	-	-	0.0906	-	-	-	-	0.0834	-	-
101	-	-	-	-	0.0906	-	-	-	-	0.0833	-	-
102	-	-	-	-	0.0906	-	-	-	-	0.0834	-	-

	N	O	P	Q	R	S	T	U	V	W	X	Y
103	-	-	-	-	0.0906	-	-	-	-	0.0834	-	-
104	-	-	-	-	0.0907	-	-	-	-	0.0834	-	-
105	-	-	-	-	0.0907	-	-	-	-	0.0834	-	-
106	2.3472	2.3472	2.3472	2.3394		0.0991	0.0991	0.0991	0.0972		0.0912	0.0912
107												
108												
109												
110	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
111	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
116	-	-	-	-	0.4229	-	-	-	-	0.3891	-	-
117	-	-	-	-	0.4027	-	-	-	-	0.3705	-	-
118	-	-	-	-	0.3833	-	-	-	-	0.3527	-	-
119	-	-	-	-	0.3582	-	-	-	-	0.3295	-	-
120	-	-	-	-	0.3303	-	-	-	-	0.3038	-	-
121	3.7709	3.7709	3.7709	1.5084	0.3016	0.3016	0.3016	0.3016	0.1206	0.2774	0.2774	0.2774
122	-	-	-	2.0999	0.2729	-	-	-	0.1637	0.2510	-	-
123	-	-	-	-	0.2443	-	-	-	-	0.2248	-	-
124	-	-	-	-	0.2155	-	-	-	-	0.1982	-	-
125	-	-	-	-	0.1876	-	-	-	-	0.1726	-	-
126	-	-	-	-	0.1612	-	-	-	-	0.1483	-	-
127	-	-	-	-	0.1395	-	-	-	-	0.1284	-	-
128	-	-	-	-	0.1214	-	-	-	-	0.1117	-	-
129	-	-	-	-	0.1054	-	-	-	-	0.0969	-	-
130	-	-	-	-	0.0906	-	-	-	-	0.0833	-	-
131	-	-	-	-	0.0775	-	-	-	-	0.0713	-	-
132	-	-	-	-	0.0656	-	-	-	-	0.0604	-	-
133	3.7709	3.7709	3.7709	3.6083		0.3016	0.3016	0.3016	0.2844		0.2774	0.2774
134												
135												
136												
137												
138	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
139	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
144	-	-	-	-	0.1104	-	-	-	-	0.1016	-	-
145	-	-	-	-	0.1104	-	-	-	-	0.1016	-	-
146	-	-	-	-	0.1092	-	-	-	-	0.1005	-	-
147	-	-	-	-	0.1096	-	-	-	-	0.1009	-	-
148	-	-	-	-	0.1079	-	-	-	-	0.0993	-	-
149	2.2645	2.2645	2.2645	0.9058	0.1038	0.1038	0.1038	0.1038	0.0415	0.0955	0.0955	0.0955
150	-	-	-	1.3175	0.1002	-	-	-	0.0601	0.0922	-	-
151	-	-	-	-	0.0965	-	-	-	-	0.0888	-	-
152	-	-	-	-	0.0855	-	-	-	-	0.0786	-	-
153	-	-	-	-	0.0720	-	-	-	-	0.0662	-	-
154	-	-	-	-	0.0621	-	-	-	-	0.0571	-	-
155	-	-	-	-	0.0542	-	-	-	-	0.0499	-	-
156	-	-	-	-	0.0480	-	-	-	-	0.0442	-	-
157	-	-	-	-	0.0424	-	-	-	-	0.0390	-	-
158	-	-	-	-	0.0389	-	-	-	-	0.0357	-	-
159	-	-	-	-	0.0356	-	-	-	-	0.0327	-	-
160	-	-	-	-	0.0328	-	-	-	-	0.0302	-	-
161	2.2645	2.2645	2.2645	2.2233		0.1038	0.1038	0.1038	0.1017		0.0955	0.0955
162												
163												
164												
165												
166	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
167	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
172	-	-	-	-	0.1063	-	-	-	-	0.0978	-	-
173	-	-	-	-	0.1069	-	-	-	-	0.0984	-	-
174	-	-	-	-	0.1063	-	-	-	-	0.0978	-	-
175	-	-	-	-	0.1072	-	-	-	-	0.0986	-	-
176	-	-	-	-	0.1058	-	-	-	-	0.0974	-	-
177	2.6746	2.6746	2.6746	1.0699	0.1034	0.1034	0.1034	0.1034	0.0413	0.0951	0.0951	0.0951
178	-	-	-	1.5805	0.1016	-	-	-	0.0609	0.0934	-	-
179	-	-	-	-	0.1000	-	-	-	-	0.0920	-	-
180	-	-	-	-	0.0943	-	-	-	-	0.0867	-	-
181	-	-	-	-	0.0858	-	-	-	-	0.0789	-	-
182	-	-	-	-	0.0804	-	-	-	-	0.0740	-	-
183	-	-	-	-	0.0748	-	-	-	-	0.0689	-	-
184	-	-	-	-	0.0699	-	-	-	-	0.0643	-	-
185	-	-	-	-	0.0605	-	-	-	-	0.0556	-	-
186	-	-	-	-	0.0530	-	-	-	-	0.0488	-	-
187	-	-	-	-	0.0492	-	-	-	-	0.0452	-	-
188	-	-	-	-	0.0412	-	-	-	-	0.0379	-	-
189	2.6746	2.6746	2.6746	2.6504		0.1034	0.1034	0.1034	0.1023		0.0951	0.0951
190												
191												
192												

	N	O	P	Q	R	S	T	U	V	W	X	Y
193	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
194	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
199	-	-	-	-	0.2936	-	-	-	-	0.2702	-	-
200	-	-	-	-	0.2833	-	-	-	-	0.2606	-	-
201	-	-	-	-	0.2714	-	-	-	-	0.2497	-	-
202	-	-	-	-	0.2511	-	-	-	-	0.2310	-	-
203	-	-	-	-	0.2295	-	-	-	-	0.2111	-	-
204	3.7675	3.7675	3.7675	1.5070	0.2076	0.2076	0.2076	0.2076	0.0830	0.1910	0.1910	0.1910
205	-	-	-	2.0360	0.1860	-	-	-	0.1116	0.1711	-	-
206	-	-	-	-	0.1648	-	-	-	-	0.1516	-	-
207	-	-	-	-	0.1446	-	-	-	-	0.1330	-	-
208	-	-	-	-	0.1259	-	-	-	-	0.1159	-	-
209	-	-	-	-	0.1105	-	-	-	-	0.1017	-	-
210	-	-	-	-	0.0975	-	-	-	-	0.0897	-	-
211	-	-	-	-	0.0858	-	-	-	-	0.0789	-	-
212	-	-	-	-	0.0749	-	-	-	-	0.0689	-	-
213	-	-	-	-	0.0650	-	-	-	-	0.0598	-	-
214	-	-	-	-	0.0557	-	-	-	-	0.0512	-	-
215	-	-	-	-	0.0470	-	-	-	-	0.0432	-	-
216	3.7675	3.7675	3.7675	3.5431		0.2076	0.2076	0.2076	0.1946		0.1910	0.1910
217												
218												
219												
220	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
221	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
226	-	-	-	-	0.1158	-	-	-	-	0.1065	-	-
227	-	-	-	-	0.1142	-	-	-	-	0.1051	-	-
228	-	-	-	-	0.1060	-	-	-	-	0.0975	-	-
229	-	-	-	-	0.1050	-	-	-	-	0.0966	-	-
230	-	-	-	-	0.0968	-	-	-	-	0.0890	-	-
231	1.7785	1.7785	1.7785	0.7114	0.0874	0.0874	0.0874	0.0874	0.0350	0.0804	0.0804	0.0804
232	-	-	-	1.0267	0.0845	-	-	-	0.0507	0.0777	-	-
233	-	-	-	-	0.0767	-	-	-	-	0.0706	-	-
234	-	-	-	-	0.0695	-	-	-	-	0.0640	-	-
235	-	-	-	-	0.0541	-	-	-	-	0.0498	-	-
236	-	-	-	-	0.0466	-	-	-	-	0.0429	-	-
237	-	-	-	-	0.0421	-	-	-	-	0.0388	-	-
238	-	-	-	-	0.0377	-	-	-	-	0.0347	-	-
239	-	-	-	-	0.0310	-	-	-	-	0.0285	-	-
240	-	-	-	-	0.0273	-	-	-	-	0.0252	-	-
241	-	-	-	-	0.0249	-	-	-	-	0.0229	-	-
242	-	-	-	-	0.0216	-	-	-	-	0.0199	-	-
243	1.7785	1.7785	1.7785	1.7381		0.0874	0.0874	0.0874	0.0856		0.0804	0.0804
244												
245												
246												
247	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
248	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
253	-	-	-	-	0.1255	-	-	-	-	0.1154	-	-
254	-	-	-	-	0.1255	-	-	-	-	0.1155	-	-
255	-	-	-	-	0.1240	-	-	-	-	0.1141	-	-
256	-	-	-	-	0.1246	-	-	-	-	0.1147	-	-
257	-	-	-	-	0.1213	-	-	-	-	0.1116	-	-
258	1.3765	1.3765	1.3765	0.5506	0.1153	0.1153	0.1153	0.1153	0.0461	0.1061	0.1061	0.1061
259	-	-	-	0.7961	0.1115	-	-	-	0.0669	0.1025	-	-
260	-	-	-	-	0.1046	-	-	-	-	0.0962	-	-
261	-	-	-	-	0.0965	-	-	-	-	0.0888	-	-
262	-	-	-	-	0.0804	-	-	-	-	0.0740	-	-
263	-	-	-	-	0.0708	-	-	-	-	0.0652	-	-
264	-	-	-	-	0.0619	-	-	-	-	0.0569	-	-
265	-	-	-	-	0.0536	-	-	-	-	0.0493	-	-
266	-	-	-	-	0.0447	-	-	-	-	0.0412	-	-
267	-	-	-	-	0.0380	-	-	-	-	0.0349	-	-
268	-	-	-	-	0.0327	-	-	-	-	0.0301	-	-
269	-	-	-	-	0.0281	-	-	-	-	0.0258	-	-
270	1.3765	1.3765	1.3765	1.3467		0.1153	0.1153	0.1153	0.1130		0.1061	0.1061
271												
272												
273												
274	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
275	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
280	-	-	-	-	0.3945	-	-	-	-	0.3629	-	-
281	-	-	-	-	0.3790	-	-	-	-	0.3487	-	-
282	-	-	-	-	0.3628	-	-	-	-	0.3338	-	-
283	-	-	-	-	0.3393	-	-	-	-	0.3122	-	-
284	-	-	-	-	0.3124	-	-	-	-	0.2874	-	-
285	3.8009	3.8009	3.8009	1.5204	0.2845	0.2845	0.2845	0.2845	0.1138	0.2617	0.2617	0.2617
286	-	-	-	2.1145	0.2565	-	-	-	0.1539	0.2360	-	-
287	-	-	-	-	0.2365	-	-	-	-	0.2176	-	-
288	-	-	-	-	0.2158	-	-	-	-	0.1985	-	-
289	-	-	-	-	0.1943	-	-	-	-	0.1788	-	-
290	-	-	-	-	0.1725	-	-	-	-	0.1587	-	-
291	-	-	-	-	0.1543	-	-	-	-	0.1419	-	-
292	-	-	-	-	0.1195	-	-	-	-	0.1099	-	-
293	-	-	-	-	0.1056	-	-	-	-	0.0972	-	-
294	-	-	-	-	0.0929	-	-	-	-	0.0854	-	-

	N	O	P	Q	R	S	T	U	V	W	X	Y
295	-	-	-	-	0.0812	-	-	-	-	0.0747	-	-
296	-	-	-	-	0.0701	-	-	-	-	0.0645	-	-
297	3.8009	3.8009	3.8009	3.6349		0.2845	0.2845	0.2845	0.2677		0.2617	0.2617
298												
299												
300												
301	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
302	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
307	-	-	-	-	0.2005	-	-	-	-	0.1845	-	-
308	-	-	-	-	0.2028	-	-	-	-	0.1866	-	-
309	-	-	-	-	0.2021	-	-	-	-	0.1859	-	-
310	-	-	-	-	0.2027	-	-	-	-	0.1865	-	-
311	-	-	-	-	0.2024	-	-	-	-	0.1862	-	-
312	3.5565	3.5565	3.5565	1.4226	0.1996	0.1996	0.1996	0.1996	0.0798	0.1836	0.1836	0.1836
313	-	-	-	2.1181	0.1985	-	-	-	0.1191	0.1826	-	-
314	-	-	-	-	0.1894	-	-	-	-	0.1743	-	-
315	-	-	-	-	0.1759	-	-	-	-	0.1618	-	-
316	-	-	-	-	0.1517	-	-	-	-	0.1396	-	-
317	-	-	-	-	0.1375	-	-	-	-	0.1265	-	-
318	-	-	-	-	0.1261	-	-	-	-	0.1160	-	-
319	-	-	-	-	0.1103	-	-	-	-	0.1015	-	-
320	-	-	-	-	0.0937	-	-	-	-	0.0862	-	-
321	-	-	-	-	0.0798	-	-	-	-	0.0734	-	-
322	-	-	-	-	0.0722	-	-	-	-	0.0665	-	-
323	-	-	-	-	0.0622	-	-	-	-	0.0572	-	-
324	3.5565	3.5565	3.5565	3.5407		0.1996	0.1996	0.1996	0.1989		0.1836	0.1836
325												
326												
327												
328	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
329	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
334	-	-	-	-	0.1408	-	-	-	-	0.1295	-	-
335	-	-	-	-	0.1404	-	-	-	-	0.1292	-	-
336	-	-	-	-	0.1337	-	-	-	-	0.1230	-	-
337	-	-	-	-	0.1304	-	-	-	-	0.1200	-	-
338	-	-	-	-	0.1223	-	-	-	-	0.1126	-	-
339	2.1885	2.1885	2.1885	0.8754	0.1122	0.1122	0.1122	0.1122	0.0449	0.1033	0.1033	0.1033
340	-	-	-	1.2343	0.1042	-	-	-	0.0625	0.0959	-	-
341	-	-	-	-	0.0997	-	-	-	-	0.0917	-	-
342	-	-	-	-	0.0892	-	-	-	-	0.0821	-	-
343	-	-	-	-	0.0765	-	-	-	-	0.0704	-	-
344	-	-	-	-	0.0691	-	-	-	-	0.0635	-	-
345	-	-	-	-	0.0611	-	-	-	-	0.0562	-	-
346	-	-	-	-	0.0560	-	-	-	-	0.0515	-	-
347	-	-	-	-	0.0467	-	-	-	-	0.0430	-	-
348	-	-	-	-	0.0372	-	-	-	-	0.0342	-	-
349	-	-	-	-	0.0311	-	-	-	-	0.0286	-	-
350	-	-	-	-	0.0282	-	-	-	-	0.0259	-	-
351	2.1885	2.1885	2.1885	2.1097		0.1122	0.1122	0.1122	0.1074		0.1033	0.1033
352												
353												
354												
355	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
356	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
361	-	-	-	-	0.0802	-	-	-	-	0.0738	-	-
362	-	-	-	-	0.0814	-	-	-	-	0.0749	-	-
363	-	-	-	-	0.0801	-	-	-	-	0.0737	-	-
364	-	-	-	-	0.0803	-	-	-	-	0.0739	-	-
365	-	-	-	-	0.0751	-	-	-	-	0.0690	-	-
366	1.7895	1.7895	1.7895	0.7158	0.0686	0.0686	0.0686	0.0686	0.0274	0.0631	0.0631	0.0631
367	-	-	-	1.0375	0.0661	-	-	-	0.0396	0.0608	-	-
368	-	-	-	-	0.0583	-	-	-	-	0.0537	-	-
369	-	-	-	-	0.0520	-	-	-	-	0.0478	-	-
370	-	-	-	-	0.0431	-	-	-	-	0.0396	-	-
371	-	-	-	-	0.0371	-	-	-	-	0.0341	-	-
372	-	-	-	-	0.0327	-	-	-	-	0.0300	-	-
373	-	-	-	-	0.0274	-	-	-	-	0.0252	-	-
374	-	-	-	-	0.0207	-	-	-	-	0.0190	-	-
375	-	-	-	-	0.0183	-	-	-	-	0.0168	-	-
376	-	-	-	-	0.0170	-	-	-	-	0.0156	-	-
377	-	-	-	-	0.0145	-	-	-	-	0.0134	-	-
378	1.7895	1.7895	1.7895	1.7533		0.0686	0.0686	0.0686	0.0671		0.0631	0.0631
379												
380												
381												
382	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
383	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
388	-	-	-	-	0.1554	-	-	-	-	0.1430	-	-
389	-	-	-	-	0.1577	-	-	-	-	0.1451	-	-
390	-	-	-	-	0.1498	-	-	-	-	0.1378	-	-
391	-	-	-	-	0.1507	-	-	-	-	0.1386	-	-
392	-	-	-	-	0.1458	-	-	-	-	0.1341	-	-
393	2.6469	2.6469	2.6469	1.0587	0.1384	0.1384	0.1384	0.1384	0.0554	0.1273	0.1273	0.1273
394	-	-	-	1.5529	0.1356	-	-	-	0.0814	0.1247	-	-
395	-	-	-	-	0.1271	-	-	-	-	0.1169	-	-
396	-	-	-	-	0.1206	-	-	-	-	0.1109	-	-

	N	O	P	Q	R	S	T	U	V	W	X	Y
397	-	-	-	-	0.1039	-	-	-	-	0.0956	-	-
398	-	-	-	-	0.0970	-	-	-	-	0.0892	-	-
399	-	-	-	-	0.0901	-	-	-	-	0.0829	-	-
400	-	-	-	-	0.0747	-	-	-	-	0.0687	-	-
401	-	-	-	-	0.0649	-	-	-	-	0.0597	-	-
402	-	-	-	-	0.0583	-	-	-	-	0.0537	-	-
403	-	-	-	-	0.0540	-	-	-	-	0.0497	-	-
404	-	-	-	-	0.0466	-	-	-	-	0.0428	-	-
405	2.6469	2.6469	2.6469	2.6116		0.1384	0.1384	0.1384	0.1367		0.1273	0.1273
406												
407												
408												
409	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
410	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
415	-	-	-	-	0.2074	-	-	-	-	0.1908	-	-
416	-	-	-	-	0.2088	-	-	-	-	0.1921	-	-
417	-	-	-	-	0.2080	-	-	-	-	0.1914	-	-
418	-	-	-	-	0.2091	-	-	-	-	0.1924	-	-
419	-	-	-	-	0.2039	-	-	-	-	0.1876	-	-
420	2.2972	2.2972	2.2972	0.9189	0.1961	0.1961	0.1961	0.1961	0.0784	0.1804	0.1804	0.1804
421	-	-	-	1.3330	0.1889	-	-	-	0.1133	0.1738	-	-
422	-	-	-	-	0.1769	-	-	-	-	0.1628	-	-
423	-	-	-	-	0.1608	-	-	-	-	0.1479	-	-
424	-	-	-	-	0.1338	-	-	-	-	0.1231	-	-
425	-	-	-	-	0.1172	-	-	-	-	0.1078	-	-
426	-	-	-	-	0.1011	-	-	-	-	0.0930	-	-
427	-	-	-	-	0.0874	-	-	-	-	0.0804	-	-
428	-	-	-	-	0.0680	-	-	-	-	0.0626	-	-
429	-	-	-	-	0.0576	-	-	-	-	0.0530	-	-
430	-	-	-	-	0.0499	-	-	-	-	0.0459	-	-
431	-	-	-	-	0.0403	-	-	-	-	0.0371	-	-
432	2.2972	2.2972	2.2972	2.2518		0.1961	0.1961	0.1961	0.1918		0.1804	0.1804
433												
434												
435												
436	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
437	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
442	-	-	-	-	0.1428	-	-	-	-	0.1314	-	-
443	-	-	-	-	0.1441	-	-	-	-	0.1325	-	-
444	-	-	-	-	0.1423	-	-	-	-	0.1309	-	-
445	-	-	-	-	0.1409	-	-	-	-	0.1297	-	-
446	-	-	-	-	0.1316	-	-	-	-	0.1210	-	-
447	2.2918	2.2918	2.2918	0.9167	0.1236	0.1236	0.1236	0.1236	0.0495	0.1137	0.1137	0.1137
448	-	-	-	1.3388	0.1210	-	-	-	0.0726	0.1113	-	-
449	-	-	-	-	0.1105	-	-	-	-	0.1016	-	-
450	-	-	-	-	0.0940	-	-	-	-	0.0865	-	-
451	-	-	-	-	0.0682	-	-	-	-	0.0627	-	-
452	-	-	-	-	0.0549	-	-	-	-	0.0505	-	-
453	-	-	-	-	0.0467	-	-	-	-	0.0429	-	-
454	-	-	-	-	0.0450	-	-	-	-	0.0414	-	-
455	-	-	-	-	0.0406	-	-	-	-	0.0374	-	-
456	-	-	-	-	0.0379	-	-	-	-	0.0349	-	-
457	-	-	-	-	0.0348	-	-	-	-	0.0320	-	-
458	-	-	-	-	0.0286	-	-	-	-	0.0263	-	-
459	2.2918	2.2918	2.2918	2.2555		0.1236	0.1236	0.1236	0.1220		0.1137	0.1137
460												
461												
462											Weighted	Weighted
463	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
468	-	-	-	-	0.1379	-	-	-	-	0.1269	-	-
469	-	-	-	-	0.1400	-	-	-	-	0.1288	-	-
470	-	-	-	-	0.1360	-	-	-	-	0.1251	-	-
471	-	-	-	-	0.1368	-	-	-	-	0.1259	-	-
472	-	-	-	-	0.1262	-	-	-	-	0.1161	-	-
473	2.3829	2.3829	2.3829	0.9531	0.1192	0.1192	0.1192	0.1192	0.0477	0.1096	0.1096	0.1096
474	-	-	-	1.3800	0.1152	-	-	-	0.0691	0.1060	-	-
475	-	-	-	-	0.1006	-	-	-	-	0.0926	-	-
476	-	-	-	-	0.0890	-	-	-	-	0.0819	-	-
477	-	-	-	-	0.0761	-	-	-	-	0.0700	-	-
478	-	-	-	-	0.0660	-	-	-	-	0.0607	-	-
479	-	-	-	-	0.0589	-	-	-	-	0.0542	-	-
480	-	-	-	-	0.0541	-	-	-	-	0.0498	-	-
481	-	-	-	-	0.0430	-	-	-	-	0.0396	-	-
482	-	-	-	-	0.0382	-	-	-	-	0.0351	-	-
483	-	-	-	-	0.0351	-	-	-	-	0.0323	-	-
484	-	-	-	-	0.0320	-	-	-	-	0.0294	-	-
485	2.3829	2.3829	2.3829	2.3331		0.1192	0.1192	0.1192	0.1168		0.1096	0.1096
486												
487												
488												
489	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
490	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
495	-	-	-	-	0.1025	-	-	-	-	0.0943	-	-
496	-	-	-	-	0.1046	-	-	-	-	0.0963	-	-
497	-	-	-	-	0.1030	-	-	-	-	0.0948	-	-
498	-	-	-	-	0.1031	-	-	-	-	0.0948	-	-

	N	O	P	Q	R	S	T	U	V	W	X	Y
499	-	-	-	-	0.0962	-	-	-	-	0.0885	-	-
500	1.8521	1.8521	1.8521	0.7408	0.0884	0.0884	0.0884	0.0884	0.0353	0.0813	0.0813	0.0813
501	-	-	-	1.0580	0.0860	-	-	-	0.0516	0.0792	-	-
502	-	-	-	-	0.0762	-	-	-	-	0.0701	-	-
503	-	-	-	-	0.0691	-	-	-	-	0.0636	-	-
504	-	-	-	-	0.0551	-	-	-	-	0.0507	-	-
505	-	-	-	-	0.0474	-	-	-	-	0.0436	-	-
506	-	-	-	-	0.0454	-	-	-	-	0.0417	-	-
507	-	-	-	-	0.0406	-	-	-	-	0.0373	-	-
508	-	-	-	-	0.0359	-	-	-	-	0.0330	-	-
509	-	-	-	-	0.0330	-	-	-	-	0.0304	-	-
510	-	-	-	-	0.0306	-	-	-	-	0.0282	-	-
511	-	-	-	-	0.0265	-	-	-	-	0.0244	-	-
512	1.8521	1.8521	1.8521	1.7988		0.0884	0.0884	0.0884	0.0870		0.0813	0.0813
513												
514												
515												
516	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
517	Grubbing/I	Grading	Drainage	Paving	PM10	Grubbing/Land Cl(	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
522	-	-	-	-	0.1005	-	-	-	-	0.0925	-	-
523	-	-	-	-	0.0855	-	-	-	-	0.0787	-	-
524	-	-	-	-	0.0740	-	-	-	-	0.0681	-	-
525	-	-	-	-	0.0711	-	-	-	-	0.0654	-	-
526	-	-	-	-	0.0698	-	-	-	-	0.0642	-	-
527	1.7814	1.7814	1.7814	0.7126	0.0694	0.0694	0.0694	0.0694	0.0278	0.0639	0.0639	0.0639
528	-	-	-	1.0688	0.0694	-	-	-	0.0416	0.0638	-	-
529	-	-	-	-	0.0695	-	-	-	-	0.0640	-	-
530	-	-	-	-	0.0696	-	-	-	-	0.0640	-	-
531	-	-	-	-	0.0696	-	-	-	-	0.0640	-	-
532	-	-	-	-	0.0696	-	-	-	-	0.0640	-	-
533	-	-	-	-	0.0696	-	-	-	-	0.0640	-	-
534	-	-	-	-	0.0696	-	-	-	-	0.0640	-	-
535	-	-	-	-	0.0696	-	-	-	-	0.0640	-	-
536	-	-	-	-	0.0696	-	-	-	-	0.0640	-	-
537	-	-	-	-	0.0696	-	-	-	-	0.0640	-	-
538	-	-	-	-	0.0696	-	-	-	-	0.0640	-	-
539	1.7814	1.7814	1.7814	1.7814		0.0694	0.0694	0.0694	0.0694		0.0639	0.0639
540												
541												
542												
543	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
544	Grubbing/I	Grading	Drainage	Paving	PM10	Grubbing/Land Cl(	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
549	-	-	-	-	0.1418	-	-	-	-	0.1304	-	-
550	-	-	-	-	0.1350	-	-	-	-	0.1242	-	-
551	-	-	-	-	0.1279	-	-	-	-	0.1176	-	-
552	-	-	-	-	0.1201	-	-	-	-	0.1105	-	-
553	-	-	-	-	0.1097	-	-	-	-	0.1010	-	-
554	1.4604	1.4604	1.4604	0.5842	0.0995	0.0995	0.0995	0.0995	0.0398	0.0916	0.0916	0.0916
555	-	-	-	0.8428	0.0899	-	-	-	0.0539	0.0827	-	-
556	-	-	-	-	0.0833	-	-	-	-	0.0767	-	-
557	-	-	-	-	0.0766	-	-	-	-	0.0705	-	-
558	-	-	-	-	0.0697	-	-	-	-	0.0641	-	-
559	-	-	-	-	0.0626	-	-	-	-	0.0576	-	-
560	-	-	-	-	0.0561	-	-	-	-	0.0516	-	-
561	-	-	-	-	0.0431	-	-	-	-	0.0396	-	-
562	-	-	-	-	0.0375	-	-	-	-	0.0345	-	-
563	-	-	-	-	0.0324	-	-	-	-	0.0298	-	-
564	-	-	-	-	0.0283	-	-	-	-	0.0260	-	-
565	-	-	-	-	0.0246	-	-	-	-	0.0226	-	-
566	1.4604	1.4604	1.4604	1.4270		0.0995	0.0995	0.0995	0.0937		0.0916	0.0916
567												
568												
569												
570	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
571	Grubbing/I	Grading	Drainage	Paving	PM10	Grubbing/Land Cl(	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
576	-	-	-	-	0.4106	-	-	-	-	0.3778	-	-
577	-	-	-	-	0.3949	-	-	-	-	0.3633	-	-
578	-	-	-	-	0.3784	-	-	-	-	0.3481	-	-
579	-	-	-	-	0.3542	-	-	-	-	0.3259	-	-
580	-	-	-	-	0.3266	-	-	-	-	0.3005	-	-
581	3.8588	3.8588	3.8588	1.5435	0.2978	0.2978	0.2978	0.2978	0.1191	0.2740	0.2740	0.2740
582	-	-	-	2.1468	0.2688	-	-	-	0.1613	0.2473	-	-
583	-	-	-	-	0.2481	-	-	-	-	0.2283	-	-
584	-	-	-	-	0.2266	-	-	-	-	0.2085	-	-
585	-	-	-	-	0.2043	-	-	-	-	0.1880	-	-
586	-	-	-	-	0.1816	-	-	-	-	0.1670	-	-
587	-	-	-	-	0.1625	-	-	-	-	0.1495	-	-
588	-	-	-	-	0.1259	-	-	-	-	0.1159	-	-
589	-	-	-	-	0.1114	-	-	-	-	0.1025	-	-
590	-	-	-	-	0.0980	-	-	-	-	0.0902	-	-
591	-	-	-	-	0.0858	-	-	-	-	0.0789	-	-
592	-	-	-	-	0.0741	-	-	-	-	0.0682	-	-
593	3.8588	3.8588	3.8588	3.6903		0.2978	0.2978	0.2978	0.2804		0.2740	0.2740
594												
595												
596												

	N	O	P	Q	R	S	T	U	V	W	X	Y
597	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
598	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
603	-	-	-	-	0.2097	-	-	-	-	0.1929	-	-
604	-	-	-	-	0.2102	-	-	-	-	0.1934	-	-
605	-	-	-	-	0.2001	-	-	-	-	0.1841	-	-
606	-	-	-	-	0.2003	-	-	-	-	0.1842	-	-
607	-	-	-	-	0.1891	-	-	-	-	0.1739	-	-
608	2.3977	2.3977	2.3977	0.9591	0.1785	0.1785	0.1785	0.1785	0.0714	0.1643	0.1643	0.1643
609	-	-	-	1.4119	0.1754	-	-	-	0.1052	0.1613	-	-
610	-	-	-	-	0.1604	-	-	-	-	0.1476	-	-
611	-	-	-	-	0.1471	-	-	-	-	0.1353	-	-
612	-	-	-	-	0.1201	-	-	-	-	0.1105	-	-
613	-	-	-	-	0.1031	-	-	-	-	0.0948	-	-
614	-	-	-	-	0.0928	-	-	-	-	0.0854	-	-
615	-	-	-	-	0.0823	-	-	-	-	0.0757	-	-
616	-	-	-	-	0.0696	-	-	-	-	0.0640	-	-
617	-	-	-	-	0.0620	-	-	-	-	0.0570	-	-
618	-	-	-	-	0.0565	-	-	-	-	0.0519	-	-
619	-	-	-	-	0.0508	-	-	-	-	0.0467	-	-
620	2.3977	2.3977	2.3977	2.3709		0.1785	0.1785	0.1785	0.1766		0.1643	0.1643
621												
622												
623												
624												
625	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
626	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
631	-	-	-	-	0.1600	-	-	-	-	0.1472	-	-
632	-	-	-	-	0.1550	-	-	-	-	0.1426	-	-
633	-	-	-	-	0.1415	-	-	-	-	0.1302	-	-
634	-	-	-	-	0.1365	-	-	-	-	0.1256	-	-
635	-	-	-	-	0.1201	-	-	-	-	0.1105	-	-
636	1.7958	1.7958	1.7958	0.7183	0.1049	0.1049	0.1049	0.1049	0.0420	0.0965	0.0965	0.0965
637	-	-	-	1.0323	0.0995	-	-	-	0.0597	0.0915	-	-
638	-	-	-	-	0.0857	-	-	-	-	0.0788	-	-
639	-	-	-	-	0.0730	-	-	-	-	0.0672	-	-
640	-	-	-	-	0.0547	-	-	-	-	0.0503	-	-
641	-	-	-	-	0.0470	-	-	-	-	0.0432	-	-
642	-	-	-	-	0.0412	-	-	-	-	0.0379	-	-
643	-	-	-	-	0.0356	-	-	-	-	0.0327	-	-
644	-	-	-	-	0.0294	-	-	-	-	0.0271	-	-
645	-	-	-	-	0.0256	-	-	-	-	0.0236	-	-
646	-	-	-	-	0.0234	-	-	-	-	0.0216	-	-
647	-	-	-	-	0.0206	-	-	-	-	0.0189	-	-
648	1.7958	1.7958	1.7958	1.7507		0.1049	0.1049	0.1049	0.1016		0.0965	0.0965
649												
650												
651												
652												
653	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
654	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
659	-	-	-	-	0.1632	-	-	-	-	0.1501	-	-
660	-	-	-	-	0.1606	-	-	-	-	0.1478	-	-
661	-	-	-	-	0.1588	-	-	-	-	0.1461	-	-
662	-	-	-	-	0.1587	-	-	-	-	0.1460	-	-
663	-	-	-	-	0.1541	-	-	-	-	0.1418	-	-
664	3.1854	3.1854	3.1854	1.2742	0.1485	0.1485	0.1485	0.1485	0.0594	0.1366	0.1366	0.1366
665	-	-	-	1.8968	0.1475	-	-	-	0.0885	0.1357	-	-
666	-	-	-	-	0.1418	-	-	-	-	0.1305	-	-
667	-	-	-	-	0.1347	-	-	-	-	0.1239	-	-
668	-	-	-	-	0.1187	-	-	-	-	0.1092	-	-
669	-	-	-	-	0.1118	-	-	-	-	0.1029	-	-
670	-	-	-	-	0.1024	-	-	-	-	0.0942	-	-
671	-	-	-	-	0.0917	-	-	-	-	0.0844	-	-
672	-	-	-	-	0.0869	-	-	-	-	0.0800	-	-
673	-	-	-	-	0.0797	-	-	-	-	0.0733	-	-
674	-	-	-	-	0.0721	-	-	-	-	0.0663	-	-
675	-	-	-	-	0.0595	-	-	-	-	0.0548	-	-
676	3.1854	3.1854	3.1854	3.1710		0.1485	0.1485	0.1485	0.1479		0.1366	0.1366
677												
678												
679												
680												
681	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
682	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
687	-	-	-	-	0.0708	-	-	-	-	0.0651	-	-
688	-	-	-	-	0.0719	-	-	-	-	0.0661	-	-
689	-	-	-	-	0.0713	-	-	-	-	0.0656	-	-
690	-	-	-	-	0.0716	-	-	-	-	0.0659	-	-
691	-	-	-	-	0.0710	-	-	-	-	0.0653	-	-
692	1.9882	1.9882	1.9882	0.7953	0.0676	0.0676	0.0676	0.0676	0.0270	0.0622	0.0622	0.0622
693	-	-	-	1.1656	0.0663	-	-	-	0.0398	0.0610	-	-
694	-	-	-	-	0.0631	-	-	-	-	0.0581	-	-
695	-	-	-	-	0.0586	-	-	-	-	0.0539	-	-
696	-	-	-	-	0.0507	-	-	-	-	0.0466	-	-
697	-	-	-	-	0.0454	-	-	-	-	0.0418	-	-
698	-	-	-	-	0.0411	-	-	-	-	0.0378	-	-

	N	O	P	Q	R	S	T	U	V	W	X	Y
699	-	-	-	-	0.0362	-	-	-	-	0.0333	-	-
700	-	-	-	-	0.0285	-	-	-	-	0.0262	-	-
701	-	-	-	-	0.0250	-	-	-	-	0.0230	-	-
702	-	-	-	-	0.0219	-	-	-	-	0.0201	-	-
703	-	-	-	-	0.0175	-	-	-	-	0.0161	-	-
704	1.9882	1.9882	1.9882	1.9609		0.0676	0.0676	0.0676	0.0668		0.0622	0.0622
705												
706												
707												
708												
709	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
710	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
715	-	-	-	-	0.1303	-	-	-	-	0.1198	-	-
716	-	-	-	-	0.1312	-	-	-	-	0.1207	-	-
717	-	-	-	-	0.1292	-	-	-	-	0.1189	-	-
718	-	-	-	-	0.1296	-	-	-	-	0.1192	-	-
719	-	-	-	-	0.1271	-	-	-	-	0.1170	-	-
720	3.0068	3.0068	3.0068	1.2027	0.1213	0.1213	0.1213	0.1213	0.0485	0.1116	0.1116	0.1116
721	-	-	-	1.7615	0.1186	-	-	-	0.0711	0.1091	-	-
722	-	-	-	-	0.1119	-	-	-	-	0.1030	-	-
723	-	-	-	-	0.1034	-	-	-	-	0.0951	-	-
724	-	-	-	-	0.0868	-	-	-	-	0.0799	-	-
725	-	-	-	-	0.0786	-	-	-	-	0.0723	-	-
726	-	-	-	-	0.0712	-	-	-	-	0.0655	-	-
727	-	-	-	-	0.0646	-	-	-	-	0.0595	-	-
728	-	-	-	-	0.0542	-	-	-	-	0.0499	-	-
729	-	-	-	-	0.0504	-	-	-	-	0.0464	-	-
730	-	-	-	-	0.0472	-	-	-	-	0.0434	-	-
731	-	-	-	-	0.0389	-	-	-	-	0.0358	-	-
732	3.0068	3.0068	3.0068	2.9642		0.1213	0.1213	0.1213	0.1197		0.1116	0.1116
733												
734												
735												
736												
737	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
738	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
743	-	-	-	-	0.4661	-	-	-	-	0.4288	-	-
744	-	-	-	-	0.4457	-	-	-	-	0.4101	-	-
745	-	-	-	-	0.4225	-	-	-	-	0.3887	-	-
746	-	-	-	-	0.3969	-	-	-	-	0.3651	-	-
747	-	-	-	-	0.3631	-	-	-	-	0.3341	-	-
748	4.0101	4.0101	4.0101	1.6041	0.3300	0.3300	0.3300	0.3300	0.1320	0.3036	0.3036	0.3036
749	-	-	-	2.3142	0.2987	-	-	-	0.1792	0.2748	-	-
750	-	-	-	-	0.2686	-	-	-	-	0.2471	-	-
751	-	-	-	-	0.2393	-	-	-	-	0.2201	-	-
752	-	-	-	-	0.2111	-	-	-	-	0.1942	-	-
753	-	-	-	-	0.1843	-	-	-	-	0.1695	-	-
754	-	-	-	-	0.1607	-	-	-	-	0.1479	-	-
755	-	-	-	-	0.1398	-	-	-	-	0.1286	-	-
756	-	-	-	-	0.1206	-	-	-	-	0.1110	-	-
757	-	-	-	-	0.1033	-	-	-	-	0.0950	-	-
758	-	-	-	-	0.0893	-	-	-	-	0.0821	-	-
759	-	-	-	-	0.0769	-	-	-	-	0.0707	-	-
760	4.0101	4.0101	4.0101	3.9182		0.3300	0.3300	0.3300	0.3112		0.3036	0.3036
761												
762												
763												
764												
765	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
766	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
771	-	-	-	-	0.1323	-	-	-	-	0.1218	-	-
772	-	-	-	-	0.1268	-	-	-	-	0.1167	-	-
773	-	-	-	-	0.1166	-	-	-	-	0.1072	-	-
774	-	-	-	-	0.1117	-	-	-	-	0.1028	-	-
775	-	-	-	-	0.0999	-	-	-	-	0.0919	-	-
776	1.4789	1.4789	1.4789	0.5916	0.0864	0.0864	0.0864	0.0864	0.0346	0.0795	0.0795	0.0795
777	-	-	-	0.8425	0.0811	-	-	-	0.0487	0.0747	-	-
778	-	-	-	-	0.0727	-	-	-	-	0.0669	-	-
779	-	-	-	-	0.0651	-	-	-	-	0.0599	-	-
780	-	-	-	-	0.0515	-	-	-	-	0.0474	-	-
781	-	-	-	-	0.0448	-	-	-	-	0.0413	-	-
782	-	-	-	-	0.0400	-	-	-	-	0.0368	-	-
783	-	-	-	-	0.0355	-	-	-	-	0.0326	-	-
784	-	-	-	-	0.0300	-	-	-	-	0.0276	-	-
785	-	-	-	-	0.0254	-	-	-	-	0.0234	-	-
786	-	-	-	-	0.0231	-	-	-	-	0.0212	-	-
787	-	-	-	-	0.0209	-	-	-	-	0.0192	-	-
788	1.4789	1.4789	1.4789	1.4341		0.0864	0.0864	0.0864	0.0833		0.0795	0.0795
789												
790												
791												
792												
793	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
794	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
799	-	-	-	-	0.0446	-	-	-	-	0.0410	-	-
800	-	-	-	-	0.0435	-	-	-	-	0.0400	-	-

	N	O	P	Q	R	S	T	U	V	W	X	Y
801	-	-	-	-	0.0410	-	-	-	-	0.0377	-	-
802	-	-	-	-	0.0405	-	-	-	-	0.0373	-	-
803	-	-	-	-	0.0396	-	-	-	-	0.0364	-	-
804	1.1744	1.1744	1.1744	0.4698	0.0378	0.0378	0.0378	0.0378	0.0151	0.0348	0.0348	0.0348
805	-	-	-	0.7056	0.0381	-	-	-	0.0229	0.0351	-	-
806	-	-	-	-	0.0335	-	-	-	-	0.0308	-	-
807	-	-	-	-	0.0309	-	-	-	-	0.0285	-	-
808	-	-	-	-	0.0229	-	-	-	-	0.0211	-	-
809	-	-	-	-	0.0205	-	-	-	-	0.0189	-	-
810	-	-	-	-	0.0202	-	-	-	-	0.0185	-	-
811	-	-	-	-	0.0191	-	-	-	-	0.0176	-	-
812	-	-	-	-	0.0173	-	-	-	-	0.0159	-	-
813	-	-	-	-	0.0168	-	-	-	-	0.0154	-	-
814	-	-	-	-	0.0169	-	-	-	-	0.0155	-	-
815	-	-	-	-	0.0154	-	-	-	-	0.0141	-	-
816	1.1744	1.1744	1.1744	1.1753		0.0378	0.0378	0.0378	0.0380		0.0348	0.0348
817												
818												
819												
820												
821	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
822	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
827	-	-	-	-	0.2929	-	-	-	-	0.2695	-	-
828	-	-	-	-	0.2993	-	-	-	-	0.2754	-	-
829	-	-	-	-	0.2967	-	-	-	-	0.2730	-	-
830	-	-	-	-	0.3000	-	-	-	-	0.2760	-	-
831	-	-	-	-	0.2851	-	-	-	-	0.2623	-	-
832	3.1591	3.1591	3.1591	1.2636	0.2781	0.2781	0.2781	0.2781	0.1112	0.2558	0.2558	0.2558
833	-	-	-	1.8824	0.2780	-	-	-	0.1668	0.2558	-	-
834	-	-	-	-	0.2600	-	-	-	-	0.2392	-	-
835	-	-	-	-	0.2370	-	-	-	-	0.2181	-	-
836	-	-	-	-	0.1951	-	-	-	-	0.1795	-	-
837	-	-	-	-	0.1764	-	-	-	-	0.1623	-	-
838	-	-	-	-	0.1640	-	-	-	-	0.1509	-	-
839	-	-	-	-	0.1328	-	-	-	-	0.1221	-	-
840	-	-	-	-	0.1057	-	-	-	-	0.0973	-	-
841	-	-	-	-	0.0955	-	-	-	-	0.0878	-	-
842	-	-	-	-	0.0859	-	-	-	-	0.0790	-	-
843	-	-	-	-	0.0728	-	-	-	-	0.0669	-	-
844	3.1591	3.1591	3.1591	3.1461		0.2781	0.2781	0.2781	0.2781		0.2558	0.2558
845												
846												
847												
848												
849	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
850	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
855	-	-	-	-	0.0775	-	-	-	-	0.0713	-	-
856	-	-	-	-	0.0651	-	-	-	-	0.0599	-	-
857	-	-	-	-	0.0525	-	-	-	-	0.0483	-	-
858	-	-	-	-	0.0441	-	-	-	-	0.0406	-	-
859	-	-	-	-	0.0387	-	-	-	-	0.0356	-	-
860	0.7772	0.7772	0.7772	0.3109	0.0315	0.0315	0.0315	0.0315	0.0126	0.0290	0.0290	0.0290
861	-	-	-	1.1988	0.1564	-	-	-	0.0938	0.1439	-	-
862	-	-	-	-	0.1459	-	-	-	-	0.1342	-	-
863	-	-	-	-	0.1333	-	-	-	-	0.1226	-	-
864	-	-	-	-	0.1085	-	-	-	-	0.0998	-	-
865	-	-	-	-	0.0908	-	-	-	-	0.0836	-	-
866	-	-	-	-	0.0775	-	-	-	-	0.0713	-	-
867	-	-	-	-	0.0651	-	-	-	-	0.0599	-	-
868	-	-	-	-	0.0525	-	-	-	-	0.0483	-	-
869	-	-	-	-	0.0441	-	-	-	-	0.0406	-	-
870	-	-	-	-	0.0387	-	-	-	-	0.0356	-	-
871	-	-	-	-	0.0315	-	-	-	-	0.0290	-	-
872	0.7772	0.7772	0.7772	1.5097		0.0315	0.0315	0.0315	0.1064		0.0290	0.0290
873												
874												
875												
876												
877	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
878	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
883	-	-	-	-	0.3128	-	-	-	-	0.2877	-	-
884	-	-	-	-	0.3117	-	-	-	-	0.2868	-	-
885	-	-	-	-	0.3004	-	-	-	-	0.2763	-	-
886	-	-	-	-	0.3034	-	-	-	-	0.2792	-	-
887	-	-	-	-	0.2926	-	-	-	-	0.2692	-	-
888	3.6266	3.6266	3.6266	1.4507	0.2829	0.2829	0.2829	0.2829	0.1131	0.2602	0.2602	0.2602
889	-	-	-	2.1643	0.2822	-	-	-	0.1693	0.2596	-	-
890	-	-	-	-	0.2720	-	-	-	-	0.2503	-	-
891	-	-	-	-	0.2629	-	-	-	-	0.2419	-	-
892	-	-	-	-	0.2261	-	-	-	-	0.2080	-	-
893	-	-	-	-	0.2164	-	-	-	-	0.1991	-	-
894	-	-	-	-	0.2077	-	-	-	-	0.1910	-	-
895	-	-	-	-	0.1863	-	-	-	-	0.1714	-	-
896	-	-	-	-	0.1749	-	-	-	-	0.1609	-	-
897	-	-	-	-	0.1639	-	-	-	-	0.1508	-	-
898	-	-	-	-	0.1597	-	-	-	-	0.1469	-	-

	N	O	P	Q	R	S	T	U	V	W	X	Y
899	-	-	-	-	0.1432	-	-	-	-	0.1318	-	-
900	3.6266	3.6266	3.6266	3.6150		0.2829	0.2829	0.2829	0.2825		0.2602	0.2602
901												
902												
903												
904												
905	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted
906	Grubbing/l	Grading	Drainage	Paving	PM10	Grubbing/Land Cl	Grading	Drainage	Paving	PM2.5	Grubbing/Land Clearing	Grading
911	-	-	-	-	0.2892	-	-	-	-	0.2661	-	-
912	-	-	-	-	0.2780	-	-	-	-	0.2557	-	-
913	-	-	-	-	0.2654	-	-	-	-	0.2442	-	-
914	-	-	-	-	0.2508	-	-	-	-	0.2308	-	-
915	-	-	-	-	0.2316	-	-	-	-	0.2130	-	-
916	2.3858	2.3858	2.3858	0.9543	0.2121	0.2121	0.2121	0.2121	0.0848	0.1951	0.1951	0.1951
917	-	-	-	1.3796	0.1933	-	-	-	0.1160	0.1778	-	-
918	-	-	-	-	0.1808	-	-	-	-	0.1664	-	-
919	-	-	-	-	0.1676	-	-	-	-	0.1542	-	-
920	-	-	-	-	0.1536	-	-	-	-	0.1413	-	-
921	-	-	-	-	0.1387	-	-	-	-	0.1276	-	-
922	-	-	-	-	0.1249	-	-	-	-	0.1149	-	-
923	-	-	-	-	0.0961	-	-	-	-	0.0885	-	-
924	-	-	-	-	0.0839	-	-	-	-	0.0772	-	-
925	-	-	-	-	0.0727	-	-	-	-	0.0669	-	-
926	-	-	-	-	0.0636	-	-	-	-	0.0585	-	-
927	-	-	-	-	0.0553	-	-	-	-	0.0509	-	-
928	2.3858	2.3858	2.3858	2.3339		0.2121	0.2121	0.2121	0.2008		0.1951	0.1951
929												

	Z	AA	AB	AC	AD	AE
1						
2						
3	PM10 (from CEIDARS)					
4						
5	PM2.5	PM2.5		CO2	CO2	CO2
6	Weighted	Weighted		Weighted	Weighted	Weighted
7	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
12	-	-	161.1988	-	-	-
13	-	-	161.1993	-	-	-
14	-	-	161.1993	-	-	-
15	-	-	161.1993	-	-	-
16	-	-	161.1993	-	-	-
17	0.0456	0.0182	161.1993	161.1993	161.1993	161.1993
18	-	0.0243	161.1993	-	-	-
19	-	-	161.1993	-	-	-
20	-	-	161.1993	-	-	-
21	-	-	161.1993	-	-	-
22	-	-	161.1993	-	-	-
23	-	-	161.1993	-	-	-
24	-	-	161.1993	-	-	-
25	-	-	161.1993	-	-	-
26	-	-	161.1993	-	-	-
27	-	-	161.1993	-	-	-
28	-	-	161.1993	-	-	-
29	0.0456	0.0426		161.1993	161.1993	161.1993
30						
31	Weighted	Weighted		Weighted	Weighted	Weighted
32	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
37	-	-	272.7839	-	-	-
38	-	-	272.7839	-	-	-
39	-	-	272.7840	-	-	-
40	-	-	272.7838	-	-	-
41	-	-	272.7839	-	-	-
42	0.2180	0.0872	272.7838	272.7838	272.7838	272.7838
43	-	0.1181	272.7840	-	-	-
44	-	-	272.7839	-	-	-
45	-	-	272.7839	-	-	-
46	-	-	272.7839	-	-	-
47	-	-	272.7839	-	-	-
48	-	-	272.7839	-	-	-
49	-	-	272.7839	-	-	-
50	-	-	272.7840	-	-	-
51	-	-	272.7839	-	-	-
52	-	-	272.7839	-	-	-
53	-	-	272.7839	-	-	-
54	0.2180	0.2053		272.7838	272.7838	272.7838
55						
56	Weighted	Weighted		Weighted	Weighted	Weighted
57	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
62	-	-	263.7549	-	-	-
63	-	-	263.1223	-	-	-
64	-	-	262.3750	-	-	-
65	-	-	262.3282	-	-	-
66	-	-	262.0642	-	-	-
67	0.0485	0.0194	260.6038	260.6038	260.6038	260.6038
68	-	0.0276	260.2800	-	-	-
69	-	-	260.7048	-	-	-
70	-	-	260.6074	-	-	-
71	-	-	259.6560	-	-	-
72	-	-	259.1129	-	-	-
73	-	-	259.8855	-	-	-
74	-	-	260.5298	-	-	-
75	-	-	260.9579	-	-	-
76	-	-	261.4841	-	-	-
77	-	-	262.0440	-	-	-
78	-	-	262.0117	-	-	-
79	0.0485	0.0470		260.6038	260.6038	260.6038
80						
81						
82						
83	Weighted	Weighted		Weighted	Weighted	Weighted
84	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
89	-	-	318.2478	-	-	-
90	-	-	318.2480	-	-	-
91	-	-	318.2477	-	-	-
92	-	-	318.2478	-	-	-
93	-	-	318.2480	-	-	-
94	0.0912	0.0365	318.2480	318.2480	318.2480	318.2480
95	-	0.0530	318.2478	-	-	-
96	-	-	318.2479	-	-	-
97	-	-	318.2479	-	-	-
98	-	-	318.2480	-	-	-
99	-	-	318.2479	-	-	-
100	-	-	318.2479	-	-	-
101	-	-	318.2477	-	-	-
102	-	-	318.2478	-	-	-

	Z	AA	AB	AC	AD	AE
103	-	-	318.2480	-	-	-
104	-	-	318.2479	-	-	-
105	-	-	318.2478	-	-	-
106	0.0912	0.0894		318.2480	318.2480	318.2480
107						
108						
109						
110	Weighted	Weighted		Weighted	Weighted	Weighted
111	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
116	-	-	414.8589	-	-	-
117	-	-	414.8588	-	-	-
118	-	-	414.8589	-	-	-
119	-	-	414.8589	-	-	-
120	-	-	414.8588	-	-	-
121	0.2774	0.1110	414.8587	414.8587	414.8587	414.8587
122	-	0.1506	414.8589	-	-	-
123	-	-	414.8590	-	-	-
124	-	-	414.8588	-	-	-
125	-	-	414.8588	-	-	-
126	-	-	414.8588	-	-	-
127	-	-	414.8589	-	-	-
128	-	-	414.8589	-	-	-
129	-	-	414.8590	-	-	-
130	-	-	414.8590	-	-	-
131	-	-	414.8589	-	-	-
132	-	-	414.8588	-	-	-
133	0.2774	0.2616		414.8587	414.8587	414.8587
134						
135						
136						
137						
138	Weighted	Weighted		Weighted	Weighted	Weighted
139	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
144	-	-	150.9938	-	-	-
145	-	-	150.9955	-	-	-
146	-	-	150.9977	-	-	-
147	-	-	150.9841	-	-	-
148	-	-	150.9819	-	-	-
149	0.0955	0.0382	150.9722	150.9722	150.9722	150.9722
150	-	0.0553	150.9784	-	-	-
151	-	-	150.9672	-	-	-
152	-	-	150.9975	-	-	-
153	-	-	150.9728	-	-	-
154	-	-	150.9535	-	-	-
155	-	-	150.9526	-	-	-
156	-	-	150.9389	-	-	-
157	-	-	150.9636	-	-	-
158	-	-	150.9606	-	-	-
159	-	-	150.9574	-	-	-
160	-	-	150.9625	-	-	-
161	0.0955	0.0935		150.9722	150.9722	150.9722
162						
163						
164						
165						
166	Weighted	Weighted		Weighted	Weighted	Weighted
167	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
172	-	-	224.9692	-	-	-
173	-	-	224.9492	-	-	-
174	-	-	224.9773	-	-	-
175	-	-	224.9562	-	-	-
176	-	-	224.8810	-	-	-
177	0.0951	0.0380	224.8561	224.8561	224.8561	224.8561
178	-	0.0561	224.9088	-	-	-
179	-	-	224.7840	-	-	-
180	-	-	224.9475	-	-	-
181	-	-	224.7948	-	-	-
182	-	-	224.6691	-	-	-
183	-	-	224.6700	-	-	-
184	-	-	224.6622	-	-	-
185	-	-	224.2693	-	-	-
186	-	-	224.0446	-	-	-
187	-	-	224.1566	-	-	-
188	-	-	224.0436	-	-	-
189	0.0951	0.0941		224.8561	224.8561	224.8561
190						
191						
192						

	Z	AA	AB	AC	AD	AE
193	Weighted	Weighted		Weighted	Weighted	Weighted
194	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
199	-	-	443.2739	-	-	-
200	-	-	443.2739	-	-	-
201	-	-	443.2739	-	-	-
202	-	-	443.2738	-	-	-
203	-	-	443.2739	-	-	-
204	0.1910	0.0764	443.2739	443.2739	443.2739	443.2739
205	-	0.1027	443.2739	-	-	-
206	-	-	443.2739	-	-	-
207	-	-	443.2739	-	-	-
208	-	-	443.2739	-	-	-
209	-	-	443.2738	-	-	-
210	-	-	443.2738	-	-	-
211	-	-	443.2739	-	-	-
212	-	-	443.2738	-	-	-
213	-	-	443.2741	-	-	-
214	-	-	443.2738	-	-	-
215	-	-	443.2738	-	-	-
216	0.1910	0.1791		443.2739	443.2739	443.2739
217						
218						
219						
220	Weighted	Weighted		Weighted	Weighted	Weighted
221	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
226	-	-	199.9666	-	-	-
227	-	-	199.9286	-	-	-
228	-	-	199.8454	-	-	-
229	-	-	199.8033	-	-	-
230	-	-	199.8124	-	-	-
231	0.0804	0.0322	199.8257	199.8257	199.8257	199.8257
232	-	0.0466	199.8367	-	-	-
233	-	-	199.8588	-	-	-
234	-	-	199.8188	-	-	-
235	-	-	199.8277	-	-	-
236	-	-	199.7793	-	-	-
237	-	-	199.8209	-	-	-
238	-	-	199.8503	-	-	-
239	-	-	199.7797	-	-	-
240	-	-	199.8158	-	-	-
241	-	-	199.8796	-	-	-
242	-	-	199.9086	-	-	-
243	0.0804	0.0788		199.8257	199.8257	199.8257
244						
245						
246						
247	Weighted	Weighted		Weighted	Weighted	Weighted
248	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
253	-	-	104.9995	-	-	-
254	-	-	104.9995	-	-	-
255	-	-	104.9995	-	-	-
256	-	-	104.9995	-	-	-
257	-	-	104.9995	-	-	-
258	0.1061	0.0424	104.9995	104.9995	104.9995	104.9995
259	-	0.0615	104.9995	-	-	-
260	-	-	104.9995	-	-	-
261	-	-	104.9995	-	-	-
262	-	-	104.9995	-	-	-
263	-	-	104.9995	-	-	-
264	-	-	104.9995	-	-	-
265	-	-	104.9995	-	-	-
266	-	-	104.9995	-	-	-
267	-	-	104.9995	-	-	-
268	-	-	104.9995	-	-	-
269	-	-	104.9995	-	-	-
270	0.1061	0.1040		104.9995	104.9995	104.9995
271						
272						
273						
274	Weighted	Weighted		Weighted	Weighted	Weighted
275	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
280	-	-	420.5418	-	-	-
281	-	-	420.5420	-	-	-
282	-	-	420.5418	-	-	-
283	-	-	420.5419	-	-	-
284	-	-	420.5421	-	-	-
285	0.2617	0.1047	420.5421	420.5421	420.5421	420.5421
286	-	0.1416	420.5419	-	-	-
287	-	-	420.5418	-	-	-
288	-	-	420.5418	-	-	-
289	-	-	420.5420	-	-	-
290	-	-	420.5419	-	-	-
291	-	-	420.5420	-	-	-
292	-	-	420.5420	-	-	-
293	-	-	420.5419	-	-	-
294	-	-	420.5417	-	-	-

	Z	AA	AB	AC	AD	AE
295	-	-	420.5420	-	-	-
296	-	-	420.5420	-	-	-
297	0.2617	0.2463		420.5421	420.5421	420.5421
298						
299						
300						
301	Weighted	Weighted		Weighted	Weighted	Weighted
302	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
307	-	-	218.7264	-	-	-
308	-	-	218.7080	-	-	-
309	-	-	218.6773	-	-	-
310	-	-	218.6500	-	-	-
311	-	-	218.5595	-	-	-
312	0.1836	0.0735	218.3692	218.3692	218.3692	218.3692
313	-	0.1096	218.2619	-	-	-
314	-	-	217.9530	-	-	-
315	-	-	217.3696	-	-	-
316	-	-	216.7726	-	-	-
317	-	-	216.6151	-	-	-
318	-	-	216.4475	-	-	-
319	-	-	216.6687	-	-	-
320	-	-	216.6857	-	-	-
321	-	-	216.6388	-	-	-
322	-	-	216.6541	-	-	-
323	-	-	216.6594	-	-	-
324	0.1836	0.1830		218.3692	218.3692	218.3692
325						
326						
327						
328	Weighted	Weighted		Weighted	Weighted	Weighted
329	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
334	-	-	228.3910	-	-	-
335	-	-	228.4230	-	-	-
336	-	-	228.3444	-	-	-
337	-	-	228.3271	-	-	-
338	-	-	228.3471	-	-	-
339	0.1033	0.0413	228.4257	228.4257	228.4257	228.4257
340	-	0.0575	228.2941	-	-	-
341	-	-	228.4197	-	-	-
342	-	-	228.1938	-	-	-
343	-	-	228.1710	-	-	-
344	-	-	228.1709	-	-	-
345	-	-	228.1689	-	-	-
346	-	-	228.1721	-	-	-
347	-	-	228.1178	-	-	-
348	-	-	228.2071	-	-	-
349	-	-	228.2557	-	-	-
350	-	-	228.3547	-	-	-
351	0.1033	0.0988		228.4257	228.4257	228.4257
352						
353						
354						
355	Weighted	Weighted		Weighted	Weighted	Weighted
356	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
361	-	-	201.3723	-	-	-
362	-	-	201.3601	-	-	-
363	-	-	201.2740	-	-	-
364	-	-	201.2744	-	-	-
365	-	-	201.3702	-	-	-
366	0.0631	0.0252	201.4303	201.4303	201.4303	201.4303
367	-	0.0365	201.4594	-	-	-
368	-	-	201.1868	-	-	-
369	-	-	200.9871	-	-	-
370	-	-	200.9816	-	-	-
371	-	-	200.8965	-	-	-
372	-	-	200.7896	-	-	-
373	-	-	200.7741	-	-	-
374	-	-	200.8467	-	-	-
375	-	-	200.9885	-	-	-
376	-	-	201.0611	-	-	-
377	-	-	200.9551	-	-	-
378	0.0631	0.0617		201.4303	201.4303	201.4303
379						
380						
381						
382	Weighted	Weighted		Weighted	Weighted	Weighted
383	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
388	-	-	216.2355	-	-	-
389	-	-	216.2551	-	-	-
390	-	-	216.1907	-	-	-
391	-	-	216.1860	-	-	-
392	-	-	216.2896	-	-	-
393	0.1273	0.0509	216.3641	216.3641	216.3641	216.3641
394	-	0.0748	216.3552	-	-	-
395	-	-	216.3040	-	-	-
396	-	-	216.2171	-	-	-

	Z	AA	AB	AC	AD	AE
397	-	-	216.1663	-	-	-
398	-	-	216.2989	-	-	-
399	-	-	216.2881	-	-	-
400	-	-	216.1871	-	-	-
401	-	-	216.1173	-	-	-
402	-	-	216.0922	-	-	-
403	-	-	216.0860	-	-	-
404	-	-	216.2234	-	-	-
405	0.1273	0.1258		216.3641	216.3641	216.3641
406						
407						
408						
409	Weighted	Weighted		Weighted	Weighted	Weighted
410	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
415	-	-	177.9205	-	-	-
416	-	-	177.9205	-	-	-
417	-	-	177.9205	-	-	-
418	-	-	177.9205	-	-	-
419	-	-	177.9205	-	-	-
420	0.1804	0.0722	177.9205	177.9205	177.9205	177.9205
421	-	0.1043	177.9205	-	-	-
422	-	-	177.9205	-	-	-
423	-	-	177.9205	-	-	-
424	-	-	177.9205	-	-	-
425	-	-	177.9205	-	-	-
426	-	-	177.9205	-	-	-
427	-	-	177.9205	-	-	-
428	-	-	177.9205	-	-	-
429	-	-	177.9205	-	-	-
430	-	-	177.9205	-	-	-
431	-	-	177.9205	-	-	-
432	0.1804	0.1764		177.9205	177.9205	177.9205
433						
434						
435						
436	Weighted	Weighted		Weighted	Weighted	Weighted
437	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
442	-	-	206.8016	-	-	-
443	-	-	206.8016	-	-	-
444	-	-	206.8016	-	-	-
445	-	-	206.8016	-	-	-
446	-	-	206.8016	-	-	-
447	0.1137	0.0455	206.8016	206.8016	206.8016	206.8016
448	-	0.0668	206.8016	-	-	-
449	-	-	206.8016	-	-	-
450	-	-	206.8016	-	-	-
451	-	-	206.8016	-	-	-
452	-	-	206.8016	-	-	-
453	-	-	206.8016	-	-	-
454	-	-	206.8016	-	-	-
455	-	-	206.8016	-	-	-
456	-	-	206.8016	-	-	-
457	-	-	206.8016	-	-	-
458	-	-	206.8016	-	-	-
459	0.1137	0.1123		206.8016	206.8016	206.8016
460						
461						
462	Weighted	Weighted		Weighted	Weighted	Weighted
463	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
468	-	-	217.5575	-	-	-
469	-	-	217.5800	-	-	-
470	-	-	217.6118	-	-	-
471	-	-	217.6366	-	-	-
472	-	-	217.4178	-	-	-
473	0.1096	0.0439	217.2863	217.2863	217.2863	217.2863
474	-	0.0636	217.3487	-	-	-
475	-	-	217.4097	-	-	-
476	-	-	217.5407	-	-	-
477	-	-	217.6441	-	-	-
478	-	-	217.6234	-	-	-
479	-	-	217.5725	-	-	-
480	-	-	217.4715	-	-	-
481	-	-	217.5657	-	-	-
482	-	-	217.5463	-	-	-
483	-	-	217.5200	-	-	-
484	-	-	217.4392	-	-	-
485	0.1096	0.1075		217.2863	217.2863	217.2863
486						
487						
488						
489	Weighted	Weighted		Weighted	Weighted	Weighted
490	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
495	-	-	185.3197	-	-	-
496	-	-	185.3194	-	-	-
497	-	-	185.3374	-	-	-
498	-	-	185.2955	-	-	-

	Z	AA	AB	AC	AD	AE
499	-	-	185.1341	-	-	-
500	0.0813	0.0325	185.1299	185.1299	185.1299	185.1299
501	-	0.0475	185.1621	-	-	-
502	-	-	185.2191	-	-	-
503	-	-	185.2843	-	-	-
504	-	-	185.2480	-	-	-
505	-	-	185.1983	-	-	-
506	-	-	185.1874	-	-	-
507	-	-	185.1534	-	-	-
508	-	-	185.1593	-	-	-
509	-	-	185.1587	-	-	-
510	-	-	185.1581	-	-	-
511	-	-	185.0884	-	-	-
512	0.0813	0.0800		185.1299	185.1299	185.1299
513						
514						
515						
516	Weighted	Weighted		Weighted	Weighted	Weighted
517	Drainage	Paving	CO2	Grubbing/Land Clearin	Grading	Drainage
522	-	-	244.3689	-	-	-
523	-	-	244.3689	-	-	-
524	-	-	244.3689	-	-	-
525	-	-	244.3690	-	-	-
526	-	-	244.3689	-	-	-
527	0.0639	0.0255	244.3690	244.3690	244.3690	244.3690
528	-	0.0383	244.3689	-	-	-
529	-	-	244.3688	-	-	-
530	-	-	244.3690	-	-	-
531	-	-	244.3689	-	-	-
532	-	-	244.3690	-	-	-
533	-	-	244.3690	-	-	-
534	-	-	244.3690	-	-	-
535	-	-	244.3691	-	-	-
536	-	-	244.3689	-	-	-
537	-	-	244.3689	-	-	-
538	-	-	244.3688	-	-	-
539	0.0639	0.0638		244.3690	244.3690	244.3690
540						
541						
542						
543	Weighted	Weighted		Weighted	Weighted	Weighted
544	Drainage	Paving	CO2	Grubbing/Land Clearin	Grading	Drainage
549	-	-	170.4900	-	-	-
550	-	-	170.4900	-	-	-
551	-	-	170.4899	-	-	-
552	-	-	170.4900	-	-	-
553	-	-	170.4900	-	-	-
554	0.0916	0.0366	170.4900	170.4900	170.4900	170.4900
555	-	0.0496	170.4899	-	-	-
556	-	-	170.4899	-	-	-
557	-	-	170.4900	-	-	-
558	-	-	170.4900	-	-	-
559	-	-	170.4900	-	-	-
560	-	-	170.4900	-	-	-
561	-	-	170.4901	-	-	-
562	-	-	170.4900	-	-	-
563	-	-	170.4900	-	-	-
564	-	-	170.4900	-	-	-
565	-	-	170.4899	-	-	-
566	0.0916	0.0862		170.4900	170.4900	170.4900
567						
568						
569						
570	Weighted	Weighted		Weighted	Weighted	Weighted
571	Drainage	Paving	CO2	Grubbing/Land Clearin	Grading	Drainage
576	-	-	420.5418	-	-	-
577	-	-	420.5419	-	-	-
578	-	-	420.5419	-	-	-
579	-	-	420.5419	-	-	-
580	-	-	420.5421	-	-	-
581	0.2740	0.1096	420.5420	420.5420	420.5420	420.5420
582	-	0.1484	420.5422	-	-	-
583	-	-	420.5419	-	-	-
584	-	-	420.5418	-	-	-
585	-	-	420.5418	-	-	-
586	-	-	420.5420	-	-	-
587	-	-	420.5418	-	-	-
588	-	-	420.5420	-	-	-
589	-	-	420.5419	-	-	-
590	-	-	420.5418	-	-	-
591	-	-	420.5421	-	-	-
592	-	-	420.5418	-	-	-
593	0.2740	0.2579		420.5420	420.5420	420.5420
594						
595						
596						

	Z	AA	AB		AC	AD	AE
597	Weighted	Weighted			Weighted	Weighted	Weighted
598	Drainage	Paving	CO2		Grubbing/Land Clearing	Grading	Drainage
603	-	-		197.3765	-	-	-
604	-	-		197.3860	-	-	-
605	-	-		197.2474	-	-	-
606	-	-		197.2120	-	-	-
607	-	-		197.1838	-	-	-
608	0.1643	0.0657		197.0340	197.0340	197.0340	197.0340
609	-	0.0968		197.0284	-	-	-
610	-	-		197.0130	-	-	-
611	-	-		196.9552	-	-	-
612	-	-		196.9378	-	-	-
613	-	-		196.9463	-	-	-
614	-	-		196.9680	-	-	-
615	-	-		196.9854	-	-	-
616	-	-		196.9970	-	-	-
617	-	-		197.0000	-	-	-
618	-	-		197.0295	-	-	-
619	-	-		196.9645	-	-	-
620	0.1643	0.1625			197.0340	197.0340	197.0340
621							
622							
623							
624							
625	Weighted	Weighted			Weighted	Weighted	Weighted
626	Drainage	Paving	CO2		Grubbing/Land Clearing	Grading	Drainage
631	-	-		210.6925	-	-	-
632	-	-		210.6449	-	-	-
633	-	-		210.5776	-	-	-
634	-	-		210.5344	-	-	-
635	-	-		210.4949	-	-	-
636	0.0965	0.0386		210.4867	210.4867	210.4867	210.4867
637	-	0.0549		210.5184	-	-	-
638	-	-		210.6149	-	-	-
639	-	-		210.6082	-	-	-
640	-	-		210.5757	-	-	-
641	-	-		210.5670	-	-	-
642	-	-		210.6474	-	-	-
643	-	-		210.7034	-	-	-
644	-	-		210.6941	-	-	-
645	-	-		210.7250	-	-	-
646	-	-		210.6825	-	-	-
647	-	-		210.6707	-	-	-
648	0.0965	0.0935			210.4867	210.4867	210.4867
649							
650							
651							
652							
653	Weighted	Weighted			Weighted	Weighted	Weighted
654	Drainage	Paving	CO2		Grubbing/Land Clearing	Grading	Drainage
659	-	-		210.3423	-	-	-
660	-	-		210.1359	-	-	-
661	-	-		210.2435	-	-	-
662	-	-		210.2060	-	-	-
663	-	-		210.1729	-	-	-
664	0.1366	0.0547		209.9459	209.9459	209.9459	209.9459
665	-	0.0814		209.8643	-	-	-
666	-	-		209.6553	-	-	-
667	-	-		209.8699	-	-	-
668	-	-		210.0065	-	-	-
669	-	-		210.0875	-	-	-
670	-	-		210.1026	-	-	-
671	-	-		209.7653	-	-	-
672	-	-		209.9072	-	-	-
673	-	-		209.9760	-	-	-
674	-	-		209.9436	-	-	-
675	-	-		209.8112	-	-	-
676	0.1366	0.1361			209.9459	209.9459	209.9459
677							
678							
679							
680							
681	Weighted	Weighted			Weighted	Weighted	Weighted
682	Drainage	Paving	CO2		Grubbing/Land Clearing	Grading	Drainage
687	-	-		188.4395	-	-	-
688	-	-		188.4326	-	-	-
689	-	-		188.4069	-	-	-
690	-	-		188.3991	-	-	-
691	-	-		188.3769	-	-	-
692	0.0622	0.0249		188.3234	188.3234	188.3234	188.3234
693	-	0.0366		188.2926	-	-	-
694	-	-		188.2780	-	-	-
695	-	-		188.3253	-	-	-
696	-	-		188.2416	-	-	-
697	-	-		188.2513	-	-	-
698	-	-		188.1912	-	-	-

	Z	AA	AB	AC	AD	AE
699	-	-	188.2118	-	-	-
700	-	-	188.3480	-	-	-
701	-	-	188.3160	-	-	-
702	-	-	188.3013	-	-	-
703	-	-	188.3348	-	-	-
704	0.0622	0.0615		188.3234	188.3234	188.3234
705						
706						
707						
708						
709	Weighted	Weighted		Weighted	Weighted	Weighted
710	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
715	-	-	252.6090	-	-	-
716	-	-	252.5928	-	-	-
717	-	-	252.6245	-	-	-
718	-	-	252.6648	-	-	-
719	-	-	252.6825	-	-	-
720	0.1116	0.0446	252.6332	252.6332	252.6332	252.6332
721	-	0.0655	252.5537	-	-	-
722	-	-	252.3812	-	-	-
723	-	-	252.3698	-	-	-
724	-	-	252.4658	-	-	-
725	-	-	252.3779	-	-	-
726	-	-	252.3444	-	-	-
727	-	-	252.4986	-	-	-
728	-	-	252.9084	-	-	-
729	-	-	252.8800	-	-	-
730	-	-	252.7027	-	-	-
731	-	-	252.5391	-	-	-
732	0.1116	0.1101		252.6332	252.6332	252.6332
733						
734						
735						
736						
737	Weighted	Weighted		Weighted	Weighted	Weighted
738	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
743	-	-	443.2739	-	-	-
744	-	-	443.2738	-	-	-
745	-	-	443.2737	-	-	-
746	-	-	443.2739	-	-	-
747	-	-	443.2739	-	-	-
748	0.3036	0.1214	443.2739	443.2739	443.2739	443.2739
749	-	0.1649	443.2737	-	-	-
750	-	-	443.2738	-	-	-
751	-	-	443.2739	-	-	-
752	-	-	443.2739	-	-	-
753	-	-	443.2738	-	-	-
754	-	-	443.2737	-	-	-
755	-	-	443.2740	-	-	-
756	-	-	443.2738	-	-	-
757	-	-	443.2738	-	-	-
758	-	-	443.2740	-	-	-
759	-	-	443.2740	-	-	-
760	0.3036	0.2863		443.2739	443.2739	443.2739
761						
762						
763						
764						
765	Weighted	Weighted		Weighted	Weighted	Weighted
766	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
771	-	-	193.1900	-	-	-
772	-	-	193.1498	-	-	-
773	-	-	193.0446	-	-	-
774	-	-	192.9551	-	-	-
775	-	-	192.8545	-	-	-
776	0.0795	0.0318	192.8723	192.8723	192.8723	192.8723
777	-	0.0448	192.7902	-	-	-
778	-	-	192.7709	-	-	-
779	-	-	192.7316	-	-	-
780	-	-	192.5886	-	-	-
781	-	-	192.6499	-	-	-
782	-	-	192.6539	-	-	-
783	-	-	192.6824	-	-	-
784	-	-	192.8681	-	-	-
785	-	-	192.9595	-	-	-
786	-	-	193.0374	-	-	-
787	-	-	192.9486	-	-	-
788	0.0795	0.0766		192.8723	192.8723	192.8723
789						
790						
791						
792						
793	Weighted	Weighted		Weighted	Weighted	Weighted
794	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
799	-	-	157.3969	-	-	-
800	-	-	157.2123	-	-	-

	Z	AA	AB	AC	AD	AE
801	-	-	156.8394	-	-	-
802	-	-	156.8188	-	-	-
803	-	-	156.7303	-	-	-
804	0.0348	0.0139	156.7528	156.7528	156.7528	156.7528
805	-	0.0211	156.7519	-	-	-
806	-	-	156.5297	-	-	-
807	-	-	157.2336	-	-	-
808	-	-	156.8584	-	-	-
809	-	-	157.4632	-	-	-
810	-	-	157.5342	-	-	-
811	-	-	157.5728	-	-	-
812	-	-	157.1641	-	-	-
813	-	-	157.1139	-	-	-
814	-	-	157.0730	-	-	-
815	-	-	157.0832	-	-	-
816	0.0348	0.0350		156.7528	156.7528	156.7528
817						
818						
819						
820						
821	Weighted	Weighted		Weighted	Weighted	Weighted
822	Drainage	Paving	CO_2	Grubbing/Land Clearin	Grading	Drainage
827	-	-	239.3048	-	-	-
828	-	-	239.3048	-	-	-
829	-	-	239.3048	-	-	-
830	-	-	239.3048	-	-	-
831	-	-	239.3048	-	-	-
832	0.2558	0.1023	239.3048	239.3048	239.3048	239.3048
833	-	0.1535	239.3048	-	-	-
834	-	-	239.3048	-	-	-
835	-	-	239.3048	-	-	-
836	-	-	239.3048	-	-	-
837	-	-	239.3048	-	-	-
838	-	-	239.3048	-	-	-
839	-	-	239.3048	-	-	-
840	-	-	239.3048	-	-	-
841	-	-	239.3048	-	-	-
842	-	-	239.3048	-	-	-
843	-	-	239.3048	-	-	-
844	0.2558	0.2558		239.3048	239.3048	239.3048
845						
846						
847						
848						
849	Weighted	Weighted		Weighted	Weighted	Weighted
850	Drainage	Paving	CO_2	Grubbing/Land Clearin	Grading	Drainage
855	-	-	193.9794	-	-	-
856	-	-	194.0642	-	-	-
857	-	-	194.2828	-	-	-
858	-	-	194.5005	-	-	-
859	-	-	194.6232	-	-	-
860	0.0290	0.0116	194.8096	194.8096	194.8096	194.8096
861	-	0.0863	194.9647	-	-	-
862	-	-	194.6931	-	-	-
863	-	-	194.4603	-	-	-
864	-	-	194.1724	-	-	-
865	-	-	194.0359	-	-	-
866	-	-	193.9794	-	-	-
867	-	-	194.0642	-	-	-
868	-	-	194.2828	-	-	-
869	-	-	194.5005	-	-	-
870	-	-	194.6232	-	-	-
871	-	-	194.8096	-	-	-
872	0.0290	0.0979		194.8096	194.8096	194.8096
873						
874						
875						
876						
877	Weighted	Weighted		Weighted	Weighted	Weighted
878	Drainage	Paving	CO_2	Grubbing/Land Clearin	Grading	Drainage
883	-	-	265.1861	-	-	-
884	-	-	265.1971	-	-	-
885	-	-	265.0645	-	-	-
886	-	-	265.0444	-	-	-
887	-	-	264.8988	-	-	-
888	0.2602	0.1041	264.8916	264.8916	264.8916	264.8916
889	-	0.1558	264.8488	-	-	-
890	-	-	264.7415	-	-	-
891	-	-	264.7493	-	-	-
892	-	-	264.5615	-	-	-
893	-	-	264.3268	-	-	-
894	-	-	264.5018	-	-	-
895	-	-	264.5912	-	-	-
896	-	-	264.6130	-	-	-
897	-	-	264.8157	-	-	-
898	-	-	264.7835	-	-	-

	Z	AA	AB	AC	AD	AE
899	-	-	264.9332	-	-	-
900	0.2602	0.2599		264.8916	264.8916	264.8916
901						
902						
903						
904						
905	Weighted	Weighted		Weighted	Weighted	Weighted
906	Drainage	Paving	CO2	Grubbing/Land Clearing	Grading	Drainage
911	-	-	255.7350	-	-	-
912	-	-	255.7350	-	-	-
913	-	-	255.7349	-	-	-
914	-	-	255.7350	-	-	-
915	-	-	255.7349	-	-	-
916	0.1951	0.0780	255.7350	255.7350	255.7350	255.7350
917	-	0.1067	255.7350	-	-	-
918	-	-	255.7349	-	-	-
919	-	-	255.7349	-	-	-
920	-	-	255.7350	-	-	-
921	-	-	255.7350	-	-	-
922	-	-	255.7350	-	-	-
923	-	-	255.7350	-	-	-
924	-	-	255.7349	-	-	-
925	-	-	255.7349	-	-	-
926	-	-	255.7349	-	-	-
927	-	-	255.7350	-	-	-
928	0.1951	0.1847		255.7350	255.7350	255.7350
929						

	AF
1	
2	
3	
4	
5	CO2
6	Weighted
7	Paving
12	-
13	-
14	-
15	-
16	-
17	64.4797
18	96.7196
19	-
20	-
21	-
22	-
23	-
24	-
25	-
26	-
27	-
28	-
29	161.1993
30	
31	Weighted
32	Paving
37	-
38	-
39	-
40	-
41	-
42	109.1135
43	163.6704
44	-
45	-
46	-
47	-
48	-
49	-
50	-
51	-
52	-
53	-
54	272.7840
55	
56	Weighted
57	Paving
62	-
63	-
64	-
65	-
66	-
67	104.2415
68	156.1680
69	-
70	-
71	-
72	-
73	-
74	-
75	-
76	-
77	-
78	-
79	260.4095
80	
81	
82	
83	Weighted
84	Paving
89	-
90	-
91	-
92	-
93	-
94	127.2992
95	190.9487
96	-
97	-
98	-
99	-
100	-
101	-
102	-

	AF
103	-
104	-
105	-
106	318.2479
107	
108	
109	
110	Weighted
111	Paving
116	-
117	-
118	-
119	-
120	-
121	165.9435
122	248.9153
123	-
124	-
125	-
126	-
127	-
128	-
129	-
130	-
131	-
132	-
133	414.8588
134	
135	
136	
137	
138	Weighted
139	Paving
144	-
145	-
146	-
147	-
148	-
149	60.3889
150	90.5870
151	-
152	-
153	-
154	-
155	-
156	-
157	-
158	-
159	-
160	-
161	150.9759
162	
163	
164	
165	
166	Weighted
167	Paving
172	-
173	-
174	-
175	-
176	-
177	89.9424
178	134.9453
179	-
180	-
181	-
182	-
183	-
184	-
185	-
186	-
187	-
188	-
189	224.8877
190	
191	
192	

	AF
193	Weighted
194	Paving
199	-
200	-
201	-
202	-
203	-
204	177.3096
205	265.9644
206	-
207	-
208	-
209	-
210	-
211	-
212	-
213	-
214	-
215	-
216	443.2739
217	
218	
219	
220	Weighted
221	Paving
226	-
227	-
228	-
229	-
230	-
231	79.9303
232	119.9020
233	-
234	-
235	-
236	-
237	-
238	-
239	-
240	-
241	-
242	-
243	199.8323
244	
245	
246	
247	Weighted
248	Paving
253	-
254	-
255	-
256	-
257	-
258	41.9998
259	62.9997
260	-
261	-
262	-
263	-
264	-
265	-
266	-
267	-
268	-
269	-
270	104.9995
271	
272	
273	
274	Weighted
275	Paving
280	-
281	-
282	-
283	-
284	-
285	168.2168
286	252.3252
287	-
288	-
289	-
290	-
291	-
292	-
293	-
294	-

	AF
295	-
296	-
297	420.5420
298	
299	
300	
301	Weighted
302	Paving
307	-
308	-
309	-
310	-
311	-
312	87.3477
313	130.9571
314	-
315	-
316	-
317	-
318	-
319	-
320	-
321	-
322	-
323	-
324	218.3048
325	
326	
327	
328	Weighted
329	Paving
334	-
335	-
336	-
337	-
338	-
339	91.3703
340	136.9765
341	-
342	-
343	-
344	-
345	-
346	-
347	-
348	-
349	-
350	-
351	228.3467
352	
353	
354	
355	Weighted
356	Paving
361	-
362	-
363	-
364	-
365	-
366	80.5721
367	120.8756
368	-
369	-
370	-
371	-
372	-
373	-
374	-
375	-
376	-
377	-
378	201.4478
379	
380	
381	
382	Weighted
383	Paving
388	-
389	-
390	-
391	-
392	-
393	86.5456
394	129.8131
395	-
396	-

	AF
397	-
398	-
399	-
400	-
401	-
402	-
403	-
404	-
405	216.3588
406	
407	
408	
409	Weighted
410	Paving
415	-
416	-
417	-
418	-
419	-
420	71.1682
421	106.7523
422	-
423	-
424	-
425	-
426	-
427	-
428	-
429	-
430	-
431	-
432	177.9205
433	
434	
435	
436	Weighted
437	Paving
442	-
443	-
444	-
445	-
446	-
447	82.7206
448	124.0810
449	-
450	-
451	-
452	-
453	-
454	-
455	-
456	-
457	-
458	-
459	206.8016
460	
461	
462	Weighted
463	Paving
468	-
469	-
470	-
471	-
472	-
473	86.9145
474	130.4092
475	-
476	-
477	-
478	-
479	-
480	-
481	-
482	-
483	-
484	-
485	217.3238
486	
487	
488	
489	Weighted
490	Paving
495	-
496	-
497	-
498	-

	AF
499	-
500	74.0519
501	111.0972
502	-
503	-
504	-
505	-
506	-
507	-
508	-
509	-
510	-
511	-
512	185.1492
513	
514	
515	
516	Weighted
517	Paving
522	-
523	-
524	-
525	-
526	-
527	97.7476
528	146.6213
529	-
530	-
531	-
532	-
533	-
534	-
535	-
536	-
537	-
538	-
539	244.3689
540	
541	
542	
543	Weighted
544	Paving
549	-
550	-
551	-
552	-
553	-
554	68.1960
555	102.2940
556	-
557	-
558	-
559	-
560	-
561	-
562	-
563	-
564	-
565	-
566	170.4900
567	
568	
569	
570	Weighted
571	Paving
576	-
577	-
578	-
579	-
580	-
581	168.2168
582	252.3253
583	-
584	-
585	-
586	-
587	-
588	-
589	-
590	-
591	-
592	-
593	420.5421
594	
595	
596	

	AF
597	Weighted
598	Paving
603	-
604	-
605	-
606	-
607	-
608	78.8136
609	118.2171
610	-
611	-
612	-
613	-
614	-
615	-
616	-
617	-
618	-
619	-
620	197.0307
621	
622	
623	
624	
625	Weighted
626	Paving
631	-
632	-
633	-
634	-
635	-
636	84.1947
637	126.3111
638	-
639	-
640	-
641	-
642	-
643	-
644	-
645	-
646	-
647	-
648	210.5058
649	
650	
651	
652	
653	Weighted
654	Paving
659	-
660	-
661	-
662	-
663	-
664	83.9784
665	125.9186
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672	-
673	-
674	-
675	-
676	209.8970
677	
678	
679	
680	
681	Weighted
682	Paving
687	-
688	-
689	-
690	-
691	-
692	75.3294
693	112.9755
694	-
695	-
696	-
697	-
698	-

	AF
699	-
700	-
701	-
702	-
703	-
704	188.3049
705	
706	
707	
708	
709	Weighted
710	Paving
715	-
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717	-
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726	-
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728	-
729	-
730	-
731	-
732	252.5855
733	
734	
735	
736	
737	Weighted
738	Paving
743	-
744	-
745	-
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747	-
748	177.3096
749	265.9642
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752	-
753	-
754	-
755	-
756	-
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758	-
759	-
760	443.2738
761	
762	
763	
764	
765	Weighted
766	Paving
771	-
772	-
773	-
774	-
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777	115.6741
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782	-
783	-
784	-
785	-
786	-
787	-
788	192.8231
789	
790	
791	
792	
793	Weighted
794	Paving
799	-
800	-

	AF
801	-
802	-
803	-
804	62.7011
805	94.0511
806	-
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808	-
809	-
810	-
811	-
812	-
813	-
814	-
815	-
816	156.7522
817	
818	
819	
820	
821	Weighted
822	Paving
827	-
828	-
829	-
830	-
831	-
832	95.7219
833	143.5829
834	-
835	-
836	-
837	-
838	-
839	-
840	-
841	-
842	-
843	-
844	239.3048
845	
846	
847	
848	
849	Weighted
850	Paving
855	-
856	-
857	-
858	-
859	-
860	77.9238
861	116.9788
862	-
863	-
864	-
865	-
866	-
867	-
868	-
869	-
870	-
871	-
872	194.9027
873	
874	
875	
876	
877	Weighted
878	Paving
883	-
884	-
885	-
886	-
887	-
888	105.9566
889	158.9093
890	-
891	-
892	-
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894	-
895	-
896	-
897	-
898	-

	AF
899	-
900	264.8659
901	
902	
903	
904	
905	Weighted
906	Paving
911	-
912	-
913	-
914	-
915	-
916	102.2940
917	153.4410
918	-
919	-
920	-
921	-
922	-
923	-
924	-
925	-
926	-
927	-
928	255.7350
929	

Appendix C
EMFAC 2011 GHG Analysis

GHG Calculation - SR 85 Express Lanes

		VMT (Annual)	Speed (Peak Hour)	Emission Factors (g/mile)		
				CO_2	N_2O	CH_4
Existing Conditions	2007	836,973,758	43.0	3.89E+02	3.58E-02	2.16E-01
No Build Alternative	2015	933,055,022	38.5	3.60E+02	3.57E-02	2.12E-01
Build Alternative	2015	995,888,663	47.5	3.39E+02	3.57E-02	2.12E-01
No Build Alternative	2035	999,656,046	29.5	3.36E+02	3.54E-02	2.18E-01
Build Alternative	2035	1,101,694,727	37.5	2.89E+02	3.54E-02	2.18E-01

Emission Factors are from EMFAC2011 and CCAR.

		Emissions (Metric Tons/Year)			**Total GHG Emissions (Metric Tons/Year)**
		CO_2	N_2O	CH_4	**CO_2e**
Existing Conditions	2007	325,788	30	181	**338,873**
No Build Alternative	2015	336,103	33	198	**350,586**
Build Alternative	2015	337,700	36	211	**353,158**
No Build Alternative	2035	336,059	35	218	**351,624**
Build Alternative	2035	318,866	39	240	**336,021**

Note: Numbers might not add up due to rounding

Global Warming Potential	CO_2	N_2O	CH_4
	1	310	21

Source: Global Warming Potential (GWP) values were obtained from IPCC Second Assessment Report (1995)

Appendix D
Air Quality Conformity Task Force Consultation Materials

Air Quality Conformity Task Force
Summary Meeting Notes
October 27, 2011

Attendance:
Mike Brady – Caltrans
Ginger Vagenas – EPA
Ted Matley – FTA
Stew Sonnenberg– FHWA
Roy Molseed – VTA
Lynn McIntyre – URS
Stefanie Hom - MTC
Ashley Nguyen – MTC
Sri Srinivasan - MTC

1. **Welcome and Self Introductions**: Stefanie Hom (MTC) called the meeting to order at 9:30 am. See attendance roster above.

2. **$PM_{2.5}$ Interagency Consultations:** To begin the interagency consultations for $PM_{2.5}$ project level conformity, Stefanie Hom (MTC) asked the project sponsor to give a brief overview of the project prior to opening up the project for questions by the Task Force.

   POAQC Status Determinations

   Santa Clara Valley Transportation Authority (VTA): SR-85 Express Lanes Project

   Roy Molseed (VTA) gave an overview of the project. The project would convert existing High-Occupancy Vehicle (HOV) lanes on State Route (SR) 85 to High-Occupancy Toll (HOT) lanes. The express lanes would be implemented on northbound and southbound SR-85 from US-101 in southern San Jose to US-101 in Mountain View in Santa Clara County. The project would also include the continuation of the express lanes for 3.3 miles on US-101 in southern San Jose and 4.1 miles in Mountain View, for a total of 30.8 miles. Work includes the installation of new signage, striping, vehicle detection sensor units, and dynamic message signs.

   Roy indicated that the purpose of the project would be to maintain consistency with legislation to implement express lanes in the SR-85 corridor, utilize existing HOV capacity, and manage traffic congestions. The Draft EIR is expected to be released in the summer of 2012 and completed by the end of 2012.

   Lynn McIntyre (URS), working with VTA on the project, indicated that on SR-85, between US-101 at the southern terminus of SR-85 and I-280 in the north, trucks over 9,000 pounds are and will continue to be prohibited. The only trucks allowed on this span are maintenance vehicles, emergency vehicles, buses, and RVs. Since the truck restriction went into effect, truck percentages have been low, ranging from 0.25 percent to 3.05 percent. The express lanes project would not provide additional capacity for trucks. Even when the project is projected out to the years 2015 and 2035, the overall number of trucks remains low on the corridor.

   Lynn further explained that the 9 percent increase in truck traffic between the build scenario in 2035 and the no-build scenario is due to the fact that overall AADT is increasing, since single occupancy vehicles would now be allowed to use the express lanes. The increase in trucks is related to overall increase in vehicles as result of additional express lanes.

   Lynn added that they conducted a sensitivity analysis to calculate how high truck percentages would need to be on SR-85 before they go beyond the 10,000 AADT truck threshold. In 2015, the percentage would need to be at 7.3 percent, which would more than double the truck percentage. In 2035, truck percentages would need to be at 6.15 percent, which would more than double the existing highest truck percentage in the corridor. This project would not be able to accommodate this increase in truck traffic. Therefore, they believe that the SR-85 Express Lanes Project is not a POAQC.

Dick Fahey (Caltrans), who offered comments through email, was concerned about the increase in truck traffic, which would be as much as 9 percent between the no-build and build scenarios in 2035.

Mike Brady (Caltrans) indicated that the increase in truck traffic may have to do with how traffic numbers were derived. If the truck numbers were derived using a flat percentage applied to AADT, then it would show an increase in trucks because there would be more traffic in the HOV lane. He was not sure if traditional traffic studies are able to show if truck traffic actually increases like that.

Lynn responded that they applied a constant of 3.5 percent to derive truck AADT. They also looked at overall truck AADT in the corridor since it opened; in the years since the truck restriction went into place, the percentage of trucks has never been above 3.05 percent, which is why the 3.5 percent assumption is conservative.

Mike agreed that if VTA is applying a flat percentage to calculate AADT, the AADT assumptions are probably conservative for a HOV project because they are adding a lane that trucks are not supposed to be in.

Ginger Vagenas (EPA) indicated that the truck restriction is only for three-quarters length of the project. There is likely to be a difference in numbers outside of that area where the restrictions do not apply.

Lynn responded that they looked at that issue and do not believe there would be an increase in truck traffic since historical data has shown that truck traffic has remained low in the areas where there are no restrictions. It is not worth it for many trucks to travel on that segment of SR-85 for a short distance when they cannot exit to a major destination.

Mike indicated that it would have been helpful to know the boundaries of truck restriction. Lynn indicated that the truck restrictions do not apply on SR-85 between Fremont and El Camino.

Stew Sonnenberg (FHWA) indicated that even from the Fremont to El Camino section, truck traffic would be about 3.5 percent.

Final Determination: FHWA, Caltrans, EPA, FTA, and MTC concurred that this project is not a POAQC.

$PM_{2.5}$ Conformity Exempt List Review

Stefanie (MTC) indicated that there were 5 projects on the exempt list. Ashley (MTC) added that two of the projects were HSIP projects, and one bicycle/pedestrian projects. Stefanie asked for questions on any of these projects.

Mike (Caltrans) indicated that if the projects listed on the exempt list were not HSIP projects, then the first four projects would not be exempt.

Final Determination: FHWA, Caltrans, EPA, FTA, and MTC concurred that the projects on the exempt list are exempt from project level PM 2.5 conformity.

3. Consent Calendar

Stefanie (MTC) asked for questions on any items on the exempt calendar.

There were no questions on any items on the consent calendar.

Final Determination: All items on the consent calendar were approved by FHWA, Caltrans, EPA, FTA and MTC.

4. Other Business/Adjourn

Stefanie (MTC) reminded everyone to fill out the online Doodle poll sent out by Ashley (MTC) and Brenda (MTC) so they could assess the group's availability and schedule next month's meeting.

Ted Matley (FTA) suggested putting the issue of thresholds for minor transit projects on the next agenda.

Stew (FHWA) indicated that he sent out letter about the next certification review, which will occur January 10 - 12, 2012. Ashley (MTC) indicated they are starting the review process internally.

Ashley indicated that MTC is hoping to consultant with federal agencies on demographic assumptions for the RTP in January. There are a lot of changes on how demographic forecasts are prepared and they want to run the methodology and approach by the group before starting the conformity analysis.

Ginger (EPA) requested that she would like to have any materials prepared on establishing thresholds on minor transit fleet expansions as far in advance as possible. OTAC is interested in providing comments, and EPA would like as much lead time as possible with them.

Ted and Ashley indicated that they would work together on the minor transit fleet expansions threshold materials and would forward them to Ginger.

Stefanie adjourned the meeting at approximately 10:00 am.

J:\SECTION\PLANNING\AIRQUAL\TSKFORCE\2011\11-30-11\Drafts\3a_AQCTF Meeting Notes Summary - 102711.docx

FMS Log in | Version 3.0.30

Project Manager Report Manager Help

VIEW PROJECT: **SR 85 Express Lanes**

Project Search | Project Detail | Funding | Air Quality | Project Documents | Contacts | Delivery Milestones | Location | Screening Criteria | Comm

TIP ID	SCL090030	**Status**	ACTIVE	**County**	Santa Clara	**Project name**	SR 85 Express Lanes
FMS ID	4197.00	**Version**	8	**Implementing Agency**	VTA	**Sponsor**	VTA

Regional Conformity

Air Quality Code	Air Quality Description
Non-Exempt	NON-EXEMPT

Air Basin	Air District
San Francisco Bay Area	Bay Area AQMD

TCM	TCM Number	VOC	NOX	CO	PM10	PM2.5	CO2
		0.0	0.0	0.0	0.0	0.0	0.0

Conformity Analysis Year	Regionally Significant
2015	
** Based on RTP ID of the project	

Project Conformity

Overview: The San Francisco Bay Area has been designated as non-attainment for the 24-hour PM2.5 standard. Beginning December 14, 2010, certain projects are required to complete a PM2.5 hot-spot analysis as part of the project-level conformity determination process. Project sponsors must engage in interagency consultation on the PM2.5 hot-spot analysis through MTC's Air Quality Conformity Task Force. The Conformity Task Force will (1) determine if a project meets the definition of a project of air quality concern and if the project requires undergoing a project-level PM2.5 hot-spot analysis, and (2) review the methods, assumptions and analysis of the PM2.5 hot-spot analysis. The EPA and either FHWA or FTA must concur with the recommendations from the Conformity Task Force. Upon completion of the interagency consultation, project sponsors must seek approval from FHWA or FTA on the PM2.5 hot-spot analysis.

Project Conformity Analysis Summary

Next Step	Responsible Party
Project Conformity Analysis complete	

Milestone	Status	Comments
Step 1 - Project Identification		
Sponsor Input	Completed	
System Determination	Completed	Project meets the definition of a 'project of air quality conern' under 40 CFR 93.123(b)(1): {New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;}. This project may require a PM2.5 Hot Spot Analysis and is therefore subject to interagency consultation
Task Force Determination	Completed	Project is a potential POAQC. Please complete Step 2 Date of Consultation: 10/27/2011 Date of Action: 10/27/2011
Step 2 - Interagency Consultation		
Sponsor Input	Completed	Project Assessment Form: SR 85 Express Lanes Project PM2 5 Form.pdf Requested Date of Consultation: JUL 2011
Task Force Determination	Completed	Project is NOT a POAQC Date of Consultation: 10/27/2011 Date of Action: 10/27/2011
Step 3 - PM 2.5 Hot Spot Analysis	N/A	
Sponsor Input		
Task Force Review		

URS # Memorandum

Date: February 14, 2013

To: Brenda Dix, Metropolitan Transportation Commission

From: Roy Molseed, Senior Environmental Planner, VTA, and Lynn McIntyre, Project Manager/Environmental, URS

Subject: ***Request for Task Force Concurrence, State Route 85 Express Lanes Project, Santa Clara County, CA (SCL090030, FMS 4197.00)***

In October 2011, Santa Clara Valley Transportation Authority (VTA) consulted with the Air Quality Conformity Task Force on the SR 85 Express Lanes Project (TIP # SCL090030, FMS ID # 4197.00). The project was determined not to be a Project of Air Quality Concern (POAQC; see Attachment A). Public consultation on the Task Force determination will take place as part of the National Environmental Policy Act (NEPA) document circulation this spring.

Follow-on consultation with the Task Force is requested as a result of a recent project change. An auxiliary lane is proposed to be added in a 1.2-mile segment of northbound SR 85 between the existing South De Anza Boulevard northbound on-ramp and the Stevens Creek Boulevard northbound off-ramp in Cupertino. The purpose of the auxiliary lane is to improve traffic operations during peak periods in this segment. The existing pavement would be widened by up to 14 feet to the outside (northeast). No additional right-of-way would be required.

This project change will be included in the 2013 TIP which the Task Force will receive for comment at the March 2013 meeting.

Project-Level Conformity

Attachment A contains the Project Assessment Form for $PM_{2.5}$ Interagency Consultation submitted for the proposed project in October 2011. As shown in Attachment A, the project would not appreciably increase capacity for diesel vehicles. Trucks over 9,000 pounds are prohibited on SR 85 between US 101 in southern San Jose and I-280 (PM 0.00 to 18.45; corridor ends at PM 24.1), except for maintenance and emergency vehicles, buses, and recreational vehicles. Caltrans truck count data for 2009 indicate that truck percentages on SR 85 range from 0.25 percent to 3.05 percent. These percentages are consistent with Caltrans truck count data for 2011. The majority of trucks on SR 85 are two axle.

For both the opening year (2015) and construction year (2035), the Build Alternative had an average increase of approximately 200 trucks compared with No Build for the representative segments evaluated in Attachment A. Although the overall numbers were low, it was pointed out at the October 27, 2011, Task Force meeting that the change in truck traffic would be as much as 9 percent between the No Build and Build scenarios in 2035. The percentage increase is a result of how the truck AADT was calculated, using a conservative assumption of 3.50 percent trucks. The same percentage was applied to all freeway traffic, including the single HOV lane for No Build and the single and double express lanes for Build. As trucks cannot use HOV or express lanes, the potential truck increases are likely overestimated. In addition, overall truck AADT in the SR 85 corridor since the truck restriction went into place has never been above 3.05 percent.

As noted previously, the project proposes to add a 1.2-mile auxiliary lane in the northbound direction of SR 85 between South De Anza Boulevard and Stevens Creek Boulevard in Cupertino. Trucks are prohibited in this part of SR 85, and 2011 Caltrans truck count data show that trucks account for only 0.57 percent of total traffic at the Stevens Creek Boulevard interchange (truck AADT 701 at 085 04 SCL R17.699).

The proposed auxiliary lane would not appreciably change freeway capacity for diesel trucks or other vehicles because all traffic using the lane must either move into the adjacent lanes or exit at Stevens Creek Boulevard. Moreover, the auxiliary lane was added to the project to further improve traffic conditions. Therefore, this project change would not create a new, or worsen an existing, $PM_{2.5}$ violation. The proposed project meets the Clean Air Act requirements and 40 CFR 93.116 without any explicit hot spot analysis.

VTA is seeking the Task Force's confirmation that the addition of the proposed auxiliary lane does not change the previous determination that the project is not a POAQC.

Attachment A
Project Assessment Form for $PM_{2.5}$ Interagency Consultation

The San Francisco Bay Area is designated as nonattainment for the 24-hour $PM_{2.5}$ standard. Beginning December 14, 2010, certain projects are required to engage in interagency consultation and complete $PM_{2.5}$ hot-spot analysis as part of the project-level conformity determination process.

The purpose of this form is for the project sponsor to provide sufficient information to allow the Air Quality Conformity Task Force to determine if a project is considered a project of air quality concern and therefore requires a project-level $PM_{2.5}$ hot-spot analysis pursuant to Federal Conformity Regulations.

A project of air quality concern is defined in 40 CRF 93.123(b)(1) as follows:

(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 D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service 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 than 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; and
(v). Projects in or affecting locations, areas, or categories of sites which are identified in the PM10 or PM2.5 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The form is not required under the following circumstances:

The project does not require a project-level PM hot spot analysis since it:

- Is exempt pursuant to 40 CFR 93.126; or
- Is a traffic signal synchronization project under 40 CFR 93.128; or
- Uses no Federal funds AND requires no Federal approval from FHWA or FTA after December 14, 2010.

Instructions

The project sponsor is responsible for taking the following actions:

1. **Fill out this form in its entirety** and ensure that there is a sufficient level of detail about the project for the Air Quality Conformity Task Force to make an informed decision on whether or not a project requires a project-level $PM_{2.5}$ hot-spot analysis. For road projects, make sure to include all of the following pieces of information in the project area: level-of-service, annual average daily truck volume, truck counts, truck percentages. For transit projects, make sure to include all of the following pieces of information: current level of service for the transit routes, proposed changes to level of service for transit routes, number of diesel bus vehicles along the route and congregating, number of overall transit vehicles, ridership.
2. Project sponsors are required to supplement the assessment form with the attachments listed below within the limited qualities listed. Both the Task Force and project sponsors have found that these materials help to better explain the project and its potential impacts.
    - 1-2 maps or graphics which illustrate the project site and the surrounding land uses;

- 1-2 tables or charts which details information about the ADT and truck volumes
- Links to the draft environmental document and/or traffic studies
- A prepared summary of how criteria for a project of air quality concern (defined in 40 CRF 93.123(b)(1)) does or does not apply to the project. See Example 1: Application of Criteria for a Project of Air Quality Concern. This is only intended as a one page summary with emphasis on the third section of the example.

3. Upload and submit this completed form to MTC via FMS so that MTC can schedule this project for interagency consultation by the Air Quality Conformity Task Force. In addition to this form, the project sponsor may upload the $PM_{2.5}$ hot-spot analysis via FMS for review by the Conformity Task Force.
4. Ensure a representative is available to discuss the project at the Air Quality Conformity Task Force meeting if necessary.

Application of Criteria for a Project of Air Quality Concern

Project Title: SR 85 Express Lanes Project

Project Summary for Air Quality Conformity Task Force Meeting: October 27, 2011

Description

- Project will convert existing High-Occupancy Vehicle (HOV) lanes on State Route (SR) 85 to High-Occupancy Toll (HOT) lanes (hereafter known as express lanes)
- A second express lane would be included in both directions of SR 85 between SR 87 and I-280 to address existing and forecasted future HOV lane congestion
- The project would also install new signage, striping, vehicle detection sensor units, and dynamic message signs
- Trucks over 9,000 pounds are and would continue to be prohibited on SR 85 between US 101 (in southern San Jose) and I-280 (PM 0.00 to 18.45; corridor ends at PM 24.1), except for maintenance and emergency vehicles, buses, and recreational vehicles

Background

- Technical studies are in preparation to support NEPA process for Initial Study/Environmental Assessment (IS/EA)
- Public review for scheduled for July to August 2012
- Seeking project-level air quality conformity determination on or before September 2012

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?

- The project would not add capacity for diesel vehicles. Trucks over 9,000 pounds are prohibited on most of the SR 85 corridor, except for maintenance and emergency vehicles, buses, and recreational vehicles.
- Caltrans truck count data for 2009 indicate that truck percentages on SR 85 range from 0.25% to 3.05%, well below the significance threshold.
- Projected 2015 and 2035 annual average daily truck traffic data are below the United States Environmental Protection Agency significance threshold even for the highest-volume freeway segment.

(ii) Affects intersections at LOS D, E, or F with a significant number of diesel vehicles? —Not Applicable

(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 PM_{10} or $PM_{2.5}$ implementation plan as site of violation?

- No state implementation plan for $PM_{2.5}$ (due by December 2012)
- Therefore, not identified in plan as an area of potential violation

Project Assessment Form for $PM_{2.5}$ Interagency Consultation

RTIP ID# *(required)* 230674

TIP ID# *(required)* SCL090030

Air Quality Conformity Task Force Consideration Date
October 27, 2011

Project Description *(clearly describe project)*
The California Department of Transportation (Caltrans), in cooperation with the Santa Clara Valley Transportation Authority (VTA), proposes to convert the existing High-Occupancy Vehicle (HOV) lanes on State Route (SR) 85 to High-Occupancy Toll (HOT) lanes (hereafter known as express lanes). The express lanes would allow HOVs to continue to use the lanes without cost and eligible single-occupant vehicles (SOVs) to pay a toll. The express lanes would be implemented on northbound and southbound SR 85 from US 101 in southern San Jose to US 101 in Mountain View in Santa Clara County (Figures 1 and 2). The project would also include the continuation of the express lanes for 3.3 miles on US 101 in southern San Jose and 4.1 miles in Mountain View, for a total of 30.8 miles. Work on the US 101 segments will mainly consist of striping and signing and will not include widening or any changes in system or HOV lane access. The project does not require any right-of-way acquisition.

SR 85 typically has three lanes in each direction: two mixed-flow lanes and one HOV lane. Trucks are prohibited on the majority of the SR 85 corridor (Post Miles [PM] 0.00 to 18.45; corridor ends at PM 24.1). The project proposes to convert the existing HOV lanes on northbound and southbound SR 85 into express lane facilities that would have one lane between US 101 in southern San Jose and SR 87, two lanes between SR 87 and I-280, and one lane between I-280 and US 101 in Mountain View. In the section between SR 87 and I-280, where the median width is approximately 46 feet, pavement widening would be conducted in the median to accommodate the second express lane. The project would also install new signage, striping, vehicle detection sensor units, and dynamic message signs.

Type of Project: Change to existing State highway

County	**Narrative Location/Route & Postmiles**
Santa Clara	On SR 85 from PM 0.0 to 24.1. The project limits also include PM 25.3 to 28.6 and PM 47.9 to 52.0 on US 101, adjacent to the northern and southern termini of SR 85, to allow for striping and signage modifications. **Caltrans Projects – EA#** 04-4A7900

Lead Agency: Santa Clara Valley Transportation Authority (VTA)

Contact Person	**Phone#**	**Fax#**	**Email**
Roy Molseed	408 321-5784	408 321-5787	Roy.molseed@vta.org

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

Categorical Exclusion (NEPA)	**EA or Draft EIS**	X	**FONSI or Final EIS**	**PS&E or Construction**	**Other**

Scheduled Date of Federal Action: December 2012

NEPA Delegation – Project Type *(check appropriate box)* Not applicable

Exempt	**Section 6004 – Categorical Exemption**	**Section 6005 – Non-Categorical Exemption**

Current Programming Dates *(as appropriate)*

	PE/Environmental	**ENG**	**ROW**	**CON**
Start	October 2010	January 2013	January 2014	June 2014
End	December 2012	December 2013	March 2014	July 2015

$PM_{2.5}$ Project Assessment Form for Interagency Consultation

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

Purpose

The purpose of the project is to:

- Utilize excess capacity in the SR 85 HOV lanes,
- Manage traffic congestion in the most congested HOV segments of the freeway between SR 87 and I-280, and
- Maintain consistency with provisions defined in Assembly Bill 2032 (2004) and Assembly Bill 574 (2007) to implement express lanes in the SR 85 corridor.

Need

The proposed project is needed for the following reasons:

- During the peak hours (7 a.m. to 8 a.m. in the northbound direction and 5 p.m. to 6 p.m. in the southbound direction), SR 85 cannot accommodate all of the traffic demand in the corridor. Bottlenecks result in long backups in the mixed-flow lanes. Throughout the SR 85 corridor, the northbound mixed-flow lanes operate below the posted speed limit during the a.m. peak period, and the southbound mixed-flow lanes function below the posted speed limit during the p.m. peak period.
- In segments where the existing single HOV lane segments north of I-280 and south of SR 87 have additional capacity, the project would maximize the efficiency of the system by allowing SOVs into the HOV/express lane, therefore alleviating some of the congestion in the mixed-flow lanes in those segments.
- Between SR 87 and I-280, however, drivers in the HOV lane experience significant delays due to lack of HOV capacity. The existing wide median provides the opportunity to construct a second HOV/express lane and provide some congestion relief for both the HOV and mixed-flow lanes by allowing the SOVs in the mixed-flow lanes to pay a toll for use of the express lanes facility.
- Traffic conditions are expected to worsen in the future with continued development in the region and along the SR 85 corridor. Over the next 25 years, Santa Clara County is predicted to grow by over 500,000 residents and 400,000 jobs, increases of 27.5 and 45.6 percent, respectively. Over the same period, the County expects to increase the capacity of the roadway system by 5 to 6 percent. Traffic on SR 85 is also projected to increase in the form of both regional trips using SR 85 to bypass US 101 and local trips to and from locations on the SR 85 corridor.

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

SR 85 passes through Cupertino, Saratoga, Campbell, Los Gatos, San Jose's Cambrian Park, and the neighborhoods of Almaden Valley, Blossom Valley, and Santa Teresa (Figure 2). Development adjacent to the freeway includes commercial, industrial, research and development, institutional, residential, and open spaces. VTA's Light Rail runs within the SR 85 median south of SR 87.

The project would not change land uses in any way that would result in additional diesel truck traffic to or from the study area. Trucks over 9,000 pounds are prohibited on SR 85 between US 101 in southern San Jose and I-280 (PM 0.00 to 18.45; corridor ends at PM 24.1), except for maintenance and emergency vehicles, buses, and recreational vehicles. Therefore, truck volumes on SR 85 as a whole are low (3.05% or less of total traffic), and would remain so with or without the project.

Project Assessment Form for $PM_{2.5}$ Interagency Consultation

Brief summary of assumptions and methodology used for conducting analysis *(please keep this concise – specifics may include date of when traffic counts were conducted, studies where truck percentages were derived)*

Traffic volumes for the peak period were developed based on Caltrans 24-hour traffic volumes for the freeway mainline and at the on/off-ramps for Year 2007. URS conducted additional traffic counts in May 2010 to determine the throughput of existing bottlenecks during the peak hours. Annual average daily traffic (AADT) presented below represent both directions of SR 85.

As trucks over 9,000 pounds are prohibited on SR 85 between US 101 in southern San Jose and I-280 (PM 0.00 to 18.45; corridor ends at PM 24.1), truck percentages on SR 85 range from 0.25% to 3.05%, depending on location (http://traffic-counts.dot.ca.gov/2009all/docs/2009truckpublication.pdf). To be conservative, this analysis assumes a truck percentage of 3.50% for the SR 85 corridor.

The SR 85 corridor can be broken into four major segments between successive system interchanges as follows: 1) between US 101 at the southern project limit and SR 87, 2) between SR 87 and I-880/SR-17, 3) between I-880/SR-17 and I-280, and 4) between I-280 and US 101 at the northern project limit. Because truck traffic percentage is not expected to change significantly within each of these four major segments, the four sub-segments of SR 85 evaluated below were chosen to represent each of the major segments listed above.

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

Year 2015

Segment		No Build AADT		Build AADT	
From	To	Total	Trucks	Total	Trucks
Blossom Hill	SR 87	148,900	5,212	153,400	5,369
Union	Bascom	139,100	4,869	149,300	5,226
Saratoga	Sunnyvale/DeAnza	113,400	3,969	122,200	4,277
Fremont	El Camino	125,100	4,379	125,800	4,403

Source: Total AADT from Wilbur Smith Associates 2011.
Note: Truck percentage assumed at 3.50%.

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

Year 2035

Segment		No Build AADT		Build AADT	
From	To	Total	Trucks	Total	Trucks
Blossom Hill	SR 87	184,900	6,472	187,300	6,556
Union	Bascom	164,700	5,765	175,800	6,153
Saratoga	Sunnyvale/DeAnza	138,900	4,862	150,800	5,278
Fremont	El Camino	146,200	5,117	143,600	5,026

Source: Total AADT from Wilbur Smith Associates 2011.
Note: Truck percentage assumed at 3.50%.

$PM_{2.5}$ Project Assessment Form for Interagency Consultation

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 Not applicable **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
Describe potential traffic redistribution effects of congestion relief *(impact on other facilities)* The project would not have adverse traffic redistribution effects. As a result of the existing truck restrictions that would continue to apply with the project, no significant changes in truck traffic would occur at local interchanges. Furthermore, the data for the study segments indicates that no significant changes in truck traffic would occur from the major system interchanges along the corridor (between US 101 at the southern project limit and SR 87, between SR 87 and I-880/SR-17, between I-880/SR-17 and I-280, and between I-280 and US 101 at the northern project limit). Even in the SR 85 segment where no truck restrictions are in place, truck AADTs and percentages would remain well below the 10,000 AADT/8% threshold established by the United States Environmental Protection Agency for projects of air quality concern.[1] Buses and transit providers will be able to use the express lanes for free. The project will not affect VTA's Light Rail that currently runs within the SR 85 median south of SR 87.

[1] Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas, Appendix A, United States Environmental Protection Agency and Federal Highway Administration, EPA420-B-06-902, March 2006.

Project Assessment Form for $PM_{2.5}$ Interagency Consultation

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

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

1. It is not a new or expanded highway project that would have a significant number of or increase in the number of diesel vehicles (40 CFR Section 93.123(b)(1)(i)).

- The project would not add capacity for diesel vehicles. Trucks over 9,000 pounds are prohibited on most of the SR 85 corridor, except for maintenance and emergency vehicles, buses, and recreational vehicles.
- Caltrans truck count data for 2009 indicate that truck percentages on SR 85 range from 0.25% to 3.05%, well below the significance threshold.
- Projected 2015 and 2035 annual average daily truck traffic data are below the United States Environmental Protection Agency significance threshold even for the highest-volume freeway segment.

2. The project does not affect any intersections (40 CFR Section 93.123(b)(1)(ii)).

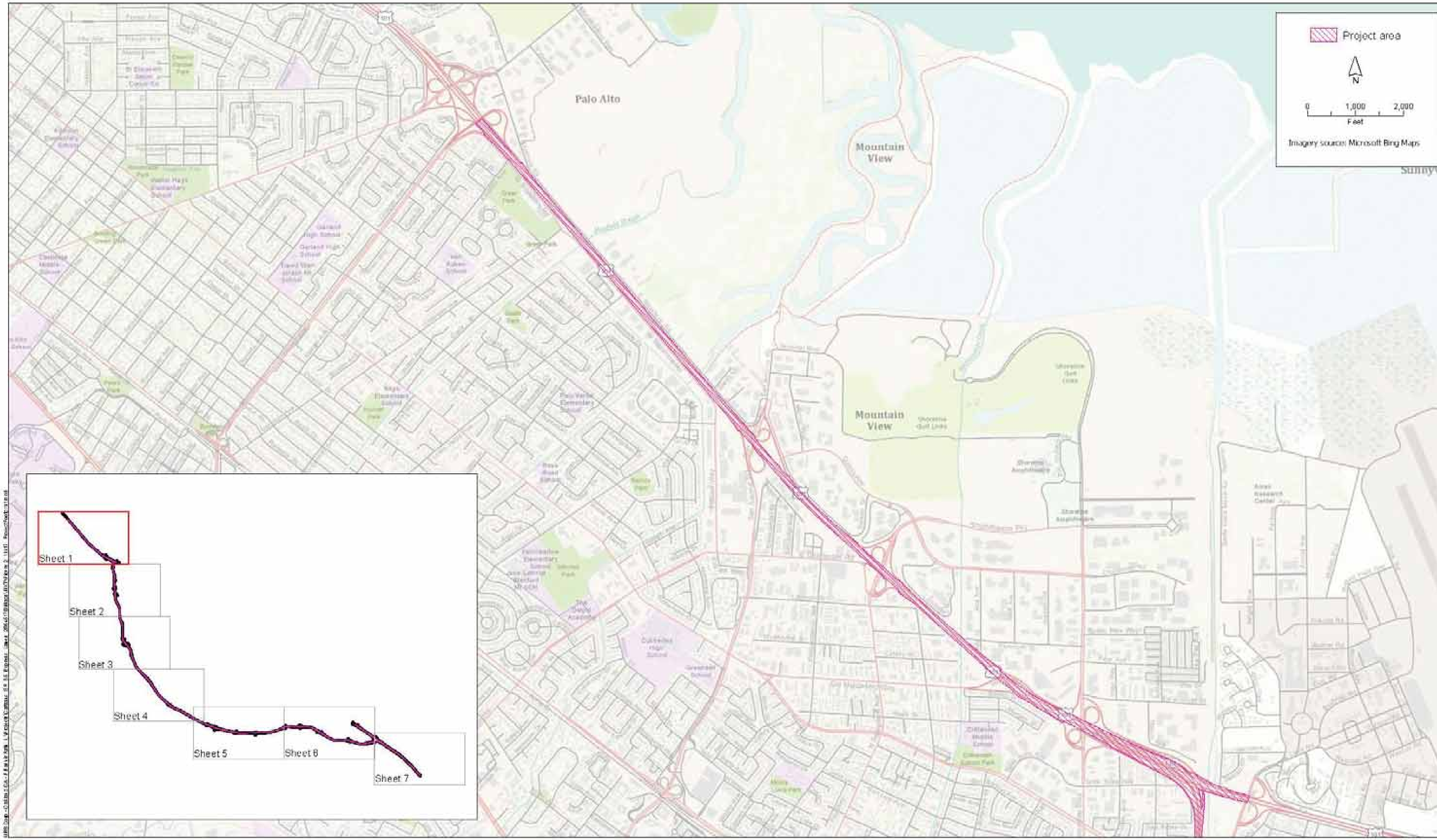
3. It is not a new bus or rail terminal or transfer point (40 CFR Section 93.123(b)(1)(iii)).

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

5. There is no state implementation plan for PM2.5, and the project area is therefore not identified in an implementation plan as an area of potential violation (40 CFR Section 93.123(b)(1)(v)).

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, PM2.5 violation.

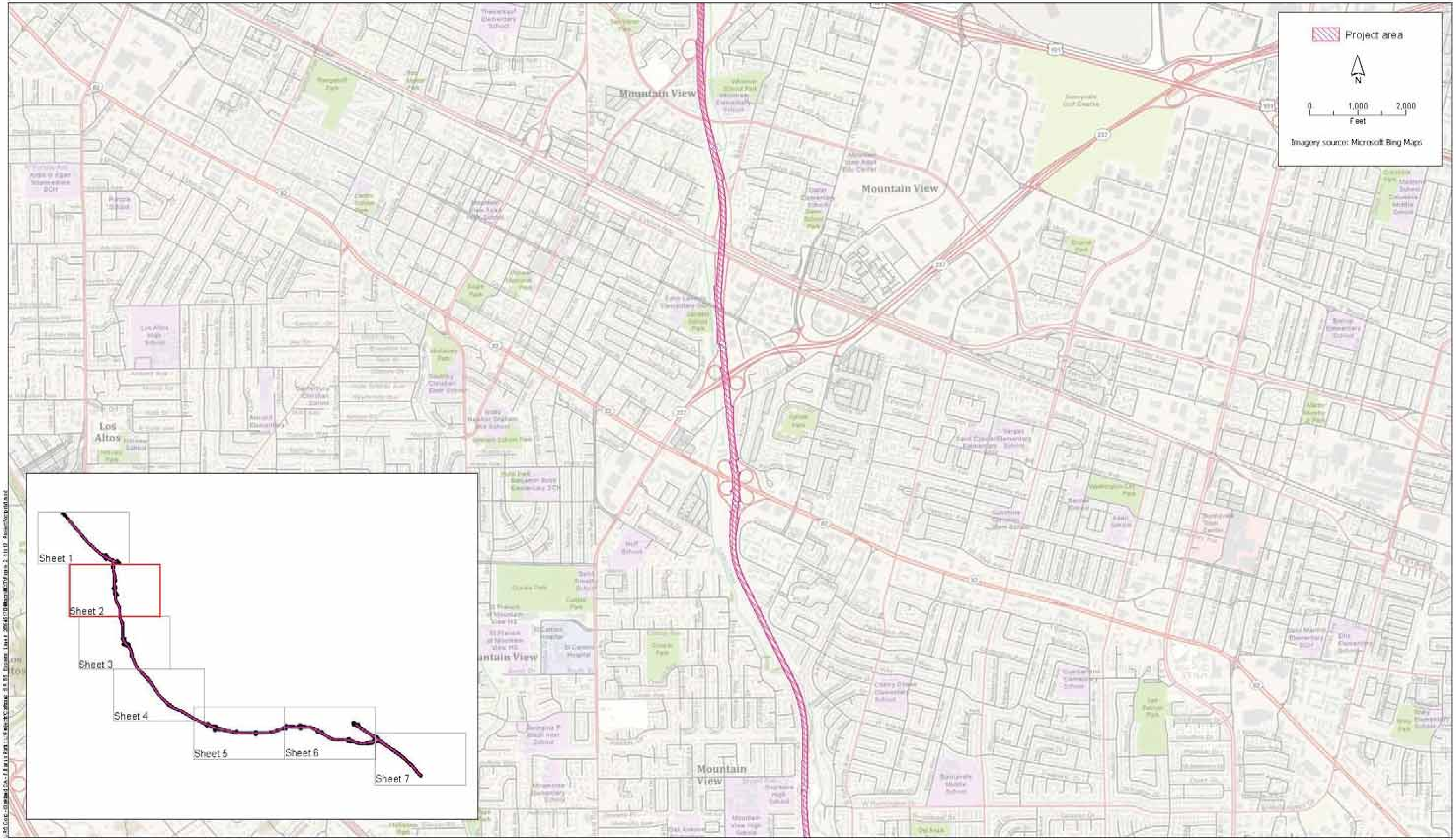
Figure 1. SR 85 Express Lanes Project Vicinity



URS Caltrans
State Route 85 Express Lanes

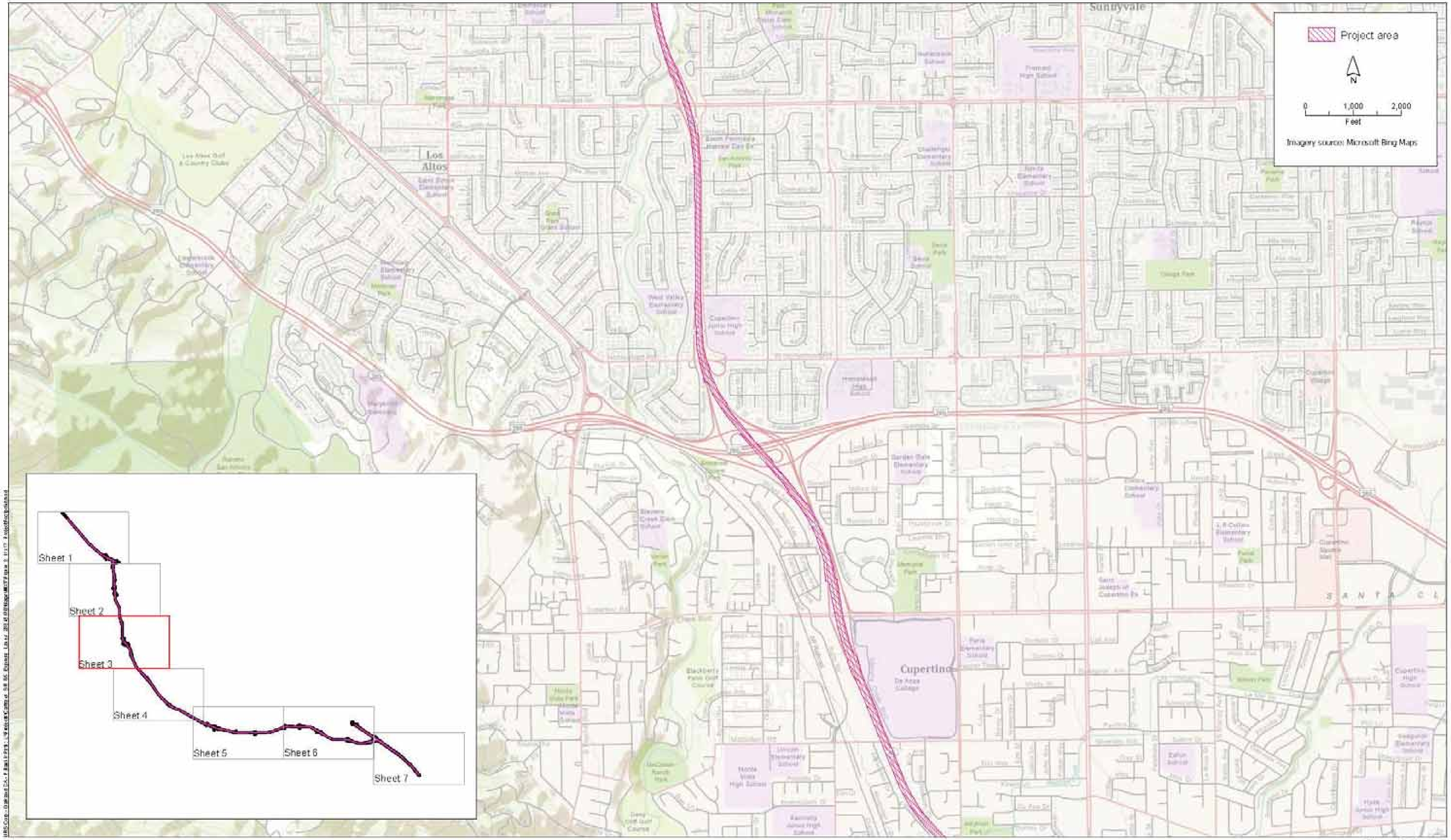
Figure 2 Sheet 1
Project area

PM$_{2.5}$ Project Assessment Form for Interagency Consultation



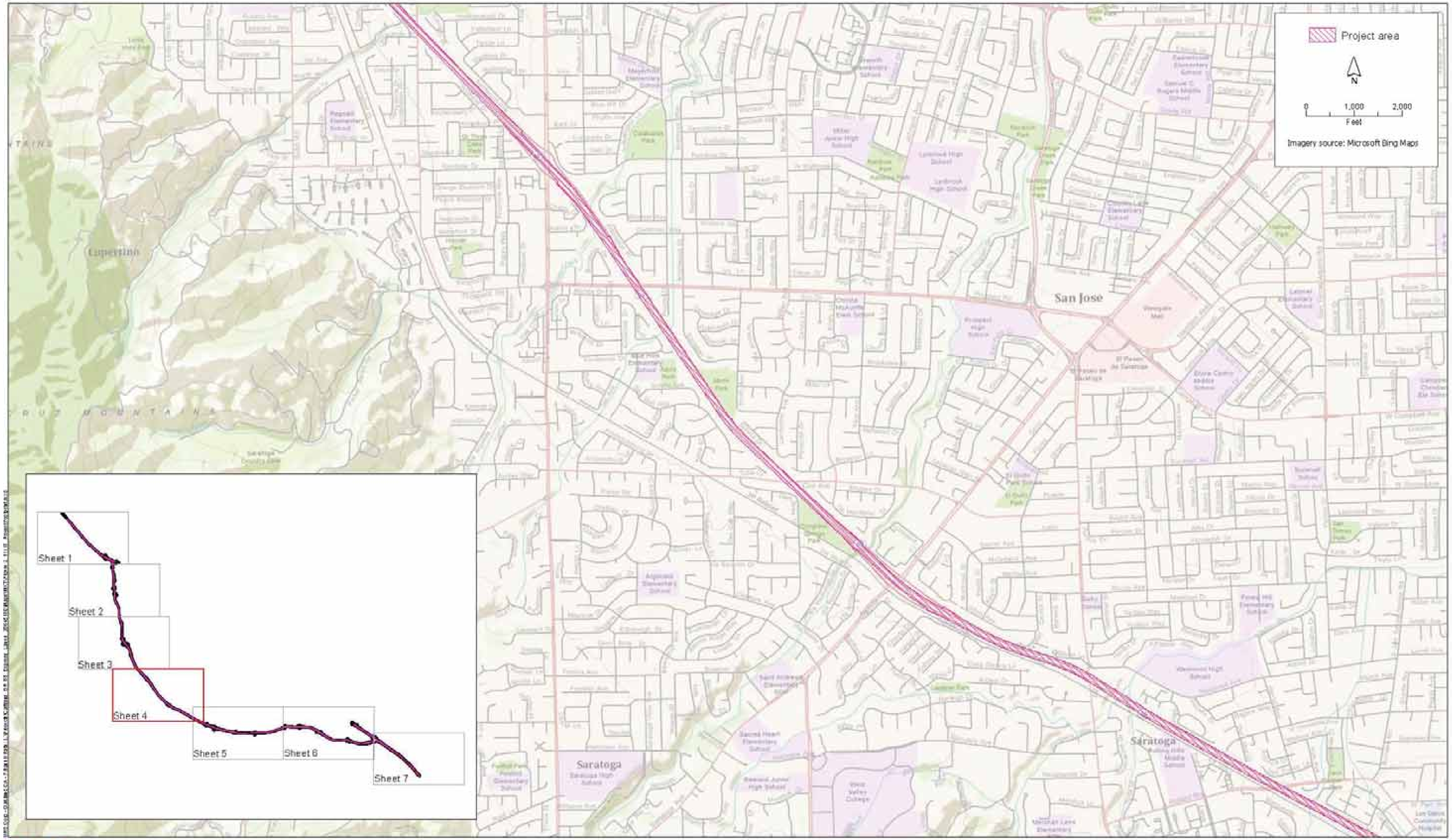
URS Caltrans
State Route 85 Express Lanes

Figure 2, Sheet 2
Project area



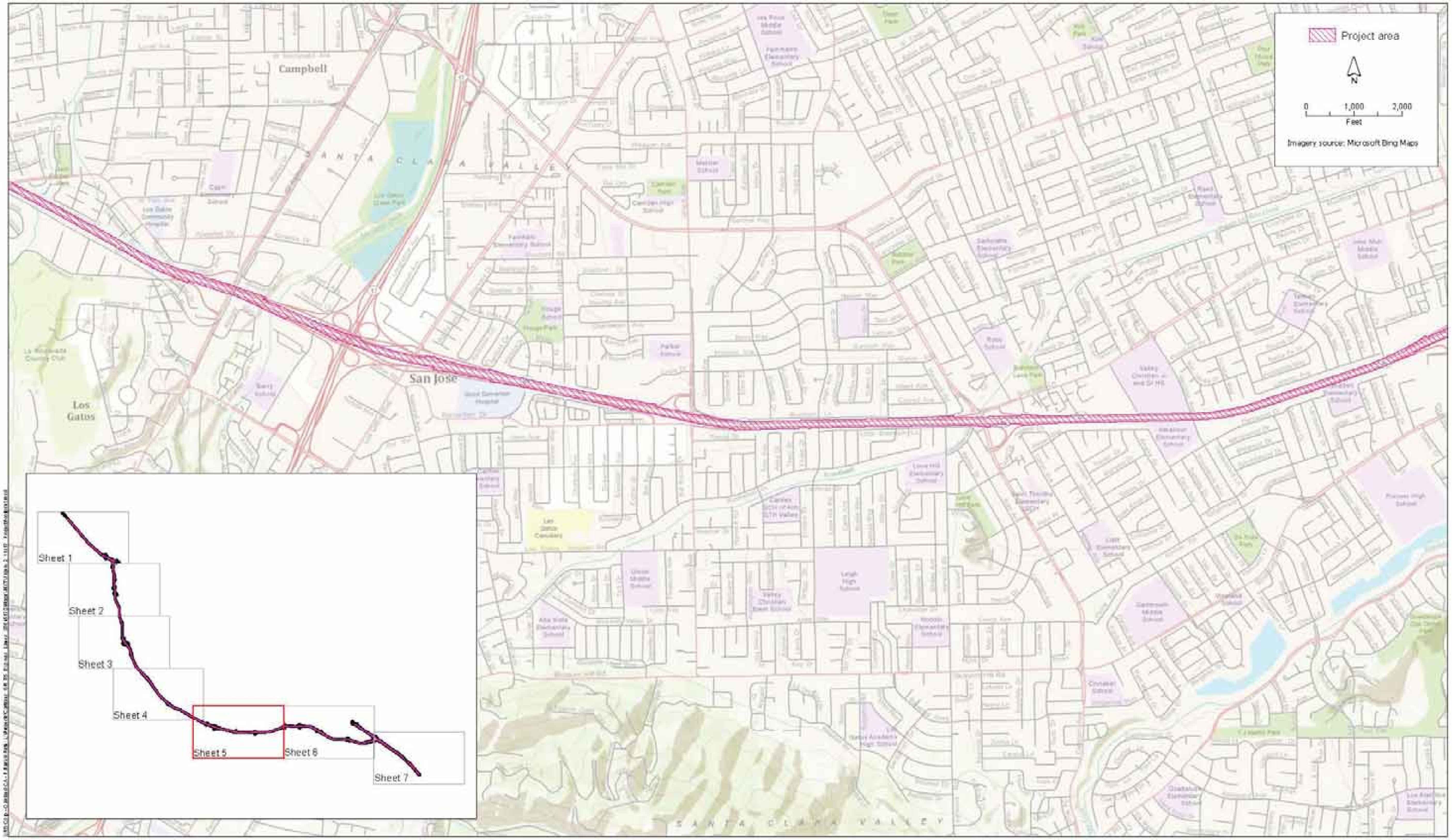
URS Caltrans
State Route 85 Express Lanes

Figure 2, Sheet 3
Project area



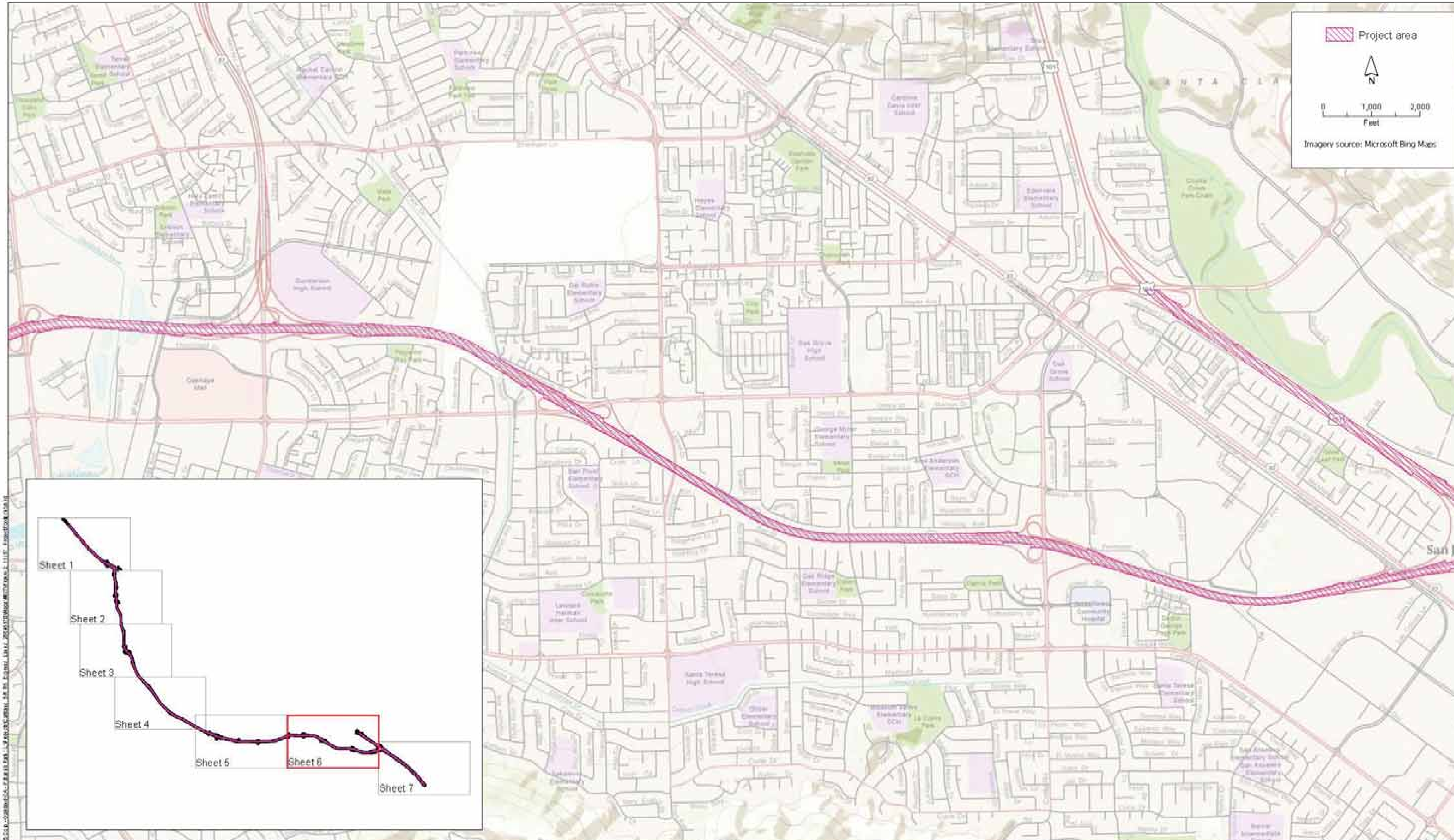
URS Caltrans
State Route 85 Express Lanes

Figure 2, Sheet 4
Project area



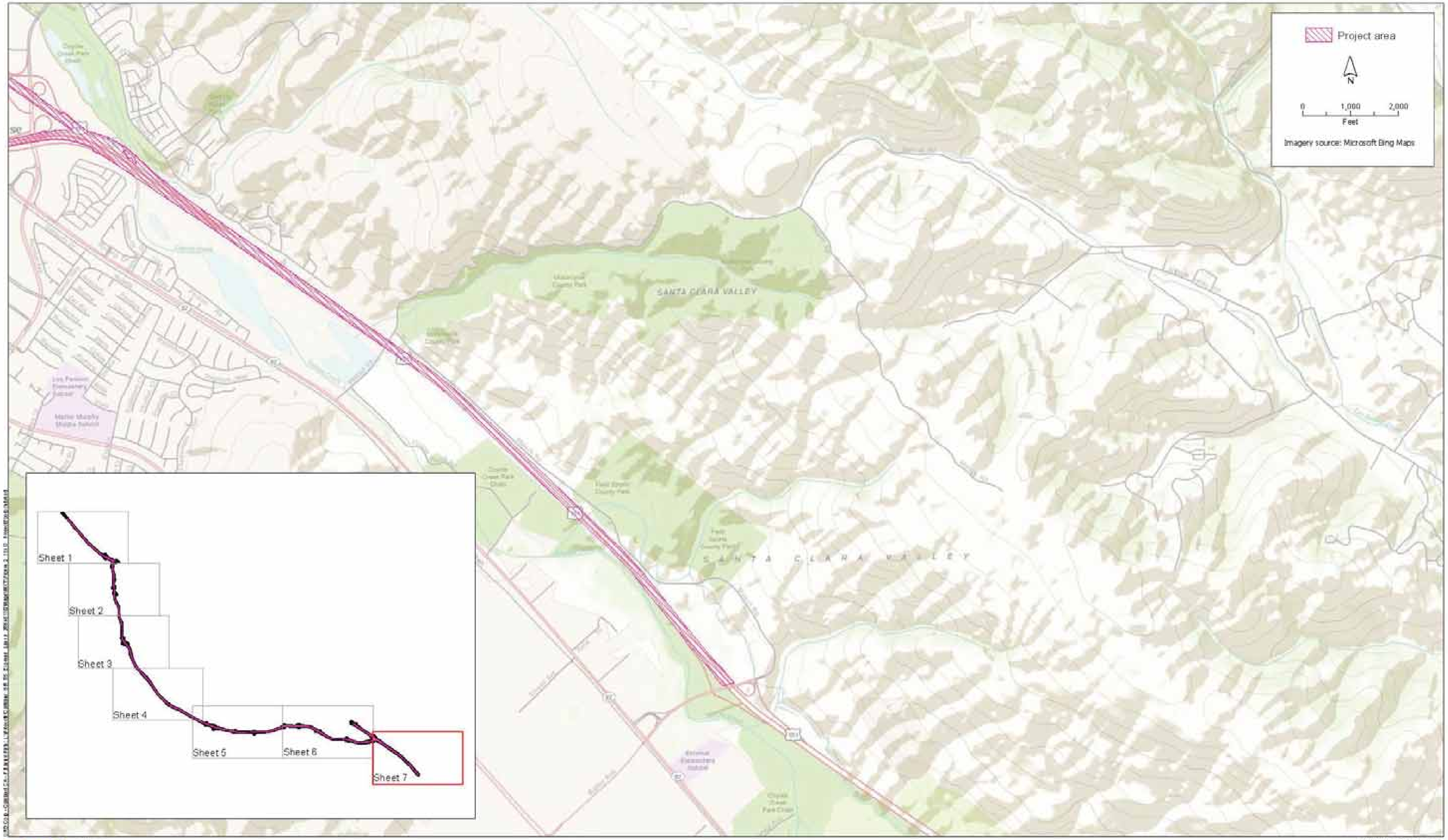
Caltrans
State Route 85 Express Lanes

Figure 2, Sheet 5
Project area



URS Caltrans
State Route 85 Express Lanes

Figure 2, Sheet 6
Project area



URS Caltrans
State Route 85 Express Lanes

Figure 2 Sheet 7
Project area

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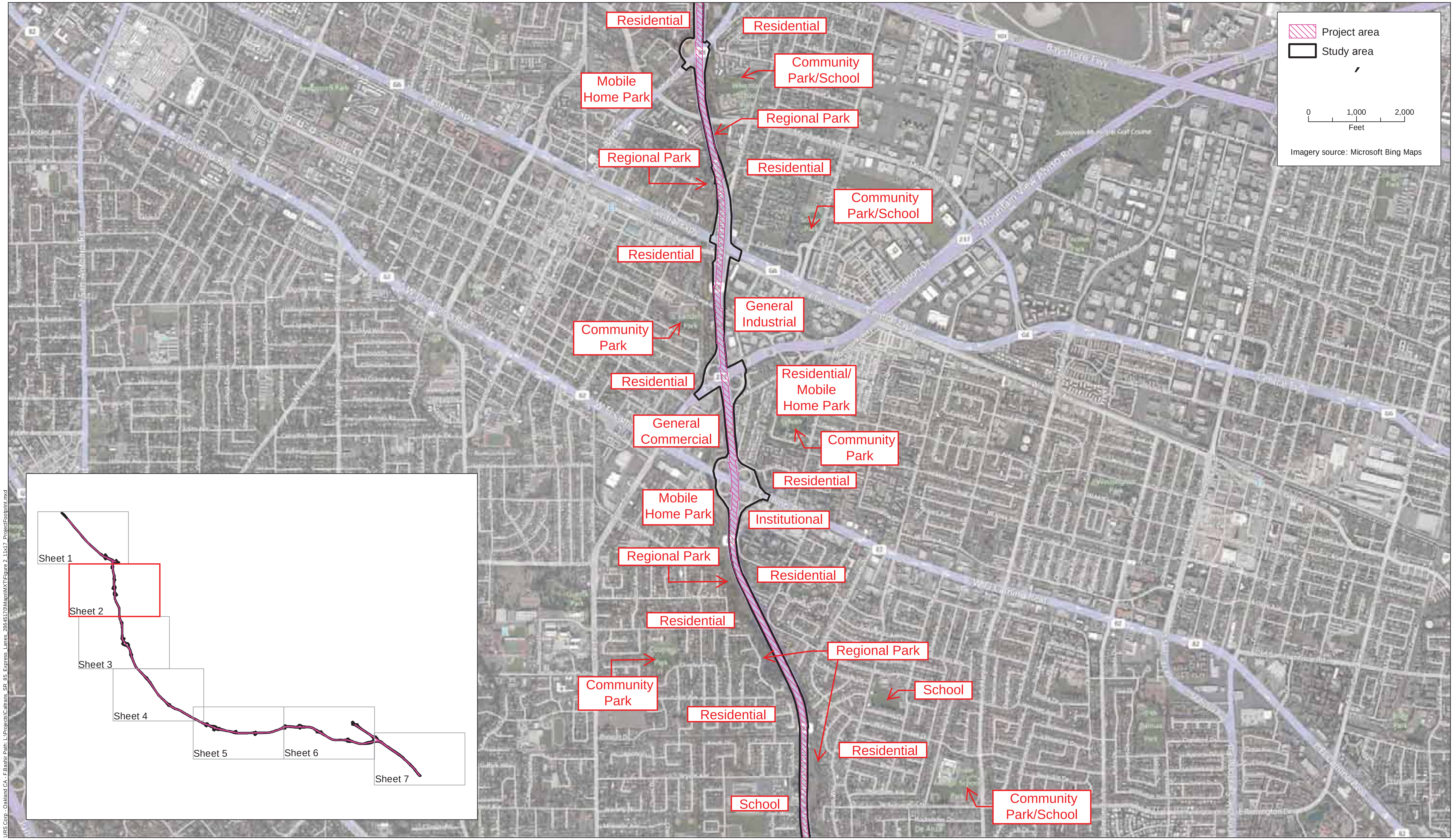
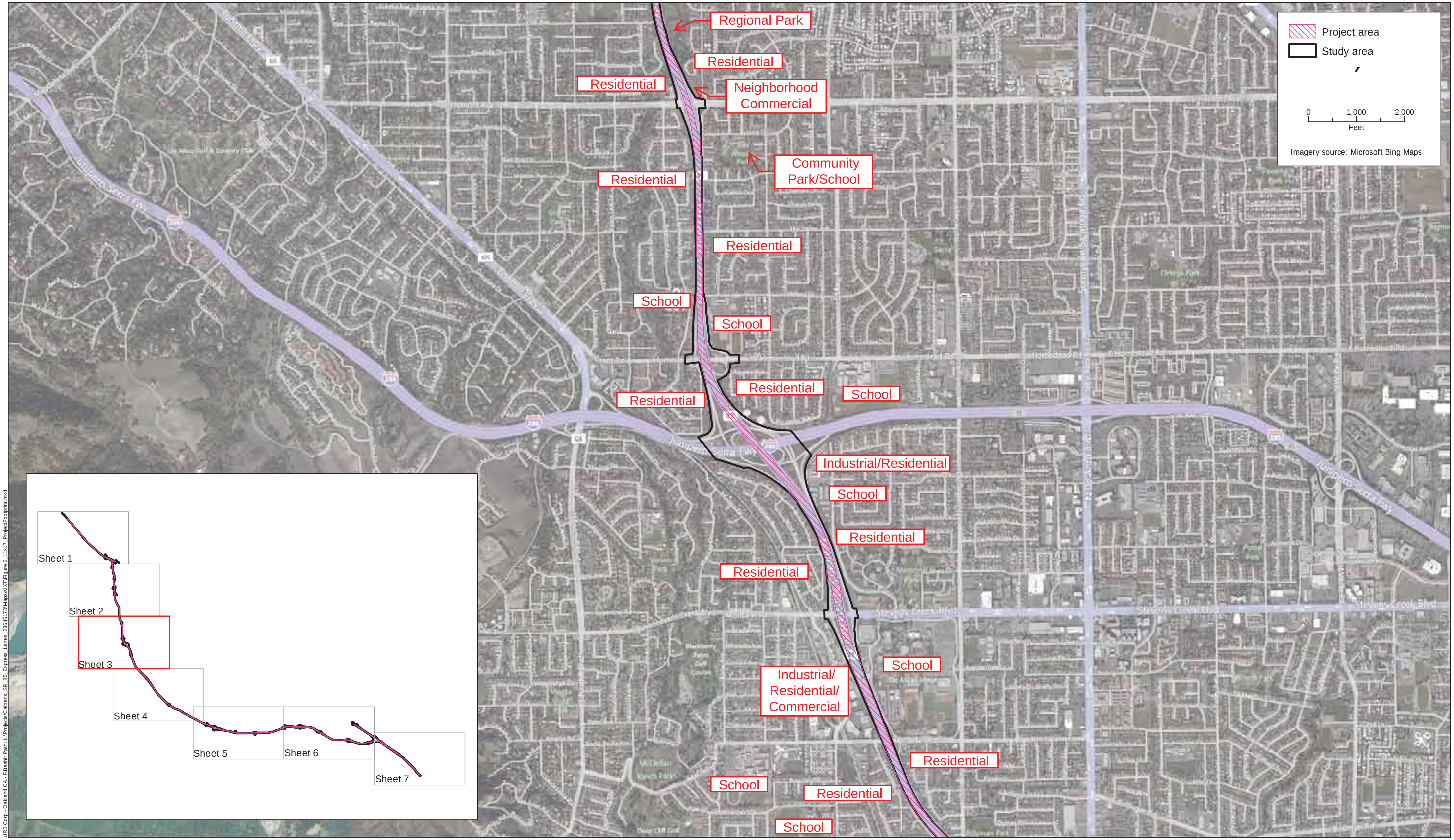
State Route 85 Express Lanes

Figure 2, Sheet 1
Project area land use



Caltrans
State Route 85 Express Lanes

Figure 2, Sheet 2
Project area land use



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State Route 85 Express Lanes

Figure 2,Sheet 3
Project area land use

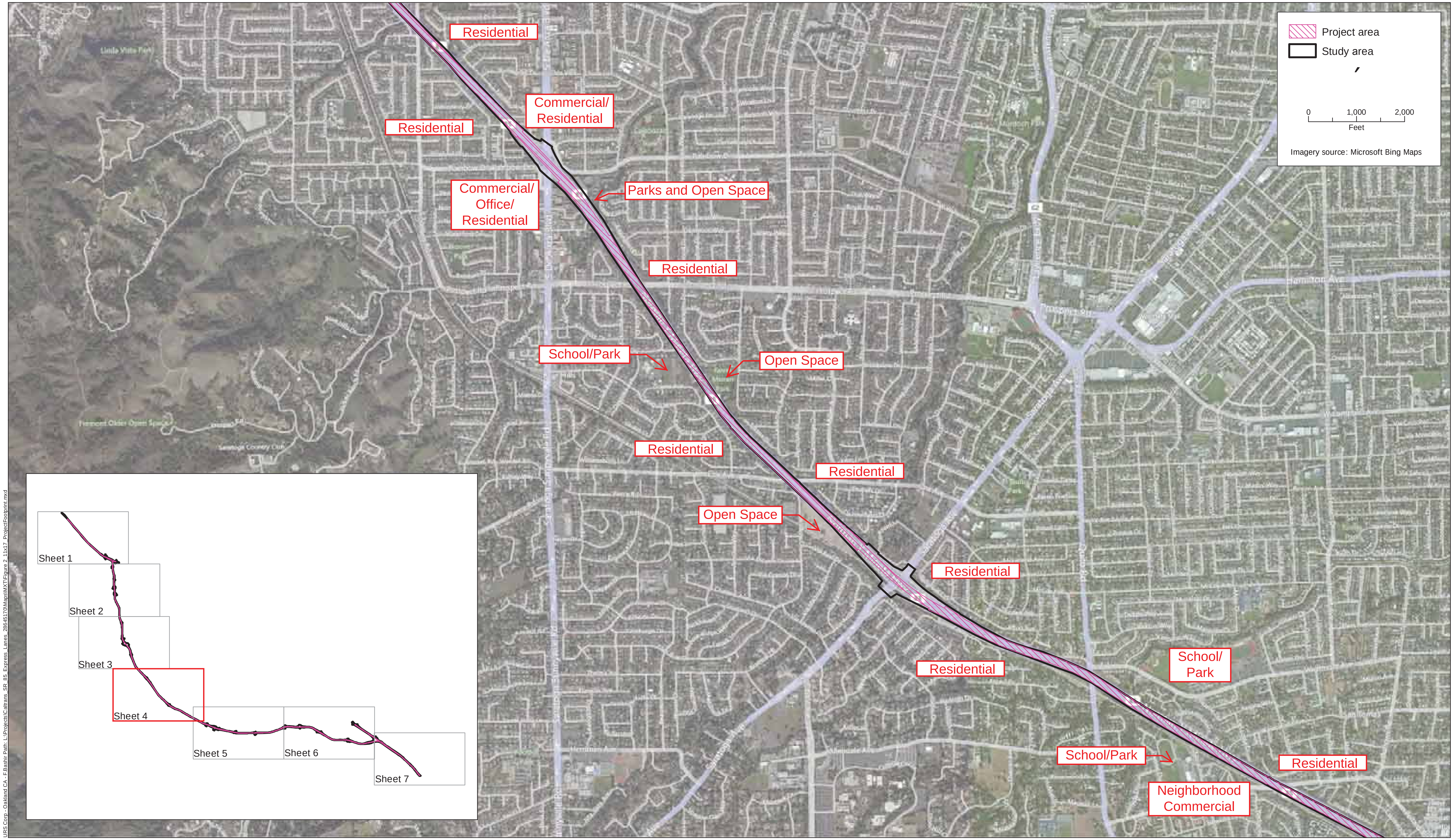

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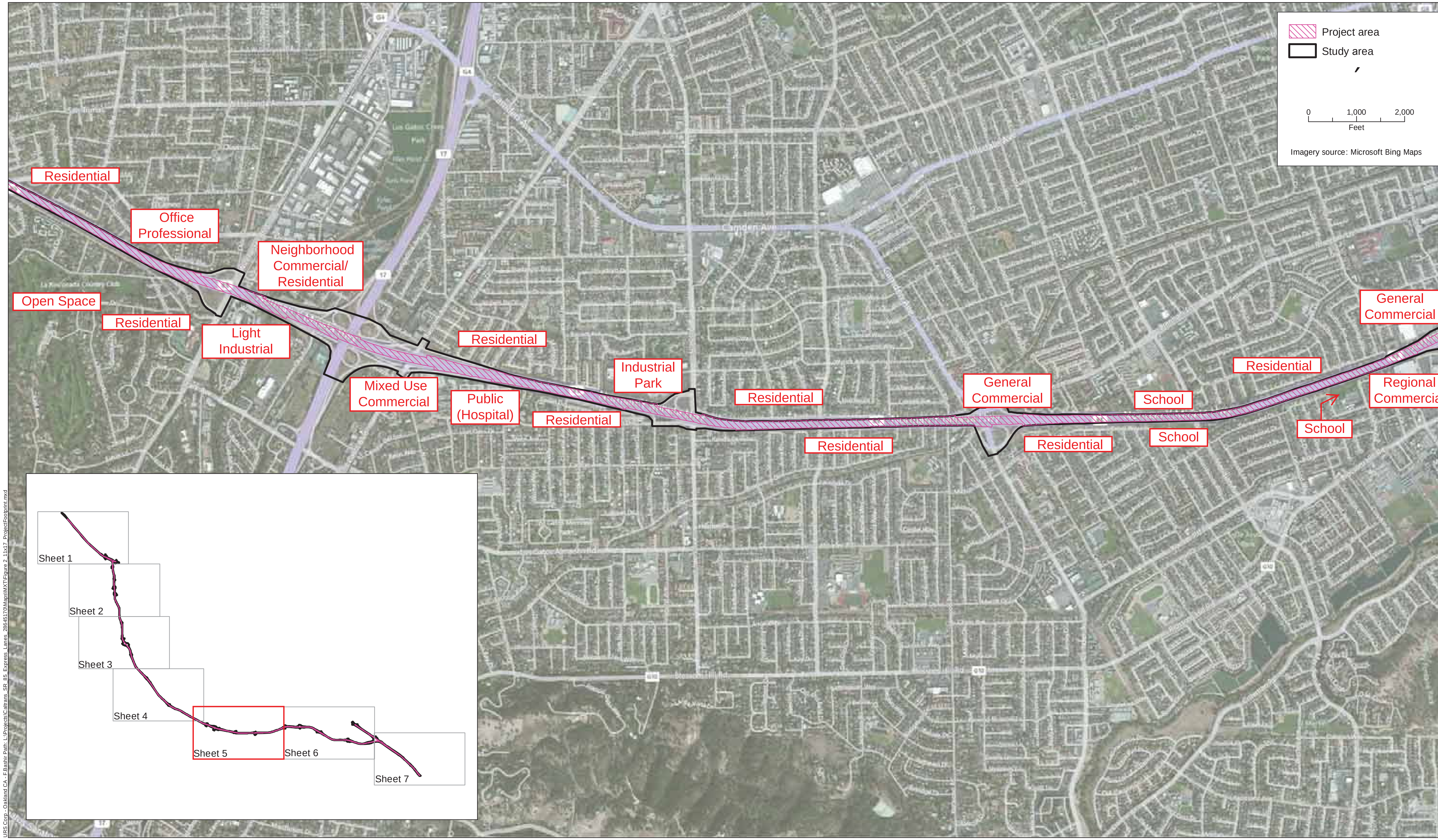
Figure 2,Sheet 4
Project area land use



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State Route 85 Express Lanes

Figure 2, Sheet 5
Project area land use

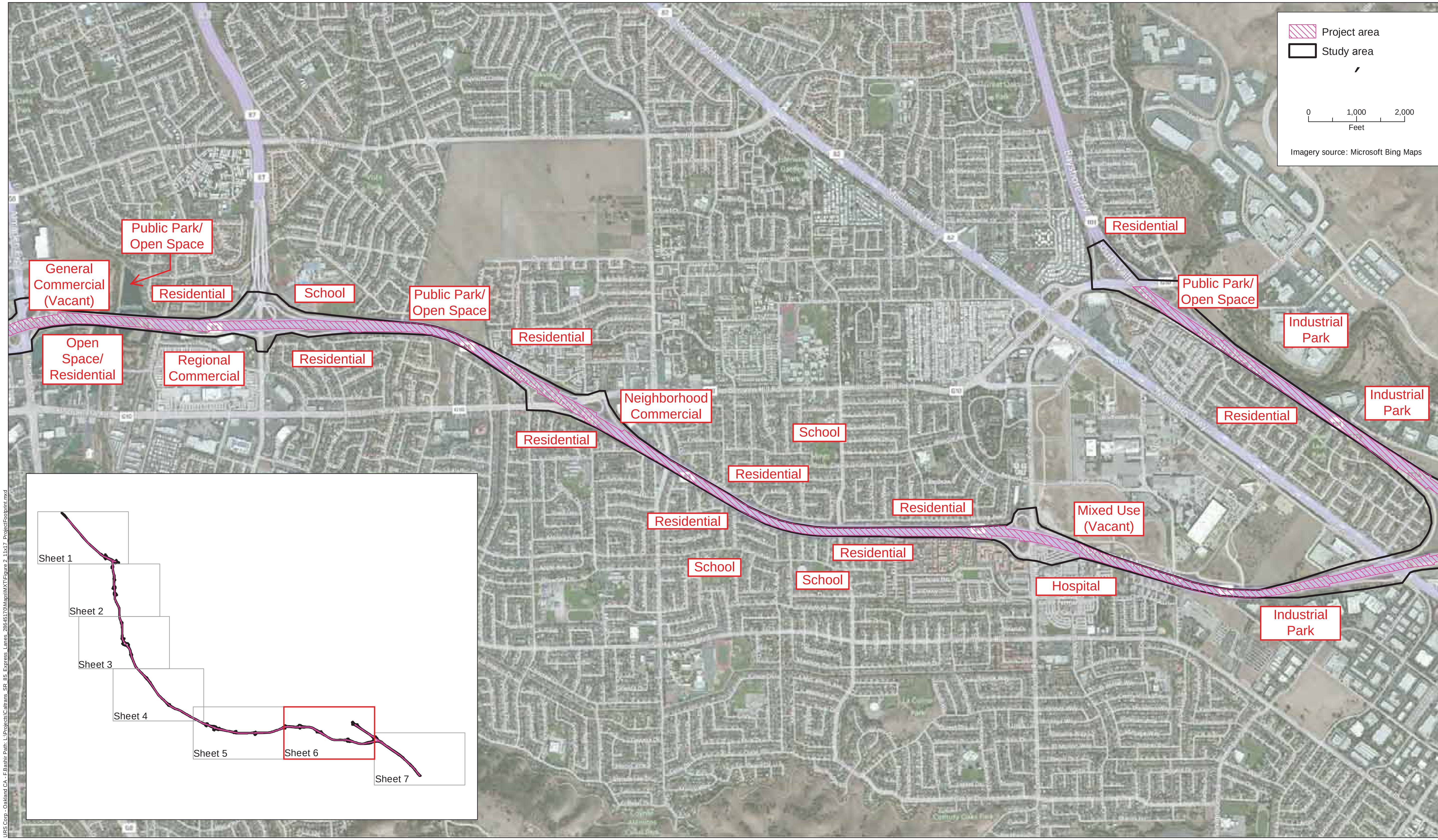
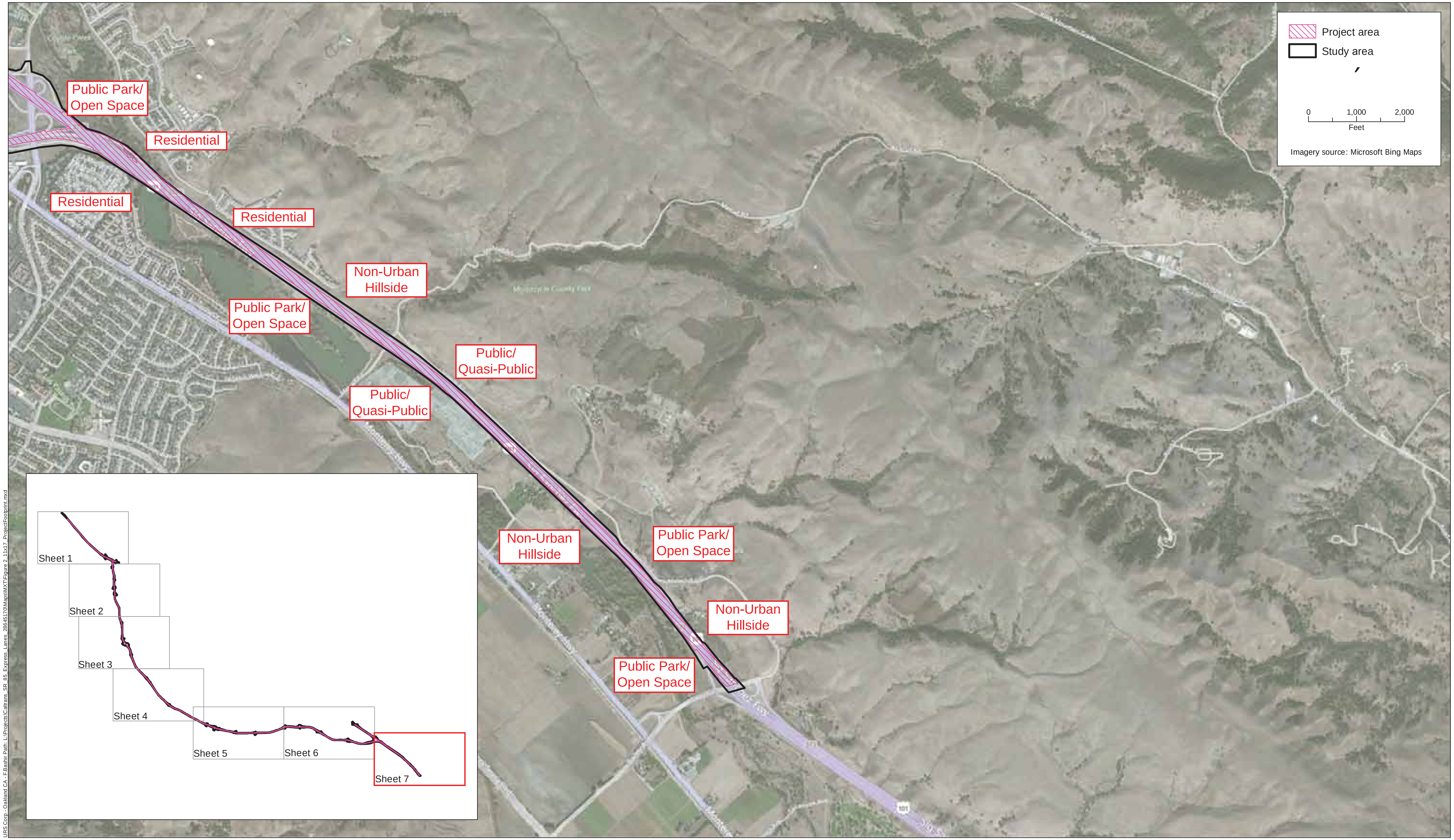


Figure 2,Sheet 6
Project area land use



URS

Caltrans
State Route 85 Express Lanes

Figure 2,Sheet 7
Project area land use