

Appendix A
**Emissions of Criteria Pollutants and Toxic Air
Contaminants**

This Appendix will discuss the procedure to develop the emission inventories for the baselines (CEQA and NEPA) and the Alternatives in 2035 for criteria pollutants and toxic air contaminants (TAC) from traffic operation and construction emissions from the I-710. The emission inventories are necessary for conducting air quality modeling and health risk assessments in the project domain.

This Project will address/compare the air quality impacts of various alternative scenarios of the freeway design and traffic operation. The prime sources of emission will be the on-road vehicles and construction activities.

A.1 On-Road / Traffic Emissions

ENVIRON will use EMFAC2007 as the primary model for traffic related emissions. EMFAC2007 (short for Emission FACTor) is a computer model developed by CARB used for estimating emission rates for on-road mobile sources for calendar years from 1970 to 2040 operating in California. Federal Register release Vol. 73, No. 13 on January 18, 2008 also states that starting April 18, 2008, EMFAC2007 is required to be used statewide in all new regional emissions analyses and carbon monoxide (CO) hot-spot analyses for transportation conformity determinations in California.

The emissions from the on-road vehicles can be categorized in the following categories:

- Combustion Emissions (g/mile or g/hr (idling)): Combustion emissions (i.e., exhaust emissions) result from the combustion of fuel and are the main source of emissions for all pollutants. EMFAC has the capability to provide emission rates for user defined vehicle speeds.
- Tire Wear (g/mile) and Brake Wear (g/mile): EMFAC has the capability to provide particulate emissions from tires and brakes occurring as a result of operational wear. The total PM emissions for each vehicle category will be:

$$PM = PM_r + PM_t + PM_b$$

Where,

PM	=	Particulate matter emission factor (g/mile)
PM_r	=	Running emission factor for PM (g/mile)
PM_t	=	Tire wear emission factor for PM (g/mile)
PM_b	=	Break wear emission factor for PM (g/mile)

- Evaporative Running Loss Emissions (g/min): EMFAC also provides the evaporative hydrocarbon emissions emitted as a result of hot fuel vapor release during the operation of the vehicles. These emissions will be converted to (g/mile and g/hr) and added to their corresponding combustion emissions. The total hydrocarbon emissions for each vehicle category will be:

$$HC = HC_r + HC_{erl} \times 60 / S$$

Where,

HC	=	Hydrocarbons emission factor (g/mile)
HC_r	=	Running emission factor for HC (g/mile)
HC_{erl}	=	Evaporative running loss emission factor for HC (g/min)
S	=	Speed (mph)
60	=	Conversion factor from g/min to g/hr

EMFAC also provides starting emissions and other resting losses and evaporative emissions including hot soak emissions, partial day diurnal loss, multi day diurnal loss, partial day resting loss, multi day resting loss. These emissions will not be evaluated for this Project as the traffic on the freeway is assumed not to be at rest. Also, it should be noted that the particulate matter emissions evaluated using EMFAC are total PM emissions, and not speciated PM emissions.

A.1.1 EMFAC Data Requirements

The input data requirements for EMFAC model are presented in the following sections.

- Vehicle information:

Vehicle class: EMFAC divides the on-road fleet into 13 different vehicle classes (as shown in the Table below).

Table A1. Vehicle Classes Modeled in EMFAC2007				
Vehicle Class	Fuel Type	Code	Description	Weight Class (lbs)
1	Gas, Diesel, and Electric	PC	Passenger Cars	All
2	Gas, Diesel, and Electric	T1	Light-Duty Trucks	0-3750
3	Gas, Diesel	T2	Light-Duty Trucks	3751-5750
4	Gas, Diesel	T3	Medium-Duty Trucks	5751-8500
5	Gas, Diesel	T4	Light-Heavy-Duty	8501-10000
6	Gas, Diesel	T5	Light-Heavy-Duty	10001-14000
7	Gas, Diesel	T6	Medium-Heavy-Duty	14001-33000
8	Gas, Diesel	T7	Heavy-Heavy-Duty	33001-60000
9	Gas, Diesel	OB	Other Buses	All

Table A1. Vehicle Classes Modeled In EMFAC2007				
Vehicle Class	Fuel Type	Code	Description	Weight Class (lbs)
10	Diesel	UB	Urban Buses	All
11	Gas	MC	Motorcycles	All
12	Gas, Diesel	SB	School Buses	All
13	Gas, Diesel	MH	Motor Homes	All

Fuel type: Gasoline, Diesel and Electric, wherever applicable

Model year: All available vehicle model years for South Coast fleet will be used

Inspection and Maintenance (I/M) condition: Vehicular emissions increase with their age as a result of vehicle defects, mal-maintenance, and tampering. For the purpose of this project, default I&M program will be used.

Speed: Vehicular emissions are a function of the speed traveled, and follow a “U” shaped curve. Emissions per mile are highest at lower speeds and decrease with the increase in speed, reaching a minimum at speeds of 35-55 mph, depending on the vehicle type. As the speed increases beyond the range above, the emissions per mile again increase with speed. For the purpose of this project, emission modeling will be performed for vehicle speeds starting at idling (0 mph) and ranging up to maximum allowed design speed on the highway (70 mph) in the increments of 5 mph. However, only emissions factors for speeds estimated by the traffic model will be used in the calculations.

- Operation information:

Geographic area: As the project is located in the south coast region, emission modeling scenario will be based on South Coast Air Basin.

Calendar year: The calendar year dictates the available vehicle model years on the road, current control technology, and permissible emission levels for different vehicles/engines. For the purpose of this project, EMFAC emission modeling will be performed for the base year as well as the year of operation/completion.

Season: Annual average season will be used which represents an average of all the monthly inventories.

Temperature (-20 °F to 120 °F): For the purpose of this project, representative ambient temperature(s) will be researched depending on the section of the modeled freeway and will be used for the EMFAC modeling.

Relative Humidity (0% to 100%): An ambient relative humidity of 40% which is representative of the south coast air basin will be used for EMFAC modeling.

- Method: As the project domain is limited to the South Coast Air Basin, “Simple-Average” option will be used as the calculation method. “Simple-Average” method uses area

averaging to calculate averaged parameters for temperature, speed, relative humidity, and I/M.

- Modes: The model will be run in “Emfac” mode which generates emission factors in grams of pollutant emitted per vehicle activity (in grams/mile and grams/hr). Emfac mode also calculates a matrix of emission factors at specific values of temperature, relative humidity, and vehicle speed for each vehicle class/technology combination. The “Detailed Impact Rates (RTL)” option will be selected for EMFAC output which gives the most detailed output.
- Other inputs: Default values for all other inputs will be used.

A.1.2 Emission Rates

EMFAC model uses the above information to provide vehicular combustion emissions per activity (in grams/mile, grams/hour and grams/min). Additionally, the running emission factors for PM and hydrocarbons will be calculated for each vehicle category based on the above equations. The total emission inventory for each pollutant on every road segment will be calculated as follows:

$$EI_{Total} = \sum_{i=1}^n \left\{ \left[\sum_{s=1}^m EF_{is} \times Vol_{is} \times D_{is} \right] + (EF_{idling})_i \times IdVol_i \times T_i \right\}$$

Where:

EI_{Total}	=	Emissions inventory
EF_{is}	=	fleet specific emission factor for each speed category (g/mile)
EF_{idling}	=	fleet specific emission factor for idling (g/hour)
Vol_{is}	=	Moving traffic volume for each vehicle class and speed category
$IdVol_i$	=	Idling traffic volume for each vehicle category
D_{is}	=	Distance traveled on the highway (miles) for each vehicle class and speed category
T_i	=	Idling hours for each vehicle class (hours)
s	=	Vehicular Speed (mph)
i	=	Vehicle category

Adjustments to EMFAC2007 Emission Factors

As stated earlier in Section 3.1.1, since the last release of EMFAC, the following new regulations/other programs have been adopted/approved that will impact future emissions of heavy-duty trucks that travel on the I-710.

1. The CARB “Regulation to Control Emissions from In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks”
(<http://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm>)³⁶
 - o Phase 1 : by Dec 31, 2009, all pre-1994 engine model years (MYs) drayage trucks need to be retired or replaced with 1994 or newer engines AND all 1994 – 2003 engine MY will need to demonstrate an 85% reduction in PM emissions
 - o Phase 2 : after Dec 31, 2013, all drayage trucks will be required to further reduce emission to meet 2007 engine emission standards
2. The Clean Trucks Program that is part of the approved POLA/POLB Clean Air Action Plan (CAAP) (<http://www.cleanairactionplan.org/strategies/cleantrucks/default.asp>)
 - o Oct. 1, 2008: All pre-model 1989 engine MY are banned from entering the Port
 - o Jan 1, 2010: All 1989 – 2003 engine model years are banned from entering the Port
 - o Jan 1, 2012: Only trucks meeting the 2007 or better federal emissions standards will be permitted to operate at the Port
3. The CARB “Truck and Bus Regulation”, adopted December 2008
(<http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>)
 - o Requirements
 - Owners must reduce emissions by upgrading vehicles one of three ways
 - PM retrofits and replace vehicles (or engines) according to a prescribed schedule
 - PM retrofits to a minimum number of engines each year and to replace a minimum number of older engines with newer engines meeting the 2010 engine standards
 - Meet the fleet average based on the fleet owners prerogative using PM and NOX retrofits
 - o Compliance Dates
 - PM requirements begin Jan 1, 2011
 - NOx reductions starting Jan 1, 2013
 - For fleets smaller than 3 vehicles performance requirements are expected by Jan 1, 2014
 - By Jan 1, 2023 all vehicles must have a 2010 model year engine or equivalent

The present version of EMFAC model does not account for emission reductions for medium heavy-duty and heavy heavy-duty trucks including port trucks for the above regulations/ programs. Therefore, the emission factors for medium heavy-duty and heavy heavy-duty trucks

³⁶ Adopted on October 12, 2008. <http://www.arb.ca.gov/regact/2007/drayage07/drayage07.htm>

from EMFAC model will be adjusted to quantify the reductions for the above regulations/programs as discussed below.

The CARB “Regulation to Control Emissions from In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks” (Drayage Truck rule) requires that all drayage trucks further reduce emission to meet 2007 engine emission standards after December 31, 2013. The Clean Truck Program of POLA/POLB (Clean Truck Program or CTP) requires that only trucks meeting the 2007 or better federal emissions standards will be permitted to operate at the Port starting January 1, 2012. Therefore, the Clean Truck Program has stricter requirements as compared to the ARB Drayage truck rule and any adjustment made to the EMFAC emission factors to account for the Clean Truck Program will essentially also cover the emission reductions on account of the ARB Drayage Truck rule.

Adjustment to EMFAC Emission Factor to Account for Clean Truck Program

Emission factors from EMFAC will be adjusted for the Clean Truck Program by adjusting the population distribution of engine model years modeled in EMFAC2007. The fleet age distribution, developed by StarCrest, which accounted for the fleet turnover due to the CTP will be used. This fleet age distribution has been used by the Ports for developing various emission inventories. The following steps will be used to make this adjustment:

- The default emission factors will be obtained for each model year that exists within the 2035 fleet, omitting engine model years banned from entering the port due to the CTP.
- The emission factor for a given model year will then be weighted by the new fleet age distribution to get the weighted emission factor for that model year. For example if the fleet age distribution shows that 5% of the fleet in 2035 will be 2008 model year trucks, the emission factor for 2008 will be multiplied by 5%
- Finally, the weighted emission factors will be added to obtain an adjusted emission factor for 2035.

Adjustment to EMFAC Emission Factor to Account for Truck and Bus Regulation

To adjust emission factors for the non-port medium- and heavy-duty truck emission factors in the calendar year 2035 the following approach will be used. The Statewide truck and Bus rule requires public fleets to achieve reductions in fleet emissions for both PM₁₀ and NO_x beginning in December of 2009. The fleet emission target rates become progressively more stringent for every compliance year (2013 – 2023). It was assumed that the fleet target emission rates indicated for 2023 would be applicable in 2035 due to a lack of any other guidance. The emission factors for medium- and heavy-duty fleets in the calendar year 2035 were adjusted using the following steps:

- First, the medium- and heavy-duty fleet mass emissions will be generated by running EMFAC in the “burden” mode.

- Mass emissions will then be converted into an emission factor using the total vehicle miles travelled per day for both medium- and heavy-duty diesel fleets to obtain a default emission factor for the fleet.
- As the next step, a “control factor” will be developed which is the Statewide Truck and Bus 2023 target fleet emission factor divided by the EMFAC default emission factor. This control factor will be applied to EMFAC speed dependent emission factors obtained for the calendar year 2035 to obtain the “adjusted emission factor.”

A.1.3 Road Dust Emissions³⁷

Road dust is generated as a result of re-suspension of loose particulate material from the surface of the road as a result of movement of vehicles and wind flow. As the movement of vehicles is the over-riding factor in highways, the re-suspension due to wind flow can be ignored. Road dust emissions are primarily a factor of the amount of re-suspendable particulate matter available on the road surface, fraction of heavy vehicle traffic, and the traffic flow volume on the road. Road dust is both generated as a result of physical abrasion of the road surface from the movement of vehicles, as well as application of snow and ice control materials, mud/dirt carryout from construction activities in the area, and deposition from wind and/or water erosion of surrounding unstabilized areas and industrial processes. As the Southern California region does not experience frozen precipitation, this Protocol will not evaluate the effect of application of snow and ice control materials.

During the initial calculations of entrained paved road dust for the 2035 Alternatives using the traditional method described below, it became apparent that the resulting 2035 emissions were very inconsistent with the currently-approved State Implementation Plan (SIP) and the 2007 Air Quality Management Plan (AQMP). This is a result, in part, of the scale and impact of the I-710 Corridor Project on regional traffic and emissions. To address this large inconsistency, a slightly modified version of the SCAQMD’s AQMP paved road dust methodology will be used for the I-710 analyses, which directly affects the emissions on freeways in future years (such as the 2035 analysis year). The methodology and the estimated emissions are summarized in Appendix G of the Report.

Except for freeways in 2035, the re-entrained road dust particulate emissions (PM₁₀ and PM_{2.5}) from traffic movement (traffic operation emissions) will be computed using the following equation³⁸:

$$PM_{RD} = \left\{ \left[k \times \left(\frac{sL}{2} \right)^{0.65} \times \left(\frac{W}{3} \right)^{1.5} - C \right] \times \left[1 - \frac{P}{4N} \right] \right\} \times Vol$$

where:

PM_{RD} = Particulate emissions from road dust,
 Vol = Traffic volume,
 k = Particle size multiplier for particle size (g/mi), (Table A2),

³⁷ Adopted from AP 42, Volume 1, Fifth Edition, Chapter 13, Section 2.1 (Paved Roads)

³⁸ The equation refers to emissions due to freely flowing (not stop-and-go) traffic at constant speed on level roads.

- SL* = Road surface silt loading (g/m^2),³⁹
W = Average weight (tons) of the vehicles traveling the road, and
C = Emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear. (Table A4)
P = Number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period, and
N = Number of days in the averaging period (e.g., 365 for annual, 91 for seasonal, 30 for monthly)

Table A2. Particle Size Multipliers (k) For Paved Road Equation	
Size range	Particle Size Multiplier, k
	g/mi
PM _{2.5}	1.1
PM ₁₀	7.3

Table A3. Emission Factor for 1980's Vehicle Fleet Exhaust, Brake Wear and Tire Wear (C)	
Particle Size Range	Emission Factor for Exhaust, Brake Wear and Tire Wear, C
	g/mi
PM _{2.5}	0.1617
PM ₁₀	0.2119

Traffic Data

As mentioned earlier, traffic volumes and speeds are constituents of the data needed to calculate the vehicle emissions. The traffic volumes and speeds will be obtained from the following sources:

The I-710 Traffic Model (based on the SCAG Transportation Demand Model) will be run by another I-710 project team member for the year 2008 and 2035 to estimate the traffic volumes and speeds for the various traffic links in the SCAG network. The traffic volumes and speeds from the I-710 Traffic Model run (also referred to as the raw model data) will be used to estimate the mass emissions of various criteria pollutants for the SCAB and specific sub-areas within the Basin.

The I-710 Traffic Model raw model data will be adjusted/calibrated using actual traffic counts at specific locations on the I-710 to provide more accurate traffic volumes and speeds (referred to as post processed data). This post processed data will be available only for the traffic links on the I-710 freeway and will be used for estimating the emissions for I-710 freeway links, which will be further used for estimating the air quality impacts and the health risks.

³⁹ A silt loading factor of 0.022 g/m^2 was approved by Caltrans for this Project.

Toxic Air Contaminant (TAC) Emissions

EMFAC 2007 will also be used as the primary model for traffic related TAC emissions. TACs are components of TOG emissions (gas-phase TACs) and PM₁₀/PM_{2.5} emissions (particle-phase TACs). Emissions of individual TACs will be calculated by applying speciation profiles from the California Air Resources Board's (CARB) speciation database (<http://www.arb.ca.gov/ei/speciate/speciate.htm>) to the TOG and PM₁₀/PM_{2.5} emissions (Table A4). Emissions for the six priority MSATs, for all traffic operational activities and project roadways that experience changes in traffic due to the project will be calculated. PM emissions from vehicular tire and brake wear will also be speciated into their individual TAC components for use in the cancer, chronic, and acute HRA analysis. If the analysis ultimately includes additional TACs beyond the 6 priority MSATs, emissions of TACs that are found in the CARB's speciation profiles will be quantified in a similar manner as stated above.

A.2 Off-Road / Construction Emissions

To calculate the emissions from construction activities, Caltrans recommended a spreadsheet model (Road Construction Emissions Model Version 6.3-2) used by the Sacramento Metropolitan Air Quality Management District (SMAQMD), hereafter referred to as the Model. This model is a generalized linear transportation model that accepts user-defined values such as the project length, project type, total duration of the project, estimated number of acres disturbed per day, etc. and calculates the estimated average and peak daily emissions per construction activity. The pollutants include: ROG, CO, NOx, PM₁₀ (Total), PM₁₀ (Exhaust), PM₁₀ (Fugitive Dust), PM_{2.5} (Total), PM_{2.5} (Exhaust), PM_{2.5} (Fugitive Dust) and CO₂. The Model was designed for use within the SMAQMD and as such includes both on-road vehicles and off-road equipment emission factors specific to that region. For this Project, the emission factors in the Model will be substituted with the EMFAC and OFFROAD emission factors specific to the South Coast Air Basin.

Table A4. Summary of emissions factors and speciation profiles used to develop the TAC emissions inventory for the I-710 Corridor EIR/EIS				
Sources	Emission Type	TOG and PM Emissions Factors	TAC Speciation	Notes
On-road catalyst-equipped gasoline vehicles	Exhaust TOG	EMFAC2007 v2.3	ARB TOG profile # 2108 (2008) and # 2120 (2035)	Different profiles for year 2008 vs. 2035 exhaust TOG emissions
	Exhaust PM	EMFAC2007 v2.3	ARB PM profile # 400	
	Evaporative TOG	EMFAC2007 v2.3	ARB profile # 660	Profile for liquid gasoline 1996 SSD etoh 2.0% (MTBE phaseout)
	Brake PM	EMFAC2007 v2.3	ARB profile # 473	Most applicable profile (used in recent Port EIR HRA)
	Tire PM	EMFAC2007 v2.3	ARB profile # 472	Most applicable profile (used in recent Port EIR HRA)
On-road non-catalyst equipped gasoline vehicles	Exhaust TOG	EMFAC2007 v2.3	ARB TOG profile 665	Same profile for 2008 & 2035 - note there are almost no non-cat vehicles in 2035
	Exhaust PM	EMFAC2007 v2.3	ARB PM profile 399	
	Evaporative TOG	EMFAC2007 v2.3	ARB profile # 660	Profile for liquid gasoline 1996 SSD etoh 2.0% (MTBE phaseout)
	Brake PM	EMFAC2007 v2.3	ARB profile # 473	Most applicable profile (used in recent Port EIR HRA)
	Tire PM	EMFAC2007 v2.3	ARB profile # 472	Most applicable profile (used in recent Port EIR HRA)
On-road diesel vehicles	Exhaust TOG	EMFAC2007 v2.3	ARB TOG profile #818	Speciation used ONLY for acute impacts. Use unspciated total DPM for cancer and chronic non-cancer health impacts
	Exhaust PM	EMFAC2007 v2.3	ARB PM profile #425	
	Evaporative TOG	Assume negligible	Assume negligible	Evaporative emissions from diesel vehicles are low to non-existent
	Brake PM	EMFAC2007 v2.3	ARB profile 473	Most applicable profile (used in recent Port EIR HRA)
	Tire PM	EMFAC2007 v2.3	ARB profile 472	Most applicable profile (used in recent Port EIR HRA)
Off-road diesel construction equipment	Exhaust TOG	OFFROAD2007	ARB TOG profile #818	Speciation used ONLY for acute impacts. Use unspciated total DPM for cancer and chronic non-cancer health impacts
	Exhaust PM	OFFROAD2007	ARB PM profile #425	
	Evaporative TOG	Assume negligible	Assume negligible	
	Brake/Tire PM	Not considered - assume small	N/A	

Appendix B

Emissions of Greenhouse Gases

Greenhouse Gases (GHG) are gases that are known to trap heat in the atmosphere. Some GHGs, such as water vapor, carbon dioxide, methane, nitrous oxide, and ozone, occur naturally in the atmosphere. Certain human activities, however, add to the levels of these naturally occurring gases and contribute other, non-naturally occurring greenhouse gases, such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

Six GHGs are the focus of California and international regulatory efforts (e.g., the Kyoto Protocol), each of which is listed in Table B1, along with its major human-activity sources and respective “global warming potential” (GWP). Because of variation in their physical properties, different GHGs have different impacts on climate. The strength of a GHG’s climate impact is expressed in terms of its GWP, which is measured relative to carbon dioxide that has a reference point of one, and is projected over a specific time horizon (typically, one hundred years). Methane, for example, is 21 times as potent a global warming gas as carbon dioxide, while nitrous oxide is 310 times as potent. Emissions of different GHGs are combined by weighting emissions of individual GHGs by their respective global warming potentials and summing across all GHGs to express the total in terms of “CO₂ equivalents,” or CO₂e.

Table B1. Different GHGs, Major Sources, and Global Warming Potential		
GHG	Major Sources	Global Warming Potential⁴⁰
Carbon dioxide (CO ₂)	Fossil fuel combustion, certain manufacturing processes, and waste combustion	1
Methane (CH ₄)	Agriculture, waste (e.g. landfill gas), gas distribution, and coal mining	21
Nitrous oxide (N ₂ O)	Agriculture, transport, and nitric and adipic acid production	310
Hydrofluorocarbons	Refrigerants, foam blowing, and fire fighting	140 - 9,800
Perfluorocarbons	Electronics manufacturing, refrigerants, and aluminum smelting	4,800 - 9,200
Sulfur hexafluoride (SF ₆)	High voltage switch gear, magnesium smelting, gas-filled training shoes	23,900

The air quality analysis for this I-710 Corridor Study will include an estimate of direct GHG emissions that would result from traffic operational activities of the Project. Sources that may directly contribute to GHG releases considered in the analysis are identical to those included in this subsection for criteria pollutant impacts.

The estimation of GHG emissions is a very dynamic and evolving field and the approaches used to calculate the GHG emissions are likewise evolving. Based on literature review, ENVIRON identified the following three methodologies (among many) for discussion in this Protocol.

1. **California Climate Action Registry’s General Reporting Protocol, version 3.1, January, 2009 (CCAR GRP):** Tables C.4 and C.5 of CCAR GRP provides the emission factors to calculate the GHG emissions from various mobile sources (both off-road and

40 Second Assessment Report (SAR) of the Intergovernmental Panel on Climate Change, 1995

on-road mobile sources). One drawback of the emission factors provided in the CCAR GRP is that the emission factors for CO₂ for the on-road mobile sources and for CO₂, CH₄, and N₂O for the off-road mobile sources are in the units of kilograms of GHG per gallon of fuel (kg/gal). Normally, the activity data for off-road mobile sources is provided in terms of horsepower-hour (hp-hr) and that of on-road mobile sources is provided in terms of miles traveled. Therefore, the emission factors from the CCAR GRP need to be converted from kg/gal to kg/hp-hr for the off-road mobile sources and to kg/miles for the on-road mobile sources to estimate the GHG emissions. These conversions can be done using brake specific fuel consumption and fuel density data for the off-road sources and the fuel efficiency data (miles/gallon) for the on-road sources. These data are available from various sources and the most accurate data applicable to the Project will be used to convert the emission factors to desired units.

2. **California Air Resources Board (CARB) GHG Emission Inventory Documents:** The CARB has developed a statewide GHG emission inventory for both stationary and mobile sources. The CARB has documented the GHG emission estimation methodology used for the mobile sources and has plans to release a technical support document. The technical support document was released by CARB in May 2009. The drawback of this method is that the emission factors have been developed on a statewide basis and for the I-710 project, a regional or local emission factors might be different.
3. **EMFAC 2007 and OFFROAD 2007 Models:** The EMFAC 2007 and OFFROAD 2007 models also provide the emission factors for CH₄ and N₂O. However, CARB has an advisory on its website that the emission factors from these models are not consistent with the methodology used by CARB in developing its GHG inventory.

At this time, ENVIRON proposes to calculate the GHG emissions associated with the Project by using a combination of the methodologies provided in the California Climate Action Registry's General Reporting Protocol, version 3.1 (CCAR 2009) and fuel consumption/efficiency data obtained from EMFAC 2007 and OFFROAD 2007 models as presented in Table B2 below. Please note that the proposed methodology may change as new emission factors/guidance documents become available. Note that the emissions of GHGs from construction activities will be estimated only if requested by the lead agency.

Table B2. GHG Emission Estimation Methodology		
Emission Source	Project Phase	Emission Estimation Methodology
Off-road construction equipment	Construction Phase Only	Emission factors from the CCAR GRP will be used for CO ₂ , CH ₄ and N ₂ O. The emission factors from the GRP are in units of kilograms of GHG per gallon of fuel (kg/gal). These emission factors will be converted to units of g/hp-hr by using default values of brake-specific fuel consumption (BSFC) by equipment horsepower category from OFFROAD2007 and a fuel density value from the GRP.
Construction worker commute vehicles	Construction Phase Only	CO ₂ emission factors from CCAR GRP in units of kilograms of GHG per gallon of fuel (kg/gal) will be used to calculate CO ₂ emissions. This emission factor will be converted to units of grams per mile (g/mi) by using the fuel efficiency data from the EMFAC 2007 model. Emission factors for CH ₄ and N ₂ O from the CCAR GRP in units of grams per mile (g/mi) will be used to calculate the emissions of CH ₄ and N ₂ O.
Passenger Vehicles	Traffic Operation Phase Only	
On-road trucks	Both Construction and Traffic Operation Phases	

The total GHG emissions from the project will be reported in “CO₂e” by multiplying the CH₄ and N₂O emissions with the respective GWP.

Off-road Construction Equipment

Emission factors from the CCAR GRP (presented in Tables B3 and B4) will be used for estimating CO₂, CH₄ and N₂O emissions. The emission factors from the GRP are in units of kilograms of GHG per gallon of fuel (kg/gal). These emission factors will be converted to units of g/hp-hr by using default values of brake-specific fuel consumption (BSFC) by equipment horsepower category (obtained from OFFROAD2007) and a fuel density value from the GRP. The following equations will be used to estimate the GHG emissions from the off-road construction equipment.

$$\text{Emission factor (g/hp-hr)} = \text{Emission Factor (Kg/gal)} \times \text{BSFC (lb/hp-hr)} \times 1 / \text{Fuel Density (lb/gal)} \times 1000 \text{ (g/kg)} \quad \text{.....B-1}$$

$$\text{GHG emissions (metric tons/year)} = \text{Emission Factor (g/hp-hr)} \times \text{Activity (hp-hr/year)} \times 0.000001 \text{ (metric tons/g)} \quad \text{..... B-2}$$

On-Road Mobile Sources

CO₂ emission factors from CCAR GRP (Table B3) in units of kilograms of GHG per gallon of fuel (kg/gal) will be used to calculate CO₂ emissions. This emission factor will be converted to units of grams per mile (g/mi) by using the fuel efficiency data from the EMFAC 2007 model as per equation B-3 below. Emission factors for CH₄ and N₂O from the CCAR GRP (Table B5) in units of grams per mile (g/mi) will be used to calculate the emissions of CH₄ and N₂O. The GHG emissions will be calculated using equation B-4

$$\text{Emission factor (g/miles)} = \text{Emission Factor (Kg/gal)} \times \frac{1}{\text{Fuel Efficiency (miles/gallon)}} \times 1000 \text{ (g/kg)} \quad \text{.....B-3}$$

$$\text{GHG emissions (metric tons/year)} = \text{Emission Factor (g/miles)} \times \text{Activity (miles/year)} \times 0.000001 \text{ (metric tons/g)} \quad \text{..... B-4}$$

Conversion to “CO₂e”

The total GHG emissions from the project will be reported in CO₂ equivalents (CO₂e) by multiplying the CH₄ and N₂O emissions with the respective GWP presented in Table B1. Equation B-6 will be used to calculate the emissions in CO₂e.

$$\begin{aligned} \text{GHG emissions (metric tons CO}_2\text{e /year)} &= \text{CO}_2 \text{ Emissions (metric tons/year)} \\ &+ \text{CH}_4 \text{ emissions (metric tons/year)} * \text{GWP}_{\text{CH}_4} \\ &+ \text{N}_2\text{O emissions (metric tons/year)} * \text{GWP}_{\text{N}_2\text{O}} \\ &\text{.....B-6} \end{aligned}$$

Table B3. Carbon Dioxide Emission Factors for Transport Fuels

Fuel	Carbon Content	Heat Content	Fraction Oxidized	CO ₂ Emission Factor
	kg C/MMBtu	MMBtu/ barrel		kg CO ₂ /gallon
Aviation Gasoline	18.87	5.048	1	8.32
Biodiesel (B100)* +	NA	NA	1	9.46
Crude Oil	20.33	5.8	1	10.29
Diesel	19.95	5.825	1	10.15
Ethanol (E100)* +	17.99	3.539	1	5.56
Jet Fuel (Jet A or A-1)	19.33	5.67	1	9.57
Kerosene	19.72	5.67	1	9.76
Liquefied Natural Gas (LNG)+	NA	NA	1	4.46
Liquefied Petroleum Gas (LPG)+	17.23	3.849	1	5.79
Ethane	16.25	2.916	1	4.14
Isobutane	17.75	4.162	1	6.45
n-Butane	17.72	4.328	1	6.7
Propane	17.2	3.824	1	5.74
Methanol	NA	NA	1	4.1
Motor Gasoline	19.33	5.218	1	8.81
Residual Fuel Oil (#5, 6)	21.49	6.287	1	11.8
	kg C/MMBtu	Btu/standard cubic foot		kg CO ₂ /therm
Compressed Natural Gas (CNG)+	14.47	1027	1	5.31

* CO₂ emissions from biodiesel and ethanol combustion are considered biogenic and should not be reported as a direct mobile combustion emission (see Chapter 7). These biogenic CO₂ emissions may be reported optionally.

Note: CO₂ emission factors are calculated using the molar mass ratio of carbon dioxide to carbon (CO₂/C) of 44/12. Heat content factors are based on higher heating values (HHV). NA = data not available. A fraction oxidized value of 1.00 is used following the Intergovernmental Panel on Climate Change (IPCC), Guidelines for National Greenhouse Gas Inventories (2006).

Table B3. Carbon Dioxide Emission Factors for Transport Fuels				
Fuel	Carbon Content	Heat Content	Fraction Oxidized	CO₂ Emission Factor
Source: U.S. EPA, Inventory of Greenhouse Gas Emissions and Sinks: 1990-2005 (2007), Annex 2.1, Tables A-31, A-34, A-36, A-39, except those marked + (from EPA Climate Leaders Mobile Combustion Guidance). Methanol emission factor is calculated from the properties of the pure compounds.				

Source: Table C.6 of the CCAR GRP.

Table B4. Off-Road Vehicles/Construction Equipment Emission Factors for CH₄ and NO₂		
Fuel Type	CH₄ (kg/gallon)	N₂O (kg/gallon)
Butane	9.0 x 10 ⁻⁵	4.1 x 10 ⁻⁴
Propane	9.0 x 10 ⁻⁵	4.1 x 10 ⁻⁴

Source: Table C.4 and C.5 of the CCAR GRP.

Table B5. Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type		
	CH₄ (g/mile)	N₂O (g/mile)
Passenger Cars - Gasoline		
Model Year 1984-1993	0.0704	0.0647
Model Year 1994	0.0531	0.056
Model Year 1995	0.0358	0.0473
Model Year 1996	0.0272	0.0426
Model Year 1997	0.0268	0.0422
Model Year 1998	0.0249	0.0393
Model Year 1999	0.0216	0.0337
Model Year 2000	0.0178	0.0273
Model Year 2001	0.011	0.0158
Model Year 2002	0.0107	0.0153
Model Year 2003	0.0114	0.0135
Model Year 2004	0.0145	0.0083
Model Year 2005 - present	0.0147	0.0079
Light Duty Truck - Gasoline		
Model Year 1987-1993	0.0813	0.1035
Model Year 1994	0.0646	0.0982
Model Year 1995	0.0517	0.0908
Model Year 1996	0.0452	0.0871
Model Year 1997	0.0452	0.0871
Model Year 1998	0.0391	0.0728
Model Year 1999	0.0321	0.0564
Model Year 2000	0.0346	0.0621

Table B5. Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type		
	CH₄ (g/mile)	N₂O (g/mile)
Model Year 2001	0.0151	0.0164
Model Year 2002	0.0178	0.0228
Model Year 2003	0.0155	0.0114
Model Year 2004	0.0152	0.0132
Model Year 2005 - present	0.0157	0.0101
Light Duty Truck - Alternative Fuels and Diesel		
Methanol	0.018	0.067
CNG	0.737	0.05
LPG	0.037	0.067
Ethanol	0.055	0.067
Model Year 1960 - 1982	0.0011	0.0017
Model Year 1983 - 1995	0.0009	0.0014
Model Year 1996 - Present	0.001	0.0015
Heavy Duty Trucks - Diesel and Alternative Fuels		
All Model Years - Diesel	0.0051	0.0048
Methanol	0.066	0.175
CNG	1.966	0.175
LNG	1.966	0.175
LPG	0.066	0.175
Ethanol	0.197	0.175
Biodiesel*	0.06	0.05
Source: Gasoline vehicle factors from EPA Climate Leaders, Mobile Combustion Guidance, (2008) based on U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005 (2007). Diesel vehicle factors based on US EPA, Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2005 (2007), Annex 3.2, Table A-98.		
Source: US EPA, Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2005 (2007), Annex 3.2, Table A-100, except biodiesel.		
* Biodiesel emission factor derived from California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks: 1990-1999 (Draft: December 2001), Table 2-20.		

Appendix C

Air Dispersion Modeling

Model Selection

To estimate ambient air concentrations at receptor locations described below, ENVIRON will use version 07026 of AERMOD, the USEPA-recommended air dispersion model (USEPA, 2005c). The AERMOD model is also recommended by the CARB (CARB, 2006d) for goods movement related projects. AERMOD was developed as a replacement for USEPA's Industrial Source Complex Short Term (ISCST3) air dispersion model to improve the accuracy of air dispersion model results for routine regulatory applications and to incorporate the progress in scientific knowledge of atmospheric turbulence and dispersion. Both models are near-field, steady-state Gaussian plume models, and use site-representative hourly surface and twice-daily upper air meteorological data to simulate the effects of dispersion of emissions from industrial-type releases (e.g., point, area, and volume) for distances of up to 50 kilometers.

For the past 20 years, refined near-field air dispersion modeling has typically been conducted using USEPA's ISCST3 model. However, on November 9, 2005, the USEPA promulgated final revisions to the federal Guideline on Air Quality Models (USEPA, 2005c). These revisions recommend that AERMOD, including the plume rise model enhancement (PRIME) building downwash algorithms, be used for dispersion modeling evaluations of criteria air pollutant and toxic air pollutant emissions from typical industrial facilities. As of November 9, 2006, ISCST3 is no longer considered a USEPA-approved model for certain regulatory applications. AERMOD provides better characterization of plume dispersion than does ISCST3, according to USEPA (2003).

AERMOD is appropriate for use in estimating ground-level short-term ambient air concentrations resulting from non-reactive buoyant emissions from sources located in simple and complex terrain. This analysis will be conducted using AERMOD in the regulatory default mode, as recommended by USEPA (2005c) and CARB (2006d), with the exception of the parameters discussed later. These defaults include the following modeling control options:

- adjusting stack heights for stack-tip downwash (not applicable to this project since there are no point sources),
- using upper-bound concentration estimates for sources influenced by building downwash from super-squat buildings,
- incorporating the effects of elevated terrain,
- employing the calms processing routine, and
- employing the missing data processing routine.

There is a possibility that USEPA may provide a beta version of the AERMOD model that improves the model performance by incorporating algorithms that handle the initial vertical dimension mixing zone for volume sources more accurately. This beta version of the AERMOD model might be used if it is made available during the period when the air dispersion modeling for the project is being carried out.

ENVIRON will perform air dispersion modeling using unit emissions rates of one gram per second (g/s) for each emissions source to estimate long- and short-term dispersion factors for each emissions source at each receptor. The source-specific dispersion factors will be combined with the actual pollutant emission rate for each source and the resulting concentrations summed over all sources to estimate the total pollutant exposure concentration at each receptor for each of the emissions scenarios identified.

Source Characterization and Parameters

ENVIRON will model exhaust freeway emissions as a line source which in AERMOD is represented by a series of volume sources spaced at equal distances apart. Volume sources are sources with emissions that have no buoyancy and emanate from a diffuse area. A volume source is characterized by an initial lateral and vertical dimension (initial dispersion) and a release height. The values of those parameters will be chosen based on a review of treatment of freeway mobile sources in recent CEQA/NEPA EIR/EIS documents related to goods movement in the South Coast (POLA TraPac and POLB Middle Harbor) and to be consistent with available guidance documents.

The geometries of the various traffic links in the I-710 Traffic Model are inherently not very accurate spatially. URS has developed accurate geometry of the various I-710 Build alternatives as a part of the engineering/design process using AutoCAD. ENVIRON will use these geometrics developed by URS for placing the volume sources in order to have an accurate spatial representation of the Build alternatives. However, it should be noted that the geometrics developed by URS do not have the data on Link IDs for the traffic links. The Link IDs are the common data elements that link the emissions and the traffic links. Therefore, ENVIRON will use GIS based tools to transcribe the Link IDs onto the geometrics developed by URS using AutoCAD.

Construction equipment exhaust and evaporative emissions will be modeled as volume sources. However, fugitive construction dust will be modeled as area sources (a source from a two-dimensional region with no buoyancy). An area source is characterized by a length and a width of the region, and a release height. This treatment of construction equipment exhaust and construction fugitive dust emissions is adapted from the South Coast AQMD's LST modeling methodology (http://www.aqmd.gov/CEQA/handbook/LST/Method_final.pdf)

Land Use

AERMOD can evaluate heat island effects from urban areas to atmospheric transport and dispersion using an urban boundary layer option. Due to the industrial, commercial, and compact residential land use at the impacted receptors, and consistent with SCAQMD's past practices, the area in the vicinity of the freeway will be considered *urban*, and ENVIRON will select the urban boundary layer option. Selection of the urban boundary layer option in AERMOD also requires an estimate of the population of the urban area in order to make adjustments to the urban boundary layer. ENVIRON will use published census data corresponding to the Metropolitan Statistical Area (MSA) for the metropolitan Los Angeles area, as recommended by USEPA (2005b).

Terrain

Another important consideration in an air dispersion modeling analysis is whether the terrain in the modeling area is simple or complex (i.e., terrain above the effective height of the emission point). ENVIRON will include USGS 7.5 minute digital elevation maps (DEMs) for the entire modeling domain. Terrain elevation data will be incorporated into the AERMOD model using version 06341 of AERMAP, AERMOD's terrain preprocessor, which will classify the modeling domain as simple or complex.

Receptor Locations

The following types of receptors will be used in the air dispersion modeling:

- Grid receptors will be placed in the model at equally spaced intervals covering the area over which project impacts could be of significance. The exact extent of the receptor grid will not be known until preliminary modeling begins. Spacing of grid receptors will be chosen to be consistent with applicable guidance documents and via consultation with the lead agency.
- Discrete receptors will be placed at locations of known 'sensitive' receptors such as schools, day care centers, hospitals etc. within the project study area.

Meteorological Data

AERMOD requires meteorological inputs to characterize the transport and dispersion of pollutants in the atmosphere. Surface and upper air meteorological data inputs, along with surface parameter data describing the land use and surface characteristics near the project area are first processed using AERMET, the meteorological preprocessor to AERMOD. The output files generated by AERMET (surface and profile files) are the meteorological input files required by AERMOD. The focus of the air quality assessment is the determination of potential air quality impacts in the I-710 corridor. As such, meteorological data for air dispersion modeling should be selected based upon their spatial and temporal representativeness of conditions in the immediate vicinity of the I-710. Therefore, a Sphere of Influence analysis will be performed to identify the most representative meteorological dataset for each sector of the study area.

Sphere of Influence Analysis

Since the I-710 project will cover an 18-mile stretch of the freeway, the meteorological conditions are expected to vary along the length of the freeway from the coast to downtown Los Angeles. A Sphere of Influence analysis will be the first step in the preparation of meteorological inputs. Broadly this analysis will accomplish the following:

1. Identification of candidate meteorological stations in the I-710 corridor and summary of the data collected there, the period of collection, data availability and QA/QC. This step should lead to a reduced list of possible meteorological stations with overlapping collection periods that would be suitable to include in the analysis. Based on the period of data availability, the year or years of analysis will be determined.

2. Acquisition of the necessary data from appropriate agencies with authority over each met station.
3. Preparation of wind rose to assess the general meteorology of each station, and a qualitative comparison/evaluation of that data against known meteorological patterns in the area.
4. A GIS analysis of the topography of the I-710 corridor area and the possibility that candidate meteorological stations are affected by topographic features and would not be representative of conditions near the I-710.
5. Final selection of meteorological stations for use in this Project.
6. Using GIS tools, assignment of each met station to the sectors of the study area to which their influence applies.

Meteorological Data Selection and Processing for Individual Stations

Details of AERMET and AERMOD meteorological data needs are described in USEPA guidance documents (USEPA, 2004a,b). USEPA (2005c) and OEHHA (2003) typically recommend using a minimum of one year of on-site surface meteorological data or five years of representative surface meteorological data from a nearby site (USEPA, 2005c). Data from the most recent, readily available consecutive five-year period are preferred, but the CARB guidelines acknowledge the potential use of less than five years of data depending on data availability and the evaluation of representative criteria (CARB, 2006d). This section describes the selection of representative surface and upper air meteorological data for the I-710 corridor. The selection methodologies were previously approved by CARB for use in the intermodal rail yard assessments, including the BNSF Watson/Wilmington Rail Yard (ENVIRON, 2006a).⁴¹

According to the USEPA, meteorological data used for air quality modeling purposes should be at least 90 percent complete before substitution and contain no data gaps greater than two weeks (USEPA, 2000). For meteorological data sets meeting these criteria, substitution of missing meteorological data to obtain a meteorological data file with 100 percent complete data will be performed using Atkinson and Lee (1992) substitution procedures.

Prior to running AERMET, it is necessary to specify the surface characteristics for the meteorological monitoring site and/or the selected site location. The surface parameters include surface roughness, albedo, and Bowen ratio that are used to compute fluxes and stability of the atmosphere (USEPA, 2004a). These parameters are affected by the nearby land use and seasonal impacts. The evaluation and selection of surface parameters will follow the latest EPA AERMOD implementation guidelines issued in January 2008 (USEPA, 2008a)⁴². Land-use sectors around each surface meteorological data collection site will be determined using United States Geological Survey (USGS) land cover maps in conjunction with recent aerial photographs. Land use data in the form of the National Land Cover Data from 2001

⁴¹ Personal communication, J. Yuan of ARB by e-mail to D. Daugherty of ENVIRON on August 3, 2006.

⁴² USEPA. AERMOD Implementation Guide. January 9, 2008.
http://www.epa.gov/scram001/7thconf/aermod/aermod_implmtn_guide_09jan2008.pdf

(USGS, 2001) will be analyzed to assign the surface parameter matrix that will be entered into AERMET. When a land-use sector consists of multiple land use types, the average surface parameters will be calculated using the USEPA (2008a) guidelines.

ENVIRON notes that the analysis of surface parameters for AERMET preprocessing is an area with relatively undeveloped guidance in which the application of professional judgment is required. USEPA guidance was developed based on nation wide averages and there are instances in which known local characteristics differ from national norms and would impact the methods used to evaluate the surface parameters. In addition, large transitions in surface parameters (such as surface roughness) perpendicular to the wind flow can result in significant inaccuracies in predicted airborne concentrations if not addressed during the development of the AERMET surface parameters. The methods described below were used in previous ENVIRON intermodal rail yard air dispersion assessments and were reviewed and approved previously by CARB (ENVIRON, 2006b,c,d,e,f,g, 2007a,b, 2008).⁴³ Table 1 shows the mapping between the two sets of land use classifications that will be used in the air dispersion analysis of the Project area.

Surface Parameter Values

There are several issues in the determination of the specific values to use for the surface parameters for which available guidance is not specific and professional judgment must be used. First, USEPA guidance provides several tables of surface parameter values which contain eight land use categories (USEPA, 2004a). The National Land Cover Dataset (NLCD) in contrast, includes twenty-one categories with an additional eight coastal wetlands subcategories (USGS, 2001). The NLCD categories were mapped to the USEPA categories based on descriptions available from the USGS and professional judgment.

Table C1. Mapping of Land Use Classification Categories around Meteorological Station			
US EPA Code	US EPA Type	2001 Land Use Code	2001 Description
9	Water	11	Open Water
8	Urban	21	Developed, Open Space
		22	Developed, Low Intensity
		23	Developed, Medium Intensity
		24	Developed, High Intensity
4	Desert Shrubland	31	Barren Land (Rock/Sand/Clay)
		52	Shrub/Scrub
5	Grassland	71	Grassland/Herbaceous
7	Swamp	90	Woody Wetlands

Second, AERMET accepts surface parameters for annual, seasonal, or monthly temporal periods (USEPA, 2004a). The AERMET User's Manual contains tables of values for the surface

⁴³ Personal communication, J. Yuan of ARB by e-mail to D. Daugherty of ENVIRON on August 3, 2006.

parameters based on four seasonal vegetative cycles. However, the determination of the appropriate seasonal value for a given period, in addition to the choice of monthly, seasonal, or annual temporal divisions, is left to the user. This is particularly crucial in California, which has seasonal weather that is atypical from the rest of the country. The AERMET User's Manual defines the seasons as follows: "Spring" refers to the period when vegetation is emerging and partially green and applies to the 1-2 months after the last killing frost, "Summer" applies to the period when vegetation is lush, "Autumn" refers to the period of the year when freezing conditions are common, deciduous trees are leafless, soils are bare after harvest, grasses are brown, and no snow is present, and "Winter" conditions apply to snow covered surfaces and subfreezing temperatures. The AERMET User's Manual also cautions that the seasons do not correspond to a particular group of months, but more on latitude and the annual vegetative growth cycles (USEPA, 2004a).

California's climate is very different from national norms and the months of the year do not always correspond to the default seasons provided in the AERMET user's guide. Therefore, ENVIRON will develop guidelines for determining which months belong in each season for the I-710 Corridor, based on local temperature and precipitation patterns and the growth cycle definitions above. For example, "Winter" values are not considered for these sites because snow cover is rare in Southern California. Furthermore, ENVIRON proposes that a season between summer and autumn (summer/autumn) would be more representative of conditions for some months of California's dry season due to the prolonged dry period after the growth of summer vegetation and the browning of grasses. The months proposed for each season are presented in Table 2. In addition to defining the months of the seasons in the I-710 Corridor, ENVIRON will also evaluate precipitation data in order to select a condition (wet, dry, average) for the Bowen ratio. As suggested by the AERMET user's guide, those precipitation totals will be compared to historical precipitation averages (USEPA, 2004a). The analysis of local conditions for surface parameter selection described above has previously been approved by CARB for use in intermodal rail yard assessments.⁴⁴

Table C2. Seasons for AERMET Surface Parameter Analysis	
Spring	February
	March
Summer	April
	May
	June
Summer/Autumn	July
	August
	September
	October
Autumn	November
	December
	January

⁴⁴ Personal communication, J. Yuan of ARB by e-mail to D. Daugherty of ENVIRON on August 3, 2006.

Analysis Area Determination

Land cover information from a specific defined area surrounding the selected meteorological station will be used to calculate the surface parameter values for each sector in accordance with the USEPA (2008a) guidelines. AERMET guidance recommends the use of an upwind fetch distance of 1 km for estimation of surface roughness length, and a 10 km by 10 km region around the meteorological station/site for albedo and Bowen ratio. The recommendation is based on the estimated distance required to obtain a new turbulent boundary layer height after a roughness transition (USEPA, 2004a; USEPA, 2008a). According to USEPA guidance, shorter fetch distances can be considered in cases of urban areas or areas with large roughness length.

Sector Selection and Analysis

AERMET accepts as input a table of surface parameters defined according to radial sectors covering segments of wind direction. A maximum of twelve sectors of at least 30 degrees can be chosen based on patterns in the local land use. The number of sectors and the directions included in each are left to the determination of the user. ENVIRON will define the sectors to be used in the modeling to include homogenous areas within each sector and minimize significant transitions within sectors.

Due to the large difference in surface parameters between water and land, the use of meteorological data from stations located near the shoreline may require a more detailed land use analysis than for a station in a more homogenous area. The division of the surface parameter analysis area into radial sectors does not account for transitions in surface parameters that occur normal to the sector boundaries. Specifically, analyses of the effect of cross-wind transitions in surface roughness (the surface parameter that can influence AERMOD predicted airborne concentrations most significantly [ENVIRON, 2005; Long, 2004]), indicate that changes more than two orders of magnitude can result in significant over estimates or under estimates of concentrations (Hanna and Britter, 2002). In such cases, applying an inverse-distance weighted geometric mean in the radial direction from the meteorological station (for each defined zone) can result in surface roughness estimates which, when used for dispersion modeling applications, produce more representative results. In practice, changes of several orders of magnitude in surface roughness most frequently occur in transitions between water and land.

In the AERMOD model, land-use analysis is performed such that concentrations estimated in a sector downwind of a source are based on surface characteristics upwind from the source. However, for shoreline sources, the assignment of surface parameters to such a mixed-use sector containing significant amounts of both land and water based on upwind surface characteristics can significantly over or under predict concentrations depending on the configuration of the land-use, sources, and receptors. The approach adopted in Hanna and Britter (2002) only includes the effects of roughness downwind of the source, because the distance to achieve a new equilibrium boundary layer is typically much less than distances of interest.

AERMET Mixing Height

For each year, surface and upper air data files will be combined using version 04300 of AERMET to develop the required model-ready meteorological data files. AERMET processes the data in three stages. The first stage extracts meteorological data from archive data files and processes the data through various quality assessment checks. The second stage merges all data available for 24-hour periods and stores these data together in a single file. The third stage reads the merged meteorological data and estimates the necessary boundary layer parameters for use by AERMOD. Following USEPA's guidance (USEPA, 2004a), the upper air data will be subject to preliminary quality control by employing the MODIFY keyword, which makes three adjustments to the sounding data: first, it deletes mandatory levels from the sounding; second, it sets non-zero wind directions to zero if the wind speed is zero; third, it replaces missing ambient and dew point temperatures with interpolated values. Aside from employing the 'modify' keyword, missing periods of meteorological data will be left unaltered. For each year, AERMET generates two files for AERMOD: a file of hourly boundary layer parameter estimates and a file of multiple-level observations of wind speed and direction, temperature, and the standard deviation of the fluctuating components of wind.

Appendix D

Conformity and Hotspots Modeling

Three types of hotspot assessment are discussed for the study due to variations in current regulations and guidelines for these three pollutants.

CO Hotspot Assessment

Procedures and guidelines along with methodologies have been well developed for carbon monoxide. The methods are designed to evaluate the potential local (near-field) level carbon monoxide (CO) impacts of a project. The procedures and guidelines as developed by Caltrans comply with the Section 176(c) of the 1990 Clean Air Act Amendments, federal conformity rules, state and local adoptions of the federal conformity rules, the National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA) requirements [Cal. Code Regs., tit. 21, § 1509.3(25)].

In general, the procedures as outlined in the “Transportation Project-Level Carbon Monoxide Protocol” (University of California at Davis, Revised December 1997, UCD-ITS-RR-97-21) will be followed as part of the screening process for the CO air quality hotspot assessment. These procedures fulfill the procedures for determining localized CO concentrations (hot-spot analysis) that are given in 40 CFR § 93.123⁴⁵. This protocol specifies the use of the CALINE4 dispersion model (http://www.dot.ca.gov/hq/env/air/pages/cl_license.htm) to model short-range CO concentrations. However, Appendix B, Section B.4 of the CO Protocol provides a comment that “The recommendation to use CALINE4 does not preclude the use of other models approved by EPA such as CAL3QHC. This section further mentions that the “intersection link” option of CALINE4 should not be used as it calculates modal emissions using algorithm that is based on outdated vehicle fleet information. CAL3QHC has the ability to characterize and model signalized intersections and also has the ability to evaluate the contribution from idling vehicles during red signal times. Therefore it is proposed that CAL3QHC will be used for the CO conformity analysis. The CO Protocol may also be supplemented through local consultation process to incorporate region-specific processes.

The protocol provides a framework and roadmap for conducting a federal CO conformity determination at the project level as well as for NEPA and CEQA. Intersection selection procedure will follow a ranking and selection procedure based on Level-of-Service and traffic volumes as described in EPA’s “Guideline for Modeling Carbon Monoxide from Roadway Intersections”, EPA-454/R-92-005.

Carbon monoxide concentrations will be estimated for up to six (6) intersections having the worst levels of service and/or highest peak-period volumes as determined through the projected changes made as part of the traffic analysis study. As noted above the Caltrans Transportation Project-Level CO Protocol will be followed for specifying parameters such as the strength of the ground based inversion, the low wind speed condition and temperature for the region. For this assessment the CAL3QHC line source air quality model will be used along with the appropriate projected background CO concentrations as obtained from the SCAQMD for baseline and future years. Receptor placement will be made using a 3-m (~ 10 ft) buffer between the roadway and

⁴⁵Conformity regulations are in 40 CFR Part 93.

the receptor locations. If the physical setting precludes these receptor locations from having public access then the nearest location to where the public might have access will be used to establish the receptor location. Receptors will be placed at the standard breathing height of 1.8 m will be placed near each corner and along the leg of the intersections outside the buffer zone to determine the maximum concentrations within the vicinity of the intersection. Information will be needed on the current and projected intersection layout configuration, traffic volumes and geometry (number of lanes, lane width, turn bays, turn movements, etc) for both the build and no-build situation. Other critical data will include current and expected future intersection operations parameters (e.g., signal timing, etc. that are generally available from the level of service analysis.

PM₁₀ and PM_{2.5} Hotspot Assessment

On March 10, 2006, EPA issued amendments to the Transportation Conformity Rule to address localized impacts of particulate matter: “PM_{2.5} and PM₁₀ Hot-Spot Analyses in Project-level Transportation Conformity Determinations for the New PM_{2.5} and Existing PM₁₀ National Ambient Air Quality Standards” (71 FR 12468). These rule amendments require the assessment of localized air quality impacts of Federally-funded or approved transportation projects in PM_{2.5} and PM₁₀ nonattainment and maintenance areas deemed to be projects of *air quality concern*⁴⁶. The critical factor for establishing PM_{2.5} and PM₁₀ hotspot criteria is whether or not a project’s direct PM_{2.5} and PM₁₀ emissions could actually cause a new violation, worsen an existing air quality violation, or delay timely attainment of the PM₁₀ or PM_{2.5} National Ambient Air Quality Standards.

Projects that would have an *air quality concern* that would require PM_{2.5} and PM₁₀ hotspot analysis include:

- New or expanded highway projects that have a significant number of or a significant increase in diesel vehicles;
- 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;
- New bus and rail terminals, and transfer points, that have a significant number of diesel vehicles congregating at a single location;
- Expanded bus and rail terminals, and expanded transfer points, which significantly increase the number of diesel vehicles congregating at a single location; and
- Projects in or affecting locations, areas, or sites which are identified in the PM_{2.5} or PM₁₀ state implementation plan or submission, as sites of violation or possible violation.

⁴⁶ Criteria for identifying projects of air quality concern is described in 40 CFR 93.123(b)(1).

SCAG's Transportation Conformity Working Group serves as the body or forum for interagency consultation to reach concurrence with the methods, underlying assumptions, and results of the PM_{2.5} and PM₁₀ hotspot analyses (40 CFR 93.105).

The assessment of localized impacts (i.e., "hotspot analysis") will examine potential air quality impacts on a much smaller scale than an entire nonattainment or maintenance area. The hotspot analysis would determine whether a transportation project meets Clean Air Act conformity requirements to support the State and SCAQMD air quality goals. Only qualitative PM_{2.5} and PM₁₀ hotspot analysis is required for these projects until such time EPA releases its quantitative modeling guidance and announces that quantitative PM_{2.5} and PM₁₀ hotspot analyses are required under 40 CFR §93.123(b)(4). It is possible that EPA could issue draft guidance on methods for performing quantitative assessments of PM₁₀/PM_{2.5} hotspots in time for use in this assessment, in which case quantitative assessment will be performed according to the guidance requirements.

EPA requires hotspot findings to be based only on directly emitted PM₁₀ and PM_{2.5} (this includes tailpipe, break and tire wear), since secondary particles take several hours to form in the atmosphere giving emissions time to disperse beyond the immediate area of concern. The PM_{2.5} and PM₁₀ Hot-Spot Analysis Conformity Rule requires that PM₁₀ include road dust emissions, however for PM_{2.5} hot-spot analyses road dust emissions are only included if such emissions have been found significant by EPA or the South Coast prior to the PM_{2.5} SIP or as part of an adequate PM_{2.5} SIP motor vehicle emissions budget (40 CFR 93.102(b)(3)). Emissions resulting from construction of the project are not required to be considered in the hotspot analysis if such emissions are considered temporary (less than 5 years at any individual site) according to 40 CFR §93.123(c)(5).

Overall the hotspot analysis will assess whether the project meets the conformity requirements under 40CFR 93.116 and 93.123.

Appendix E

Health Risk Assessment

This Appendix describes the human health risk assessment (HRA) approach that will be used to evaluate the potential for TAC emissions from the Proposed Project. The health risk assessment HRA will be conducted using a methodology that is consistent with Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics Hot Spots Program Risk Assessment Guidelines⁴⁷ and SCAQMD Rule 1401/212 risk assessment guidance.⁴⁸

E.1 Methodology

Health risks will be calculated using the guidance documents referenced above and described below. The Hotspots Analysis and Reporting Program (HARP), which incorporates the programmatic requirements of the Air Toxics “Hot Spots” Program, is often used as a tool to conduct a HRA. It is a computer software package that combines facility prioritization, air dispersion modeling, and health risk analysis. Due to complexities in the modeling representation of construction and traffic operations, HARP will not be used for this analysis. Instead, the air dispersion modeling will be conducted using AERMOD, and the health risk calculations will be performed in spreadsheets/ databases using methodologies consistent with SCAQMD Rule 1401/212 guidance document. The detailed methodology for the health risk estimates is further described below.

E.2 Hazard Assessment

Identification of chemicals of potential concern and specification of their toxicities are described below.

E.2.1 Chemicals of Potential Concern

The Chemicals of Potential Concern (COPC) will be identified based on the emission inventory for the construction phase and traffic operational emissions due to the Proposed Project. As stated earlier in Section 3.4, the Caltrans SER identifies six of the COPCs, which are the six priority MSATSS listed below:

- Diesel exhaust (particulate matter and organic gases)
- Benzene
- 1,3-Butadiene
- Acetaldehyde
- Formaldehyde
- Acrolein

⁴⁷ Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, August 2003.

⁴⁸ South Coast Air Quality Management District, Risk Assessment Procedures for Rules 1401 and 212. Version 7.0. July 2005

All COPCs that are associated with construction and traffic operation of the Project are presented in table E1 below. A limited HRA would assess only the six priority MSATs listed above.

Table E1. List of TACs included in the I-710 Corridor EIR/EIS, types of health impacts, and whether they are EPA Hazardous Air Pollutants and Priority Mobile Source Air Toxics (MSAT)

CHEMICAL NAME	CAS ID	Found in GAS or PARTICLES (PM)	OEHHA carcinogen ¹	OEHHA chronic non-cancer impacts ¹	OEHHA acute impacts	EPA Hazardous Air Pollutant (HAP)	EPA Priority Mobile Source Air Toxic (MSAT)
Diesel particulate matter (DPM)	9901	PM	x	x			x
Formaldehyde	50000	GAS	x	x	x	YES	x
Methyl alcohol	67561	GAS		x	x	YES	
Benzene	71432	GAS	x	x	x	YES	x
Acetaldehyde	75070	GAS	x	x		YES	x
Methyl ethyl ketone (mek) (2-butanone)	78933	GAS			x		
Naphthalene	91203	GAS	x	x		YES	
o-Xylene	95476	GAS		x	x	YES	
Ethylbenzene	100414	GAS	x	x		YES	
Styrene	100425	GAS		x	x	YES	
p-Xylene	106423	GAS		x	x	YES	
1,3-butadiene	106990	GAS	x	x		YES	x
Acrolein (2-propenal)	107028	GAS		x	x	YES	x
m-Xylene	108383	GAS		x	x	YES	
Toluene	108883	GAS		x	x	YES	
n-Hexane	110543	GAS		x		YES	
Propylene	115071	GAS		x			
LEAD	7439921	PM	x			YES	
MANGANESE	7439965	PM		x		YES	
MERCURY	7439976	PM		x	x	YES	
NICKEL	7440020	PM	x	x	x	YES	
ARSENIC	7440382	PM	x	x	x	YES	
CADMIUM	7440439	PM	x	x		YES	
COPPER	7440508	PM			x		
VANADIUM	7440622	PM			x		
SELENIUM	7782492	PM		x		YES	
CHLORINE	7782505	PM		x	x	YES	
CR(6) and compounds	18540299	PM	x	x		YES	
Acetone	67641	GAS	Note that these compounds have been identified as TACs because they are present in the OEHHA-HARP database, however there are no inhalation exposure toxicity data assigned to				
Methane	74828	GAS					
Ethylene	74851	GAS					
Isoprene	78795	GAS					
2-methylnaphthalene	91576	GAS				YES	

Table E1. List of TACs included in the I-710 Corridor EIR/EIS, types of health impacts, and whether they are EPA Hazardous Air Pollutants and Priority Mobile Source Air Toxics (MSAT)

CHEMICAL NAME	CAS ID	Found in GAS or PARTICLES (PM)	OEHHA carcinogen ¹	OEHHA chronic non- cancer impacts ¹	OEHHA acute impacts	EPA Hazardous Air Pollutant (HAP)	EPA Priority Mobile Source Air Toxic (MSAT)
1,2,4-trimethylbenzene	95636	GAS	these compounds and are not included in the HRA				
Isopropylbenzene (cumene)	98828	GAS				YES	
Cyclohexane	110827	GAS					
Propionaldehyde	123386	GAS				YES	
Butyraldehyde	123728	GAS					
2,2,4-trimethylpentane	540841	GAS				YES	
Crotonaldehyde	4170303	GAS					
ALUMINUM	7429905	PM					
SILVER	7440224	PM					
THALLIUM	7440280	PM					
ANTIMONY	7440360	PM				YES	
BARIUM	7440393	PM					
CHROMIUM	7440473	PM				YES	
COBALT	7440484	PM				YES	
ZINC	7440666	PM					
PHOSPHOROUS	7723140	PM				YES	
BROMINE	7726956	PM					
1: Compounds have cancer and non-cancer chronic impacts via inhalation exposure pathway							

E.3 Toxicity Assessment

Chemicals will be evaluated for their potential carcinogenic and non-carcinogenic effects. Most regulatory agencies consider carcinogens to pose a risk of cancer at all exposure levels (i.e., a “no-threshold” assumption); that is, any increase in dose is assumed to be associated with an increase in the probability of developing cancer (Note, however, this does not mean any dose will result in an effect; the risk of an effect is increased with the increasing dose). In contrast, non-carcinogens generally are thought to produce adverse health effects only when some minimum exposure level is reached (i.e., a threshold).

Toxicity studies with laboratory animals or epidemiological studies of human populations are relied upon to develop toxicity criteria. The toxicities of many of the volatile COPCs emitted from the Project are relatively well-known and their toxicity criteria have been well established.

Toxicological values from the latest version of Cal/EPA OEHHA and CARB's Consolidated Table of Approved Risk Assessment Health Values⁴⁹ will be used in this assessment.

Diesel exhaust is a complex mixture of hydrocarbons, particulates, gases, water, and other compounds. The precise composition of the mixture depends on several factors including the fuel source, engine type, engine age, and operating condition. Diesel exhaust is classified by OEHHA and the USEPA as a carcinogen, and both agencies also recognize that diesel exhaust causes non-cancer effects as well (OEHHA 1998, 2007; USEPA, 2008b). Under California regulatory guidelines (OEHHA, 1998, 2007), DPM is used as a surrogate for the chemical mixture that is diesel exhaust, and the unit risk factor (URF) and reference exposure levels (REL) that OEHHA developed for DPM reflects that approach (OEHHA, 1998).

OEHHA also periodically revises toxicity values for compounds. OEHHA is in the process of modifying the acute REL for Acrolein.⁵⁰ The SCAQMD currently excludes the assessment of potential acute health effects caused by Acrolein when evaluating health risk analyses as part of their AB2588 program.⁵¹ Although there is uncertainty in regards to the health risk of Acrolein, this health risk analysis would evaluate the impacts "with" Acrolein and the newer acute REL value proposed by OEHHA.

E.4 Exposure Assessment

The health risk posed by the identified COPCs requires an assessment of the fate and transport of potential emissions to receptors and an estimation of exposure at a receptor(s). The fate and transport of COPCs are estimated using air dispersion modeling tools. Exposure is assessed by pathways. Primary and secondary exposure pathways include inhalation, non-inhalation primary, and non-inhalation secondary exposure pathways. The primary non-inhalation pathways include dermal exposure, water ingestion, crop ingestion (direct deposition), and soil ingestion. The secondary non-inhalation pathways include ingestion of mother's milk, fish, dairy products, all types of meat and eggs, and crop ingestion (root uptake). SCAQMD has developed multi-pathway factors for each COPC that account for the applicable pathways for the contaminant. The multi-pathway factors as recommended by SCAQMD for the COPC will be used for calculating the health risks in this HRA.

The populations of interest for this Project are residential, commercial (i.e., occupational), and sensitive receptors such as schools, child care centers, and convalescence homes. Additional assumptions also need to be made in order to estimate cancer risks. For example, a residential receptor is typically assumed to have continuous exposure of 24-hours per day for a 70-year lifetime. This is a highly conservative assumption, since most people do not remain at home all day nor are home every day, and residents typically change residences approximately every 9 years (USEPA, 1997). For off-site workers, SCAQMD guidance suggests that the exposure be

⁴⁹ Cal/EPA. 2004. *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values*. Office of Environmental Health Hazard Assessment and Air Resources Board. June 25, 2008.

⁵⁰ http://www.oehha.org/air/hot_spots/cnr110207.html

⁵¹ Email communication with Tom Chico of SCAQMD on April 18, 2008.

based on a 40 year working lifetime and 250 days per year. This is a highly conservative assumption, since most people do not remain at the same job for 40 years nor are they at work every day. The SCAQMD also suggests specific daily breathing rates and exposure value factors for estimating cancer risks. These exposure assumptions can be adjusted for specific situations/receptor types.

Based on this approach, the potential excess cancer risk associated with exposure to a carcinogen will be estimated to be the product of the annual average concentration and the cancer potency (CP) for that carcinogen, the daily breathing rate (DBR), the exposure value factor (EVF), and the multipathway factor (for chemicals having impacts due to multiple pathways). The equation used to calculate the potential excess cancer risk is:

$$\text{Risk}_i = C_i \times \text{CP}_i \times \text{DBR} \times \text{EVF} \times \text{MP}$$

Where:

Risk_i	= Lifetime Excess Cancer Risk from exposure to chemical _i
C_i	= Representative Air Concentration for chemical _i ($\mu\text{g}/\text{m}^3$)
CP_i	= Cancer Potency _i ($\text{mg}/\text{kg}\text{-day}$) ⁻¹
DBR	= Daily Breathing Rate (L/kg body weight-day)
EVF	= Exposure Value Factor (unitless)
MP	= MultiPathway Factor (unitless)

An estimate of an individual's incremental excess cancer risk from exposure to Project emissions will be calculated by summing the chemical-specific excess cancer risks.

The potential for chronic non-carcinogenic health effects is evaluated by calculating the total hazard index (HI) for the Project emissions. This HI represents the sum of the hazard quotients (HQs) developed for each individual Project-related chemical, where a HQ is the ratio of the representative air concentration of the chemical to the chemical-specific non-cancer reference exposure level (REL). The non-cancer RELs represent the daily average exposure concentration at (or below) which no adverse health effects are anticipated.

The equations that will be used to calculate the chemical-specific chronic HQs and HIs are:

$$\text{HQ}_i = C_i \times \text{MP} / \text{REL}_i$$

$$\text{HI} = \sum \text{HQ}_i$$

Where:

HQ_i	= Hazard Quotient for chemical _i
C_i	= Average Daily Air Concentration for chemical _i ($\mu\text{g}/\text{m}^3$)
REL_i	= Noncancer Reference Exposure Level for chemical _i ($\mu\text{g}/\text{m}^3$)
HI	= Hazard Index
MP	= MultiPathway Factor (unitless)

SCAQMD has developed adjustment factors (AF) for chemicals that have an acute REL developed for an averaging time other than 1-hr. Therefore, the equations that will be used to calculate the acute HQs and HI are:

$$HQ_i = C_i \times AF/REL_i$$

$$HI = \sum HQ_i$$

Where:

HQ_i	= Hazard Quotient for chemical _i
C_i	= Maximum 1-hr concentration for chemical _i ($\mu\text{g}/\text{m}^3$)
REL_i	= Noncancer Reference Exposure Level for chemical _i ($\mu\text{g}/\text{m}^3$)
AF	= Adjustment Factor
HI	= Hazard Index

E.5 Risk Characterization

The results from the health risk calculations will provide an estimate of the potential risks and hazards to individuals through inhalation of ambient air and other selected pathways as discussed above. The estimated risks and hazards will include: lifetime excess cancer risk estimates, cumulative chronic HI estimates, and cumulative acute HI estimates for the receptor locations of concern.

The cancer risks from exposure to multiple carcinogens and multiple pathways will be summed across all exposure pathways for all sources contributing to the overall exposure that may potentially impact the receptor.⁵²

E.6 Uncertainties

Although OEHHA and SCAQMD guidance dictate the use of standard exposure factors and toxicity factors in the preparation of all HRAs, the HRA will include a discussion of the uncertainty in assumptions made for these parameters. In addition, the HRA will include a comparison of 70-year residential excess cancer risk dictated by the SCAQMD guidance to the 30-year residential, 9-year adult and child residential, school years, and worker exposure scenarios. These types of uncertainty analyses are important to provide a perspective on worst case versus average risk to exposed individuals, especially since the alternate exposure scenarios reflect EPA guidance.

In many cases, the toxicity factor used to calculate human health risks has been developed based on substantial assumptions (i.e., using observed health effects during exposure for a short time period to extrapolate to predict health effects for a long time period, use of animal models to estimate human health effects, etc.). A discussion of the basis for the diesel toxicity factor and uncertainty in applying this factor to all diesel engines will be included in the HRA.

⁵² USEPA. 1989. Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual (Part A). USEPA 540/1-89-002, Office of Emergency and Remedial Response, Washington, DC. December.

Appendix B

Construction Emissions

This Appendix describes the methodology used by ENVIRON to estimate the construction emissions and presents detailed data tables.

Per the I-710 Corridor Project AQ/HRA Protocol (Appendix A) that was reviewed by the Agency Air Technical Working Group and others, ENVIRON modified the Sacramento Metropolitan Air Quality Management District (SMAQMD) Road Construction Emissions Model Version 6.3.2 (hereafter referred to as the “Model” in this Appendix) to estimate the emissions from construction activities.¹ This Model estimates daily emissions per construction activity and accepts the following user-defined values:

- Construction start year
- Construction project length in miles
- Construction project type (i.e. new road construction, road widening, etc.)
- Construction duration in months
- Estimated number of acres disturbed per day
- Predominant soil type (i.e. sand gravel, weathered rock-earth, etc.)
- Estimated amount of soil imported/exported per day

The Model also allows the user to override certain default values for soil hauling, worker commute, water trucks, fugitive dust, and off-road equipment usage and specifications. The pollutants that are calculated include: ROG, CO, NO_x, PM₁₀ (Total), PM₁₀ (Exhaust), PM₁₀ (Fugitive Dust), PM_{2.5} (Total), PM_{2.5} (Exhaust), PM_{2.5} (Fugitive Dust) and CO₂. It should be noted that the Model was designed for use in the Sacramento area and included both on-road and off-road emission factors specific to that region. Since the I-710 project is in the South Coast Air Basin, the emission factors in the Model were replaced by the emission factors specific to the South Coast Air Basin. South Coast Air Quality Management District (SCAQMD) EMFAC2007 (v2.3) emission factors were used for light-duty and heavy-duty on-road vehicles, while SCAQMD OFFROAD2007 emission factors were used for off-road heavy equipment.^{2 3} We note that CARB has recently (October/November 2011) released a new version of the OFFROAD model for certain off-road categories. Emissions for certain equipment categories are up to 60% or more lower than OFFROAD2007. Thus, the analysis is conservative and projected emissions will likely be lower than calculated.

URS Corporation (URS) provided the input data for two project alternatives: Alternative 5A and Alternative 6 (representing Alternatives 6A/6B/6C). For each alternative, construction is analyzed in seven segments along the I-710 freeway created for preliminary engineering of the project. The seven segments are:

- Segment 1: Ocean Boulevard to Willow Street

¹ SMAQMD Road Construction Emissions Model Version 6.3.2 available at <http://www.airquality.org/ceqa/index.shtml>.

² EMFAC2007 Version 2.3 emission factors available at <http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html>.

³ OFFROAD2007 emission factors available at <http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html>.

- Segment 2: Wardlow Road to Del Amo Boulevard
- Segment 3: Long Beach Boulevard to Alondra Boulevard
- Segment 4: Rosecrans Avenue to Firestone Boulevard
- Segment 5: Florence Avenue to Slauson Avenue
- Segment 6: Atlantic Boulevard to Washington Boulevard
- Segment 7: I-5 to just south of SR-60

It was conservatively assumed that construction of all seven segments would start simultaneously, beginning in 2020 and would continue for some segments through 2027. In estimating the peak daily emissions, it was conservatively assumed that construction of all seven segments would occur simultaneously, which would not occur in reality. It should be noted that the original Model only accounts for emissions occurring through 2025. Since emission factors through 2027 are unavailable in EMFAC2007 (v2.3) and OFFROAD2007, ENVIRON modified the Model to conservatively estimate emissions occurring after 2025 by using the 2025 emission factors.

The Model consists of four construction activities: grubbing/land clearing, grading/excavation, drainage/utilities/sub-grade, and paving. The durations of these activities were defined by URS. Based on the durations, the Model estimates emissions from on-road and off-road vehicles and equipment (such as dozers, loaders, and tractors). Fugitive dust emissions are based solely on the maximum area disturbed per day and take into account mitigation procedures (e.g., presence and number of water trucks). For the on-road and off-road vehicles, the Model estimates the emissions from water trucks, soil hauling trucks, and worker commute, but does not estimate the emissions from concrete hauling and other off-site material delivery trucks. In consultation with SMAQMD, ENVIRON modified the Model to calculate the emissions from concrete haul trucks and off-site material delivery trucks also.

Based on the estimated schedule and duration of segment construction, the Model calculates the daily mass emissions of each pollutant for a particular month. The peak daily mass emissions and the annual average daily mass emissions were estimated from these daily mass emissions calculated by the Model.

The last table (Table B.4-1) presents the results of the construction emissions analysis – peak daily mass emissions for construction. Based on the worst-case scenario of simultaneous construction all along the I-710 freeway on the most compressed construction schedule possible, the analysis indicates that all pollutants exceed SCAQMD mass daily thresholds. The following analysis caveats apply:

- Emissions would not occur at one location only, but at several locations along the I-710 freeway
- Emissions from certain off-road equipment are overestimated by OFFROAD2007 compared to the recently released OFFROAD2011 (released October/November 2011)

- If the construction project uses a number of water trucks greater than or equal to the default calculated value, then the Model assumes 50% control of fugitive dust
 - The number of water trucks assumed in this analysis is always equal to or greater than the Model default calculated value
 - The construction activity fugitive dust emissions thus reflect a 50% control level due to watering
 - The effect of additional watering has not been analyzed, but could potentially (but not always) result in further emission reductions
- The analysis does not incorporate the effect of “green” construction equipment.
 - The Los Angeles County Metropolitan Transportation Authority (Metro) Board of Directors adopted a Green Construction Policy on August 4, 2011⁴
 - The policy requires identifying and mitigating the impacts of emissions on human health, the environment, and climate for on-road, off-road construction and equipment used in Metro construction
 - The Green Construction Policy would likely lower construction emissions, particularly from off-road equipment exhaust

⁴ See http://www.metro.net/news/simple_pr/Metro-Board-of-Directors-adopts-Green-Construction/. See also www.metro.net/board/items/2011/08_August/20110804RBMItem43.pdf. A September 2011 overview presentation on the policy can be found at <http://www.slideshare.net/cliban/overview-of-lacmta-green-construction-policy>.

Table 1 below provides a brief description of the various tables presented in this Appendix.

Table 1: Topics Covered in Various Tables	
Table Numbers	Topics Covered
B.1-1A to B.1-1F	SCAQMD Emission Factors for Construction Equipment Years 2020 to 2025
B.1-2	Equipment Specifications from OFFROAD 2007
B.1-3	SCAQMD EMFAC2007 ver.2.3 Emission Factors
B.2-1A to B.2-1G	Alternative 5A: Road Construction Emissions Model ver.6.3.2 Data Entry Sheet; Segments 1 to 7
B.2-2A to B.2-2H	Alternative 5A: Road Construction Emissions Model ver.6.3.2; Input Data: • construction duration, • soil hauling, • concrete and off-site material hauling, • worker commute, • water truck, • fugitive dust, • off-road equipment, and • equipment specifications.
B.2-3	Alternative 5A: Daily Mass Emissions
B.2-4	Segment Peak Daily Mass Emissions for Construction of Alternative 5A
B.3-1A to B.3-1G	Alternatives 6A/B/C: Road Construction Emissions Model ver.6.3.2 Data Entry Sheet; Segments 1 to 7
B.3-2A to B.3-2H	Alternatives 6A/B/C: Road Construction Emissions Model ver.6.3.2; Input Data: • construction duration, • soil hauling, • concrete and off-site material hauling, • worker commute, • water truck, • fugitive dust, • off-road equipment, and • equipment specifications.
B.3-3	Alternatives 6A/B/C: Daily Mass Emissions
B.3-4	Segment Peak Daily Mass Emissions for Construction of Alternatives 6A/B/C
B.4-1	Peak Daily Mass Emissions for Construction

**Table B.1-1A. SCAQMD Emission Factors for Construction Equipment in
2020 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Cranes	50	24.15	109.89	85.93	0.14	5.48	10517.25
	120	24.60	156.30	150.43	0.27	10.88	22746.61
	175	29.39	215.66	184.66	0.41	10.13	36443.50
	250	31.95	110.65	224.50	0.57	7.73	50874.14
	500	49.33	174.12	319.64	0.80	11.66	81692.13
	750	83.34	292.79	554.50	1.38	19.93	137458.02
	9999	304.01	994.92	3194.89	4.43	81.53	440257.09
Crushing/ Proc. Equipment	50	33.28	183.07	152.75	0.26	8.19	19965.13
	120	31.39	247.05	215.62	0.44	13.72	37711.94
	175	49.11	431.77	319.41	0.85	16.67	75867.53
	250	56.45	219.71	393.25	1.25	12.78	110917.46
	500	84.01	321.67	536.53	1.66	18.86	169481.84
	750	132.07	506.53	863.00	2.69	29.73	267089.11
	9999	344.00	1203.27	3860.92	5.96	92.93	593186.57
Excavators	25	9.00	30.70	56.85	0.09	2.12	7457.06
	50	17.42	110.95	84.45	0.15	3.65	11347.71
	120	26.43	225.86	168.60	0.39	9.32	33394.69
	175	31.89	301.06	175.43	0.57	8.84	50902.58
	250	37.55	148.60	203.79	0.81	6.97	71976.89
	500	54.35	208.22	273.41	1.04	9.94	106020.04
	750	90.12	345.01	460.52	1.77	16.57	175727.39
Graders	50	25.54	125.27	97.78	0.16	5.62	12491.02
	120	33.46	230.86	207.22	0.40	14.10	34003.32
	175	41.63	330.30	255.02	0.63	13.75	56209.56
	250	45.31	167.04	303.94	0.88	10.42	78068.85
	500	58.22	225.27	362.03	1.02	13.08	104091.77
	750	123.85	476.61	790.38	2.22	28.16	220327.63
Other Construction Equipment	15	5.34	27.99	33.42	0.07	1.31	4584.59
	25	7.23	24.69	45.70	0.08	1.71	5995.23
	50	14.90	102.83	88.73	0.16	3.56	12695.78
	120	22.73	230.42	173.93	0.43	9.02	36676.71
	175	23.78	265.74	154.87	0.54	7.45	48314.51
	500	45.91	212.11	275.11	1.13	9.63	115320.06
Other General Industrial Equipment ²	15	3.01	17.71	21.15	0.05	0.83	2900.92
	25	8.40	28.67	53.08	0.09	1.98	6962.21
	50	19.54	100.30	79.09	0.13	4.59	9863.12
	120	27.31	191.94	172.83	0.33	11.63	28138.91
	175	32.68	257.11	201.36	0.49	10.75	43513.78
	250	35.88	127.18	241.21	0.69	7.84	61499.45
	500	68.31	236.64	420.77	1.18	14.78	120388.14
	750	112.95	390.04	710.21	2.00	24.65	198422.84
Other Material Handling Equipment	1000	157.27	537.75	1752.11	2.55	43.96	253830.31
	50	26.98	138.28	109.98	0.18	6.39	13759.45
	120	26.42	186.75	168.74	0.32	11.36	27518.90
	175	41.13	325.48	255.92	0.62	13.67	55373.41
	250	37.92	135.33	257.80	0.74	8.38	65776.91
	500	48.72	170.17	303.54	0.85	10.66	86919.47
Pavers	9999	222.71	709.75	2317.03	3.30	58.04	336267.60
	25	10.23	34.85	64.72	0.11	2.50	8463.86
	50	37.85	138.58	108.76	0.16	8.33	12695.78
	120	41.28	217.96	248.17	0.37	19.41	31386.80
	175	55.22	344.70	371.34	0.65	20.82	58189.01
	250	64.01	213.76	503.77	0.99	18.48	88165.19
	500	72.33	286.00	542.45	1.04	20.41	105798.21

**Table B.1-1A. SCAQMD Emission Factors for Construction Equipment in
2020 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Paving Equipment	25	6.91	23.58	43.67	0.07	1.63	5727.89
	50	31.85	116.90	92.69	0.14	7.11	10852.85
	120	32.11	170.66	194.14	0.29	15.29	24720.38
	175	42.83	269.67	290.43	0.52	16.32	45823.13
	250	39.17	131.28	314.24	0.62	11.30	55470.11
Plate Compactors	15	2.28	11.95	14.26	0.03	0.56	1956.70
Pumps	15	4.35	21.03	27.00	0.05	1.36	3367.34
	25	12.01	38.56	70.69	0.11	3.32	8839.27
	50	21.09	115.50	113.27	0.20	5.71	15573.95
	120	24.34	213.77	201.49	0.41	11.94	35357.08
	175	32.28	332.77	272.49	0.72	12.56	63558.56
	250	34.46	167.82	332.82	1.03	9.76	91339.11
	500	56.30	280.74	512.42	1.54	16.12	156581.33
	750	94.12	464.12	867.01	2.60	26.96	258864.23
	9999	277.93	1190.90	3968.42	6.18	88.94	614539.66
Rollers	15	3.34	17.50	20.90	0.04	0.82	2866.79
	25	7.30	24.92	46.14	0.08	1.72	6052.11
	50	24.63	110.49	92.48	0.15	5.79	11785.69
	120	26.12	175.69	172.32	0.31	12.26	26756.71
	175	35.11	277.32	241.80	0.55	12.96	49053.96
	250	38.18	145.18	298.51	0.78	10.13	69440.01
	500	52.21	208.97	378.92	0.98	13.58	99381.99
Rubber Tired Dozers	175	68.47	368.49	451.88	0.66	25.46	58729.38
	250	77.16	239.45	585.03	0.94	23.39	83227.92
	500	103.92	420.77	765.10	1.18	30.54	120143.51
	750	156.98	632.03	1177.00	1.82	46.44	180886.45
	1000	246.67	1020.57	2508.86	2.70	75.86	268477.18
Rubber Tired Loaders	25	9.26	31.62	58.54	0.10	2.19	7678.90
	50	27.87	139.71	109.94	0.18	6.20	14129.18
	120	25.52	180.38	160.07	0.31	10.75	26722.58
	175	34.77	281.92	213.78	0.54	11.47	48223.50
	250	38.47	143.29	256.52	0.76	8.81	67574.32
	500	59.07	227.51	364.32	1.06	13.21	107504.64
	750	121.56	465.86	769.20	2.21	27.49	220230.83
	1000	158.03	597.18	1816.17	2.71	44.59	269375.89
Scrapers	120	55.24	299.92	325.21	0.50	25.00	42592.30
	175	63.50	404.63	409.13	0.76	22.89	67164.81
	250	69.04	228.80	514.54	1.07	18.70	95013.61
	500	100.31	383.49	708.27	1.43	26.50	145796.75
	750	174.14	661.68	1258.00	2.53	46.44	251868.03
Signal Boards	15	3.26	17.09	20.40	0.04	0.80	2798.53
	50	22.78	128.49	119.36	0.21	5.95	16415.78
	120	25.29	224.33	200.66	0.43	11.98	36380.93
	175	36.79	375.38	284.83	0.79	13.68	70099.84
	250	46.36	216.13	396.29	1.30	12.06	115797.87

**Table B.1-1A. SCAQMD Emission Factors for Construction Equipment in
2020 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Surfacing Equipment	50	12.02	54.03	48.48	0.08	2.87	6399.09
	120	25.84	182.69	183.03	0.34	12.31	28923.87
	175	24.96	211.53	189.04	0.44	9.54	38906.44
	250	29.59	124.93	259.42	0.69	8.53	61175.26
	500	45.71	214.47	381.00	0.98	13.06	100337.65
	750	72.54	336.26	616.57	1.58	20.84	157417.47
Tractors/ Loaders/ Backhoes	25	8.68	29.63	54.85	0.09	2.06	7195.41
	50	18.48	125.21	98.82	0.18	3.95	13765.14
	120	16.60	154.32	111.87	0.28	5.84	23463.30
	175	25.92	264.96	146.05	0.52	7.20	45988.09
	250	36.86	156.25	200.83	0.88	6.85	77898.19
	500	72.83	301.28	368.88	1.76	13.32	156422.06
	750	109.25	451.74	561.87	2.64	20.09	234633.13
Trenchers	15	4.47	23.44	27.99	0.06	1.09	3839.45
	25	18.01	61.48	113.83	0.19	4.25	14931.20
	50	44.92	158.51	127.18	0.19	9.91	14931.20
	120	38.52	201.55	236.91	0.35	18.49	29435.79
	175	61.06	380.69	426.93	0.73	23.64	65270.66
	250	72.56	248.21	595.11	1.14	22.10	101105.53
	500	94.88	395.07	747.85	1.39	28.27	141206.47
	750	179.80	743.66	1446.66	2.68	54.01	266201.90

Notes:

¹ Source: SCAQMD, 2008. <http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html> [accessed September 2011]

² The Model's "Other General Industrial Equipment" emission factors were only replaced in the Segment 7 construction emissions modeling for the freight corridor alternatives (Alternatives 6A/6B/6C), because this equipment category does not exist in the other segments nor in Alternative 5A.

**Table B.1-1B. SCAQMD Emission Factors for Construction Equipment in
2021 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Cranes	50	21.89	107.84	83.32	0.14	4.84	10517.25
	120	22.61	155.50	139.33	0.27	9.51	22746.61
	175	27.25	215.48	165.14	0.41	8.94	36443.49
	250	30.24	109.16	199.77	0.57	6.90	50874.14
	500	46.94	169.95	285.91	0.80	10.47	81692.14
	750	79.20	285.79	494.01	1.38	17.85	137458.00
	9999	289.18	964.88	3037.40	4.43	74.63	440257.06
Crushing/ Proc. Equipment	50	30.29	180.45	147.95	0.26	7.07	19965.14
	120	29.09	246.32	198.40	0.44	11.84	37711.94
	175	46.02	431.92	282.27	0.85	14.68	75867.53
	250	53.60	218.41	342.74	1.25	11.23	110917.48
	500	80.06	319.78	469.59	1.66	16.61	169481.89
	750	126.07	503.83	755.38	2.69	26.21	267089.24
	9999	328.44	1185.50	3640.70	5.96	84.11	593186.60
Excavators	25	9.00	30.70	56.85	0.09	2.12	7457.07
	50	16.15	109.80	81.73	0.15	3.10	11347.71
	120	24.63	225.31	155.55	0.39	7.89	33394.68
	175	29.72	301.04	153.18	0.57	7.64	50902.58
	250	35.52	147.78	176.48	0.81	6.07	71976.91
	500	51.56	206.90	238.33	1.04	8.68	106020.03
	750	85.51	342.87	401.00	1.77	14.47	175727.44
Graders	50	23.39	123.30	94.75	0.16	4.95	12491.01
	120	31.03	229.93	192.38	0.40	12.33	34003.31
	175	38.73	330.07	227.50	0.63	12.11	56209.56
	250	42.96	165.41	270.11	0.88	9.30	78068.82
	500	55.43	221.12	322.61	1.02	11.70	104091.76
	750	117.83	467.85	703.39	2.22	25.18	220327.64
Other Construction Equipment	15	5.34	27.99	33.42	0.07	1.31	4584.59
	25	7.23	24.69	45.70	0.08	1.71	5995.23
	50	13.75	101.75	85.87	0.16	3.02	12695.78
	120	21.21	229.93	160.44	0.43	7.68	36676.71
	175	22.25	265.72	134.82	0.54	6.46	48314.52
	500	43.59	211.08	238.27	1.13	8.37	115320.07
Other General Industrial Equipment ²	15	3.01	17.71	21.15	0.05	0.83	2900.92
	25	8.40	28.67	53.08	0.09	1.98	6962.21
	50	17.61	98.04	76.03	0.13	3.90	9863.12
	120	24.99	190.73	157.28	0.33	9.90	28138.91
	175	30.14	256.47	175.59	0.49	9.30	43513.79
	250	33.50	125.86	207.46	0.69	6.77	61499.46
	500	64.01	234.35	363.14	1.18	12.79	120388.10
	750	105.80	386.25	611.79	2.00	21.34	198422.80
Other Material Handling Equipment	1000	146.56	526.94	1635.34	2.55	39.14	253830.33
	50	24.28	135.15	105.73	0.18	5.43	13759.45
	120	24.17	185.58	153.57	0.32	9.67	27518.90
	175	37.95	324.69	223.23	0.62	11.82	55373.41
	250	35.43	133.94	221.78	0.74	7.23	65776.91
	500	45.69	168.53	262.04	0.85	9.23	86919.47
Pavers	9999	208.91	695.47	2162.40	3.30	51.69	336267.63
	25	10.22	34.85	64.63	0.11	2.47	8463.85
	50	35.11	135.88	105.78	0.16	7.63	12695.78
	120	38.77	216.81	233.01	0.37	17.75	31386.80
	175	52.06	344.08	341.12	0.65	19.10	58189.01
	250	60.70	208.56	461.50	0.99	16.82	88165.18
	500	68.84	275.28	496.72	1.04	18.62	105798.20

**Table B.1-1B. SCAQMD Emission Factors for Construction Equipment in
2021 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Paving Equipment	25	6.91	23.58	43.67	0.07	1.63	5727.89
	50	29.40	114.49	90.12	0.14	6.49	10852.85
	120	30.04	169.71	181.91	0.29	13.94	24720.37
	175	40.28	269.16	266.12	0.52	14.92	45823.14
	250	37.18	128.24	287.15	0.62	10.28	55470.11
Plate Compactors	15	2.28	11.95	14.26	0.03	0.56	1956.70
Pumps	15	4.27	20.94	26.52	0.05	1.28	3367.34
	25	11.76	38.14	70.05	0.11	3.16	8839.27
	50	18.82	112.96	109.02	0.20	4.90	15573.96
	120	21.97	212.61	183.87	0.41	10.28	35357.07
	175	29.57	332.26	238.09	0.72	10.99	63558.56
	250	32.05	166.13	287.16	1.03	8.50	91339.12
	500	52.71	278.07	443.09	1.54	14.07	156581.35
	750	87.93	459.72	748.41	2.60	23.53	258864.29
	9999	255.61	1167.12	3713.17	6.18	79.40	614539.69
Rollers	15	3.34	17.50	20.90	0.04	0.82	2866.79
	25	7.30	24.92	46.14	0.08	1.72	6052.11
	50	22.25	108.34	89.76	0.15	5.16	11785.69
	120	23.99	174.79	159.85	0.31	10.77	26756.70
	175	32.60	277.05	216.59	0.55	11.51	49053.97
	250	36.27	143.25	266.24	0.78	9.10	69439.99
	500	49.90	203.66	339.35	0.98	12.26	99382.03
Rubber Tired Dozers	175	64.96	367.26	420.84	0.66	23.69	58729.39
	250	73.28	232.26	543.74	0.94	21.55	83227.91
	500	98.99	400.50	710.79	1.18	28.20	120143.54
	750	149.55	601.72	1094.25	1.82	42.90	180886.46
	1000	235.24	970.45	2409.58	2.70	71.03	268477.14
Rubber Tired Loaders	25	9.26	31.62	58.54	0.10	2.19	7678.90
	50	25.46	137.53	106.55	0.18	5.44	14129.18
	120	23.59	179.63	148.35	0.31	9.34	26722.57
	175	32.30	281.71	190.13	0.54	10.05	48223.50
	250	36.46	141.92	227.14	0.76	7.84	67574.34
	500	56.24	223.18	323.99	1.06	11.80	107504.65
	750	115.61	456.99	682.15	2.21	24.51	220230.85
	1000	149.59	580.97	1728.86	2.71	40.56	269375.98
Scrapers	120	51.82	298.44	304.81	0.50	22.73	42592.30
	175	59.68	404.01	374.21	0.76	20.85	67164.77
	250	65.39	223.85	469.40	1.07	16.96	95013.61
	500	95.34	370.50	646.01	1.43	24.09	145796.78
	750	165.50	639.36	1148.11	2.53	42.25	251867.98
Signal Boards	15	3.26	17.09	20.40	0.04	0.80	2798.53
	50	20.65	126.52	115.61	0.21	5.17	16415.78
	120	23.27	223.62	184.97	0.43	10.43	36380.93
	175	34.32	375.42	252.06	0.79	12.12	70099.84
	250	43.92	214.71	346.21	1.30	10.65	115797.85

Table B.1-1B. SCAQMD Emission Factors for Construction Equipment in 2021 (g/hr) ¹

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Surfacing Equipment	50	10.97	53.05	47.06	0.08	2.58	6399.09
	120	23.82	181.81	170.57	0.34	10.99	28923.86
	175	23.17	211.27	170.40	0.44	8.56	38906.44
	250	28.00	123.17	233.19	0.69	7.72	61175.24
	500	43.51	208.72	342.72	0.98	11.84	100337.65
	750	68.94	327.27	554.12	1.58	18.87	157417.51
Tractors/ Loaders/ Backhoes	25	8.68	29.63	54.85	0.09	2.05	7195.42
	50	17.07	123.97	95.60	0.18	3.33	13765.14
	120	15.43	153.95	103.20	0.28	4.88	23463.31
	175	24.15	264.92	126.90	0.52	6.14	45988.09
	250	34.86	155.57	173.00	0.88	5.93	77898.17
	500	69.08	299.19	320.59	1.76	11.58	156422.07
	750	103.60	448.64	486.97	2.64	17.45	234633.14
Trenchers	15	4.47	23.44	27.99	0.06	1.09	3839.45
	25	18.01	61.48	113.83	0.19	4.25	14931.20
	50	41.77	155.37	123.78	0.19	9.13	14931.19
	120	36.23	200.46	222.91	0.35	17.01	29435.79
	175	57.68	379.92	393.49	0.73	21.81	65270.67
	250	68.83	241.64	547.09	1.14	20.19	101105.54
	500	90.35	379.39	687.20	1.39	25.89	141206.48
	750	171.23	714.27	1330.31	2.68	49.50	266201.88

Notes:

¹ Source: SCAQMD, 2008. <http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html> [accessed September 2011]

² The Model's "Other General Industrial Equipment" emission factors were only replaced in the Segment 7 construction emissions modeling for the freight corridor alternatives (Alternatives 6A/6B/6C), because this equipment category does not exist in the other segments nor in Alternative 5A.

**Table B.1-1C. SCAQMD Emission Factors for Construction Equipment in
2022 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Cranes	50	19.91	106.05	80.88	0.14	4.26	10517.25
	120	20.84	154.82	129.11	0.27	8.26	22746.62
	175	25.33	215.34	147.31	0.41	7.88	36443.49
	250	28.65	107.87	177.18	0.57	6.14	50874.15
	500	44.69	166.49	255.20	0.80	9.38	81692.14
	750	75.34	280.00	439.40	1.38	15.96	137458.02
	9999	274.84	940.66	2891.59	4.43	68.22	440257.09
Crushing/ Proc. Equipment	50	27.95	178.51	143.44	0.26	6.06	19965.14
	120	27.22	245.84	183.03	0.44	10.22	37711.94
	175	43.20	432.20	248.53	0.85	12.81	75867.56
	250	50.92	217.48	296.93	1.25	9.78	110917.44
	500	76.30	318.41	414.39	1.66	14.49	169481.89
	750	120.31	501.84	666.31	2.69	22.89	267089.23
	9999	313.83	1169.92	3455.93	5.96	76.19	593186.41
Excavators	25	9.00	30.70	56.85	0.09	2.12	7457.07
	50	15.22	108.93	79.28	0.15	2.62	11347.71
	120	23.23	224.91	144.31	0.39	6.72	33394.68
	175	27.85	301.02	133.66	0.57	6.59	50902.58
	250	33.71	147.10	152.67	0.81	5.26	71976.91
	500	49.04	205.95	207.90	1.04	7.54	106020.01
	750	81.34	341.33	349.50	1.77	12.58	175727.37
Graders	50	21.51	121.61	91.99	0.16	4.34	12491.01
	120	28.82	229.10	178.86	0.40	10.73	34003.31
	175	36.04	329.86	202.37	0.63	10.62	56209.58
	250	40.78	164.04	239.41	0.88	8.30	78068.83
	500	52.82	217.52	287.08	1.02	10.47	104091.81
	750	112.20	460.24	624.55	2.22	22.49	220327.65
Other Construction Equipment	15	5.34	27.99	33.42	0.07	1.31	4584.59
	25	7.23	24.69	45.70	0.08	1.71	5995.23
	50	12.86	100.90	83.26	0.16	2.55	12695.79
	120	19.97	229.55	148.65	0.43	6.54	36676.70
	175	20.85	265.70	117.02	0.54	5.56	48314.52
	500	41.42	210.25	208.04	1.13	7.23	115320.03
Other General Industrial Equipment ²	15	3.01	17.71	21.15	0.05	0.83	2900.92
	25	8.40	28.67	53.08	0.09	1.98	6962.20
	50	16.33	97.06	73.71	0.13	3.35	9863.12
	120	23.41	190.42	145.10	0.33	8.59	28138.91
	175	28.24	256.77	155.08	0.49	8.13	43513.77
	250	31.80	125.27	180.40	0.69	5.91	61499.45
	500	60.95	233.20	321.23	1.18	11.20	120388.14
	750	100.72	384.35	540.42	2.00	18.66	198422.81
Other Material Handling Equipment	1000	138.78	519.35	1549.87	2.55	35.44	253830.32
	50	22.50	133.79	102.49	0.18	4.67	13759.46
	120	22.65	185.28	141.69	0.32	8.39	27518.91
	175	35.59	325.08	197.24	0.62	10.34	55373.41
	250	33.62	133.30	192.85	0.74	6.31	65776.90
	500	43.49	167.70	231.80	0.85	8.07	86919.47
Pavers	9999	198.84	685.43	2049.18	3.30	46.83	336267.72
	25	10.21	34.85	64.57	0.11	2.45	8463.85
	50	32.56	133.38	102.94	0.16	6.97	12695.78
	120	36.39	215.75	218.80	0.37	16.17	31386.80
	175	49.04	343.52	312.69	0.65	17.45	58189.00
	250	57.64	204.19	421.98	0.99	15.31	88165.17
	500	65.61	265.92	454.09	1.04	16.98	105798.21

**Table B.1-1C. SCAQMD Emission Factors for Construction Equipment in
2022 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Paving Equipment	25	6.91	23.58	43.67	0.07	1.63	5727.89
	50	27.11	112.28	87.68	0.14	5.91	10852.85
	120	28.07	168.82	170.43	0.29	12.63	24720.38
	175	37.82	268.70	243.15	0.52	13.58	45823.14
	250	35.33	125.69	261.66	0.62	9.35	55470.13
Plate Compactors	15	2.28	11.95	14.26	0.03	0.56	1956.70
Pumps	15	4.21	20.87	26.19	0.05	1.22	3367.34
	25	11.55	37.81	69.63	0.11	3.03	8839.27
	50	17.24	111.55	105.72	0.20	4.26	15573.95
	120	20.34	212.11	170.04	0.41	9.02	35357.08
	175	27.56	332.39	210.93	0.72	9.73	63558.56
	250	30.31	165.11	250.65	1.03	7.49	91339.11
	500	50.12	276.41	392.89	1.54	12.41	156581.33
	750	83.50	456.97	662.76	2.60	20.76	258864.38
	9999	240.09	1149.08	3524.31	6.18	72.14	614539.66
Rollers	15	3.34	17.50	20.90	0.04	0.82	2866.79
	25	7.30	24.92	46.14	0.08	1.72	6052.11
	50	20.15	106.46	87.22	0.15	4.56	11785.69
	120	22.06	174.01	148.34	0.31	9.41	26756.71
	175	30.33	276.84	193.48	0.55	10.19	49053.97
	250	34.48	141.57	236.63	0.78	8.15	69440.01
	500	47.70	199.17	303.40	0.98	11.04	99382.02
Rubber Tired Dozers	175	61.65	366.19	391.46	0.66	22.01	58729.37
	250	69.65	225.71	504.76	0.94	19.83	83227.92
	500	94.37	382.40	659.55	1.18	26.01	120143.52
	750	142.60	574.65	1016.11	1.82	39.60	180886.42
	1000	224.48	925.11	2315.72	2.70	66.49	268477.14
Rubber Tired Loaders	25	9.26	31.62	58.54	0.10	2.19	7678.90
	50	23.35	135.64	103.42	0.18	4.75	14129.18
	120	21.86	178.98	137.72	0.31	8.08	26722.58
	175	30.04	281.52	168.70	0.54	8.78	48223.51
	250	34.59	140.72	200.61	0.76	6.97	67574.33
	500	53.59	219.42	287.92	1.06	10.53	107504.61
	750	110.03	449.28	603.88	2.21	21.82	220230.92
	1000	141.83	567.69	1650.28	2.71	36.89	269375.92
Scrapers	120	48.60	297.08	285.78	0.50	20.58	42592.31
	175	56.04	403.46	341.49	0.76	18.93	67164.81
	250	62.08	219.74	427.53	1.07	15.41	95013.63
	500	90.84	359.24	588.44	1.43	21.93	145796.75
	750	157.67	620.02	1046.17	2.53	38.47	251867.91
Signal Boards	15	3.26	17.09	20.40	0.04	0.80	2798.53
	50	18.93	124.96	112.09	0.21	4.47	16415.78
	120	21.62	223.09	170.86	0.43	9.08	36380.92
	175	32.08	375.51	222.18	0.79	10.65	70099.84
	250	41.68	213.65	300.61	1.30	9.34	115797.87

Table B.1-1C. SCAQMD Emission Factors for Construction Equipment in 2022 (g/hr) ¹

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Surfacing Equipment	50	10.02	52.16	45.74	0.08	2.31	6399.09
	120	21.96	181.01	159.06	0.34	9.75	28923.86
	175	21.51	211.05	153.16	0.44	7.65	38906.44
	250	26.54	121.66	208.97	0.69	6.97	61175.24
	500	41.49	203.72	307.81	0.98	10.72	100337.66
	750	65.62	319.44	496.69	1.58	17.06	157417.46
Tractors/ Loaders/ Backhoes	25	8.68	29.63	54.85	0.09	2.05	7195.41
	50	16.06	123.07	92.74	0.18	2.79	13765.14
	120	14.52	153.70	95.83	0.28	4.10	23463.31
	175	22.62	264.90	110.28	0.52	5.24	45988.08
	250	33.04	155.00	149.11	0.88	5.13	77898.20
	500	65.62	297.66	278.69	1.76	10.04	156422.07
	750	98.41	446.38	422.76	2.64	15.13	234633.12
Trenchers	15	4.47	23.44	27.99	0.06	1.09	3839.45
	25	18.01	61.48	113.83	0.19	4.25	14931.20
	50	38.82	152.45	120.55	0.19	8.39	14931.20
	120	34.07	199.46	209.76	0.35	15.59	29435.78
	175	54.47	379.26	362.02	0.73	20.07	65270.67
	250	65.37	235.94	502.13	1.14	18.44	101105.56
	500	86.15	365.74	630.61	1.39	23.71	141206.44
	750	163.26	688.69	1221.51	2.68	45.33	266201.93

Notes:

¹ Source: SCAQMD, 2008. <http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html> [accessed September 2011]

² The Model's "Other General Industrial Equipment" emission factors were only replaced in the Segment 7 construction emissions modeling for the freight corridor alternatives (Alternatives 6A/6B/6C), because this equipment category does not exist in the other segments nor in Alternative 5A.

**Table B.1-1D. SCAQMD Emission Factors for Construction Equipment in
2023 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Cranes	50	18.25	104.54	78.62	0.14	3.73	10517.25
	120	19.32	154.26	119.83	0.27	7.18	22746.61
	175	23.66	215.25	131.27	0.41	6.96	36443.49
	250	27.20	106.76	156.87	0.57	5.46	50874.16
	500	42.62	163.77	227.40	0.80	8.39	81692.13
	750	71.82	275.45	390.68	1.38	14.25	137458.02
	9999	261.11	921.12	2757.47	4.43	62.29	440256.91
Crushing/ Proc. Equipment	50	25.99	177.05	139.23	0.26	5.15	19965.14
	120	25.60	245.54	169.38	0.44	8.77	37711.94
	175	40.67	432.61	220.86	0.85	11.11	75867.54
	250	48.44	216.96	259.75	1.25	8.44	110917.48
	500	72.79	317.60	366.04	1.66	12.54	169481.90
	750	114.92	500.70	588.65	2.69	19.82	267089.32
	9999	300.12	1156.25	3299.62	5.96	69.04	593186.68
Excavators	25	9.00	30.70	56.85	0.09	2.12	7457.07
	50	14.51	108.25	77.07	0.15	2.22	11347.71
	120	22.10	224.60	134.57	0.39	5.74	33394.69
	175	26.21	301.00	116.72	0.57	5.67	50902.58
	250	32.08	146.49	132.21	0.81	4.55	71976.90
	500	46.75	205.12	182.05	1.04	6.53	106020.04
	750	77.56	339.98	305.91	1.77	10.89	175727.37
Graders	50	19.88	120.14	89.48	0.16	3.79	12491.02
	120	26.84	228.37	166.63	0.40	9.30	34003.31
	175	33.58	329.67	179.62	0.63	9.30	56209.57
	250	38.81	162.88	211.82	0.88	7.40	78068.81
	500	50.46	214.37	255.42	1.02	9.37	104091.82
	750	107.08	453.56	553.91	2.22	20.07	220327.60
Other Construction Equipment	15	5.34	27.99	33.42	0.07	1.31	4584.59
	25	7.23	24.69	45.70	0.08	1.71	5995.23
	50	12.12	100.20	80.87	0.16	2.13	12695.79
	120	18.89	229.24	138.40	0.43	5.53	36676.71
	175	19.60	265.69	102.45	0.54	4.76	48314.52
	500	39.41	209.66	181.73	1.13	6.21	115320.05
Other General Industrial Equipment ²	15	3.01	17.71	21.15	0.05	0.83	2900.92
	25	8.40	28.67	53.08	0.09	1.98	6962.21
	50	15.24	96.32	71.58	0.13	2.87	9863.12
	120	22.05	190.25	134.34	0.33	7.42	28138.91
	175	26.55	257.16	138.30	0.49	7.09	43513.77
	250	30.31	124.95	158.57	0.69	5.14	61499.47
	500	58.26	232.54	284.90	1.18	9.75	120388.13
	750	96.24	383.26	479.18	2.00	16.26	198422.84
Other Material Handling Equipment	1000	131.79	512.68	1478.61	2.55	32.16	253830.35
	50	20.99	132.78	99.52	0.18	3.99	13759.45
	120	21.32	185.12	131.17	0.32	7.25	27518.91
	175	33.46	325.58	175.91	0.62	9.01	55373.43
	250	32.03	132.96	169.50	0.74	5.49	65776.92
	500	41.54	167.22	205.57	0.85	7.03	86919.48
Pavers	9999	189.26	676.60	1954.79	3.30	42.49	336267.59
	25	10.21	34.85	64.53	0.11	2.43	8463.85
	50	30.20	131.09	100.25	0.16	6.34	12695.78
	120	34.14	214.76	205.51	0.37	14.67	31386.80
	175	46.14	343.02	285.99	0.65	15.86	58189.01
	250	54.80	200.43	385.00	0.99	13.92	88165.16
	500	62.62	257.63	414.37	1.04	15.48	105798.20

**Table B.1-1D. SCAQMD Emission Factors for Construction Equipment in
2023 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Paving Equipment	25	6.91	23.58	43.67	0.07	1.63	5727.89
	50	24.99	110.26	85.37	0.14	5.35	10852.85
	120	26.21	167.99	159.66	0.29	11.38	24720.37
	175	35.47	268.29	221.52	0.52	12.28	45823.15
	250	33.60	123.54	237.72	0.62	8.49	55470.11
Plate Compactors	15	2.28	11.95	14.26	0.03	0.56	1956.70
Pumps	15	4.15	20.80	25.89	0.05	1.16	3367.34
	25	11.37	37.50	69.25	0.11	2.91	8839.27
	50	15.86	110.40	102.64	0.20	3.68	15573.95
	120	18.92	211.73	157.68	0.41	7.87	35357.07
	175	25.81	332.60	188.57	0.72	8.58	63558.56
	250	28.78	164.47	220.88	1.03	6.56	91339.11
	500	47.82	275.33	348.95	1.54	10.89	156581.33
	750	79.58	455.18	588.56	2.60	18.21	258864.35
	9999	226.91	1132.86	3364.44	6.18	65.65	614539.57
Rollers	15	3.34	17.50	20.90	0.04	0.82	2866.79
	25	7.30	24.92	46.14	0.08	1.72	6052.11
	50	18.33	104.84	84.84	0.15	4.01	11785.69
	120	20.38	173.35	137.85	0.31	8.19	26756.70
	175	28.34	276.68	172.64	0.55	9.02	49053.97
	250	32.81	140.11	209.89	0.78	7.28	69440.00
	500	45.61	195.48	270.92	0.98	9.91	99382.07
Rubber Tired Dozers	175	58.51	365.25	363.69	0.66	20.42	58729.36
	250	66.28	219.78	468.02	0.94	18.24	83227.92
	500	90.08	366.36	611.33	1.18	23.97	120143.52
	750	136.13	550.65	942.49	1.82	36.52	180886.49
	1000	214.37	884.25	2227.13	2.70	62.24	268477.10
Rubber Tired Loaders	25	9.26	31.62	58.54	0.10	2.19	7678.90
	50	21.57	134.06	100.58	0.18	4.13	14129.18
	120	20.34	178.42	128.18	0.31	6.97	26722.58
	175	28.03	281.37	149.49	0.54	7.67	48223.50
	250	32.88	139.67	176.94	0.76	6.18	67574.34
	500	51.14	216.16	255.72	1.06	9.39	107504.64
	750	104.90	442.61	534.75	2.21	19.41	220230.95
	1000	134.73	556.91	1580.28	2.71	33.57	269375.90
Scrapers	120	45.59	295.81	268.11	0.50	18.57	42592.31
	175	52.61	402.96	311.01	0.76	17.14	67164.82
	250	59.06	216.20	388.62	1.07	13.99	95013.60
	500	86.74	349.26	535.19	1.43	19.95	145796.75
	750	150.52	602.85	951.51	2.53	35.00	251867.98
Signal Boards	15	3.26	17.09	20.40	0.04	0.80	2798.53
	50	17.43	123.69	108.82	0.21	3.82	16415.79
	120	20.18	222.70	158.26	0.43	7.84	36380.93
	175	30.10	375.68	197.60	0.79	9.32	70099.83
	250	39.68	212.98	263.48	1.30	8.14	115797.85

Table B.1-1D. SCAQMD Emission Factors for Construction Equipment in 2023 (g/hr) ¹

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Surfacing Equipment	50	9.16	51.37	44.51	0.08	2.05	6399.09
	120	20.27	180.30	148.48	0.34	8.60	28923.86
	175	20.01	210.85	137.37	0.44	6.81	38906.43
	250	25.20	120.34	186.77	0.69	6.27	61175.24
	500	39.63	199.33	276.20	0.98	9.69	100337.66
	750	62.55	312.57	444.38	1.58	15.40	157417.49
Tractors/ Loaders/ Backhoes	25	8.68	29.63	54.85	0.09	2.05	7195.41
	50	15.33	122.40	90.19	0.18	2.34	13765.14
	120	13.80	153.51	89.55	0.28	3.46	23463.32
	175	21.26	264.89	95.89	0.52	4.48	45988.09
	250	31.41	154.51	128.81	0.88	4.43	77898.18
	500	62.49	296.58	243.03	1.76	8.69	156422.05
	750	93.75	444.81	368.35	2.64	13.10	234633.05
Trenchers	15	4.47	23.44	27.99	0.06	1.09	3839.45
	25	18.01	61.48	113.83	0.19	4.25	14931.20
	50	36.06	149.75	117.49	0.19	7.68	14931.20
	120	32.04	198.53	197.44	0.35	14.24	29435.79
	175	51.41	378.67	332.49	0.73	18.40	65270.66
	250	62.19	231.08	460.16	1.14	16.84	101105.53
	500	82.27	353.86	577.95	1.39	21.70	141206.44
	750	155.89	666.42	1120.01	2.68	41.51	266201.89

Notes:

¹ Source: SCAQMD, 2008. <http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html> [accessed September 2011]

² The Model's "Other General Industrial Equipment" emission factors were only replaced in the Segment 7 construction emissions modeling for the freight corridor alternatives (Alternatives 6A/6B/6C), because this equipment category does not exist in the other segments nor in Alternative 5A.

**Table B.1-1E. SCAQMD Emission Factors for Construction Equipment in
2024 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Cranes	50	16.92	103.32	76.52	0.14	3.25	10517.25
	120	18.08	153.83	111.56	0.27	6.25	22746.61
	175	22.23	215.21	117.00	0.41	6.15	36443.50
	250	25.89	105.82	138.75	0.57	4.84	50874.16
	500	40.69	161.76	202.49	0.80	7.47	81692.13
	750	68.58	272.11	347.48	1.38	12.68	137458.02
	9999	248.42	905.86	2636.35	4.43	56.88	440257.02
Crushing/ Proc. Equipment	50	24.40	175.96	135.28	0.26	4.42	19965.14
	120	24.20	245.36	158.54	0.44	7.49	37711.93
	175	38.33	433.07	196.58	0.85	9.52	75867.53
	250	46.10	216.56	227.41	1.25	7.21	110917.48
	500	69.43	316.96	321.23	1.66	10.72	169481.91
	750	109.71	499.78	516.60	2.69	16.97	267089.25
	9999	286.68	1144.50	3162.11	5.96	62.41	593186.46
Excavators	25	9.00	30.70	56.85	0.09	2.12	7457.07
	50	13.94	107.70	75.08	0.15	1.87	11347.71
	120	21.14	224.36	126.34	0.39	4.90	33394.69
	175	24.77	300.98	102.35	0.57	4.86	50902.56
	250	30.62	145.98	115.17	0.81	3.91	71976.91
	500	44.69	204.42	159.71	1.04	5.63	106020.05
	750	74.16	338.83	268.33	1.77	9.39	175727.37
Graders	50	18.48	118.90	87.19	0.16	3.30	12491.01
	120	25.11	227.74	155.70	0.40	8.03	34003.31
	175	31.42	329.50	159.31	0.63	8.12	56209.57
	250	37.04	161.86	187.27	0.88	6.59	78068.87
	500	48.33	211.59	227.43	1.02	8.38	104091.75
	750	102.46	447.67	491.30	2.22	17.91	220327.65
Other Construction Equipment	15	5.34	27.99	33.42	0.07	1.31	4584.59
	25	7.23	24.69	45.70	0.08	1.71	5995.23
	50	11.54	99.67	78.73	0.16	1.81	12695.79
	120	17.99	229.01	130.47	0.43	4.67	36676.71
	175	18.47	265.69	89.81	0.54	4.04	48314.52
	500	37.56	209.21	158.24	1.13	5.29	115320.06
Other General Industrial Equipment ²	15	3.01	17.71	21.15	0.05	0.83	2900.92
	25	8.40	28.67	53.08	0.09	1.98	6962.20
	50	14.33	95.74	69.59	0.13	2.48	9863.12
	120	20.85	190.14	125.67	0.33	6.39	28138.91
	175	25.01	257.53	123.50	0.49	6.13	43513.77
	250	28.91	124.67	139.41	0.69	4.42	61499.48
	500	55.71	231.96	250.96	1.18	8.40	120388.13
	750	92.01	382.32	422.09	2.00	14.00	198422.81
	1000	125.32	506.77	1415.39	2.55	29.13	253830.35
Other Material Handling Equipment	50	19.72	131.98	96.76	0.18	3.45	13759.46
	120	20.15	185.02	122.69	0.32	6.24	27518.91
	175	31.50	326.07	157.07	0.62	7.79	55373.41
	250	30.54	132.67	149.01	0.74	4.72	65776.92
	500	39.71	166.81	181.06	0.85	6.05	86919.48
	9999	180.25	668.80	1871.07	3.30	38.47	336267.61
Pavers	25	10.21	34.85	64.52	0.11	2.42	8463.86
	50	28.02	129.01	97.71	0.16	5.74	12695.79
	120	32.02	213.84	193.13	0.37	13.24	31386.79
	175	43.38	342.57	260.96	0.65	14.38	58189.02
	250	52.17	197.21	350.50	0.99	12.66	88165.15
	500	59.84	250.28	377.52	1.04	14.11	105798.21

**Table B.1-1E. SCAQMD Emission Factors for Construction Equipment in
2024 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Paving Equipment	25	6.91	23.58	43.67	0.07	1.63	5727.89
	50	23.04	108.44	83.19	0.14	4.83	10852.84
	120	24.45	167.22	149.60	0.29	10.20	24720.37
	175	33.25	267.93	201.25	0.52	11.06	45823.12
	250	31.99	121.70	215.35	0.62	7.70	55470.10
Plate Compactors	15	2.28	11.95	14.26	0.03	0.56	1956.70
Pumps	15	4.10	20.74	25.63	0.05	1.12	3367.34
	25	11.21	37.23	68.91	0.11	2.83	8839.27
	50	14.66	109.44	99.77	0.20	3.21	15573.95
	120	17.68	211.44	147.67	0.41	6.83	35357.07
	175	24.20	332.84	168.73	0.72	7.49	63558.54
	250	27.34	163.92	194.57	1.03	5.67	91339.12
	500	45.62	274.40	307.67	1.54	9.43	156581.34
	750	75.85	453.65	518.99	2.60	15.78	258864.34
	9999	214.96	1118.52	3221.37	6.18	59.57	614539.77
Rollers	15	3.34	17.50	20.90	0.04	0.82	2866.79
	25	7.30	24.92	46.14	0.08	1.72	6052.11
	50	16.84	103.50	82.63	0.15	3.51	11785.69
	120	18.96	172.82	128.44	0.31	7.12	26756.71
	175	26.60	276.57	154.00	0.55	7.99	49053.95
	250	31.24	138.84	185.91	0.78	6.48	69440.03
	500	43.61	192.42	241.68	0.98	8.86	99382.01
Rubber Tired Dozers	175	55.55	364.45	337.48	0.66	18.92	58729.40
	250	63.16	214.47	433.48	0.94	16.76	83227.90
	500	86.10	352.21	566.05	1.18	22.08	120143.51
	750	130.14	529.47	873.24	1.82	33.65	180886.49
	1000	204.88	847.47	2143.58	2.70	58.25	268477.14
Rubber Tired Loaders	25	9.26	31.62	58.54	0.10	2.19	7678.90
	50	20.10	132.76	98.00	0.18	3.58	14129.18
	120	19.06	177.97	119.72	0.31	6.01	26722.58
	175	26.29	281.26	132.52	0.54	6.71	48223.51
	250	31.34	138.75	156.13	0.76	5.48	67574.34
	500	48.91	213.41	227.19	1.06	8.36	107504.61
	750	100.28	436.99	473.83	2.21	17.26	220230.90
	1000	128.29	548.17	1518.23	2.71	30.57	269375.90
Scrapers	120	42.79	294.65	251.78	0.50	16.69	42592.30
	175	49.43	402.50	282.68	0.76	15.47	67164.80
	250	56.32	213.17	352.58	1.07	12.71	95013.61
	500	83.01	340.42	486.15	1.43	18.16	145796.73
	750	143.99	587.63	863.90	2.53	31.84	251867.93
Signal Boards	15	3.26	17.09	20.40	0.04	0.80	2798.53
	50	16.17	122.68	105.79	0.21	3.30	16415.79
	120	18.95	222.42	148.21	0.43	6.75	36380.93
	175	28.31	375.91	176.02	0.79	8.07	70099.83
	250	37.80	212.46	231.07	1.30	7.01	115797.84

**Table B.1-1E. SCAQMD Emission Factors for Construction Equipment in
2024 (g/hr) ¹**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Surfacing Equipment	50	8.40	50.69	43.38	0.08	1.82	6399.08
	120	18.76	179.67	138.84	0.34	7.55	28923.86
	175	18.68	210.69	123.03	0.44	6.06	38906.43
	250	23.97	119.17	166.63	0.69	5.64	61175.23
	500	37.90	195.48	247.63	0.98	8.74	100337.65
	750	59.74	306.54	397.39	1.58	13.87	157417.46
Tractors/ Loaders/ Backhoes	25	8.68	29.63	54.85	0.09	2.05	7195.42
	50	14.78	121.88	87.94	0.18	1.97	13765.14
	120	13.22	153.38	84.25	0.28	2.94	23463.31
	175	20.07	264.88	83.58	0.52	3.83	45988.09
	250	29.98	154.10	111.82	0.88	3.83	77898.20
	500	59.72	295.80	212.99	1.76	7.52	156422.07
	750	89.62	443.68	322.81	2.64	11.34	234633.13
Trenchers	15	4.47	23.44	27.99	0.06	1.09	3839.45
	25	18.01	61.48	113.83	0.19	4.25	14931.20
	50	33.51	147.27	114.61	0.19	7.00	14931.19
	120	30.13	197.68	185.94	0.35	12.97	29435.78
	175	48.50	378.16	304.85	0.73	16.82	65270.68
	250	59.27	226.99	421.09	1.14	15.38	101105.52
	500	78.69	343.52	529.08	1.39	19.86	141206.46
	750	149.10	647.00	1025.51	2.68	38.00	266201.98

Notes:

¹ Source: SCAQMD, 2008. <http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html> [accessed September 2011]

² The Model's "Other General Industrial Equipment" emission factors were only replaced in the Segment 7 construction emissions modeling for the freight corridor alternatives (Alternatives 6A/6B/6C), because this equipment category does not exist in the other segments nor in Alternative 5A.

**Table B.1-1F. SCAQMD Emission Factors for Construction Equipment in
2025 (g/hr) ^{1,2}**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Cranes	50	15.86	102.34	74.58	0.14	2.83	10517.25
	120	17.07	153.51	104.25	0.27	5.46	22746.61
	175	20.97	215.20	104.34	0.41	5.44	36443.49
	250	24.68	105.04	122.71	0.57	4.28	50874.15
	500	38.91	160.35	180.40	0.80	6.62	81692.13
	750	65.57	269.76	309.37	1.38	11.24	137458.03
	9999	236.73	894.24	2529.24	4.43	51.99	440256.98
Crushing/ Proc. Equipment	50	23.06	175.03	131.48	0.26	3.78	19965.15
	120	22.94	245.20	149.19	0.44	6.34	37711.94
	175	36.04	433.45	173.70	0.85	8.03	75867.54
	250	43.85	216.27	197.63	1.25	6.09	110917.46
	500	66.18	316.49	279.55	1.66	9.06	169481.94
	750	104.63	499.07	449.38	2.69	14.34	267089.32
	9999	273.01	1134.59	3037.99	5.96	56.17	593186.66
Excavators	25	9.00	30.70	56.85	0.09	2.12	7457.07
	50	13.47	107.27	73.31	0.15	1.60	11347.71
	120	20.34	224.17	119.64	0.39	4.18	33394.69
	175	23.49	300.98	89.92	0.57	4.14	50902.59
	250	29.35	145.61	100.79	0.81	3.36	71976.90
	500	42.90	203.90	140.18	1.04	4.85	106020.00
	750	71.19	337.99	235.59	1.77	8.09	175727.34
Graders	50	17.33	117.87	85.13	0.16	2.86	12491.01
	120	23.64	227.22	146.03	0.40	6.93	34003.30
	175	29.56	329.36	141.38	0.63	7.11	56209.58
	250	35.44	160.96	165.65	0.88	5.87	78068.85
	500	46.40	209.13	202.65	1.02	7.49	104091.80
	750	98.30	442.46	436.70	2.22	15.99	220327.54
Other Construction Equipment	15	5.34	27.99	33.42	0.07	1.31	4584.59
	25	7.23	24.69	45.70	0.08	1.71	5995.23
	50	11.07	99.25	76.81	0.16	1.53	12695.79
	120	17.20	228.83	123.83	0.43	3.93	36676.72
	175	17.43	265.71	78.44	0.54	3.39	48314.51
	500	35.91	208.91	137.61	1.13	4.50	115320.05
Other General Industrial Equipment ³	15	3.01	17.71	21.15	0.05	0.83	2900.92
	25	8.40	28.67	53.08	0.09	1.98	6962.20
	50	13.53	95.20	67.65	0.13	2.13	9863.12
	120	19.77	190.02	118.06	0.33	5.45	28138.91
	175	23.53	257.82	109.39	0.49	5.20	43513.77
	250	27.58	124.44	121.50	0.69	3.75	61499.46
	500	53.26	231.49	218.92	1.18	7.13	120388.13
	750	87.96	381.53	368.20	2.00	11.89	198422.79
	1000	119.16	501.66	1357.32	2.55	26.26	253830.37
Other Material Handling Equipment	50	18.60	131.23	94.05	0.18	2.97	13759.45
	120	19.09	184.90	115.26	0.32	5.32	27518.91
	175	29.62	326.44	139.13	0.62	6.61	55373.40
	250	29.11	132.43	129.85	0.74	4.00	65776.91
	500	37.95	166.47	157.93	0.85	5.14	86919.48
	9999	171.48	662.04	1794.16	3.30	34.67	336267.62
Pavers	25	10.21	34.85	64.52	0.11	2.41	8463.86
	50	26.03	127.14	95.35	0.16	5.18	12695.79
	120	30.04	212.99	181.59	0.37	11.91	31386.80
	175	40.79	342.16	237.57	0.65	12.99	58189.01
	250	49.74	194.45	318.41	0.99	11.52	88165.19
	500	57.27	243.76	343.46	1.04	12.86	105798.23

**Table B.1-1F. SCAQMD Emission Factors for Construction Equipment in
2025 (g/hr) ^{1,2}**

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Paving Equipment	25	6.91	23.58	43.67	0.07	1.63	5727.89
	50	21.28	106.80	81.13	0.14	4.33	10852.85
	120	22.82	166.52	140.24	0.29	9.09	24720.37
	175	31.17	267.61	182.39	0.52	9.92	45823.14
	250	30.48	120.10	194.55	0.62	6.98	55470.12
Plate Compactors	15	2.28	11.95	14.26	0.03	0.56	1956.70
Pumps	15	4.06	20.69	25.39	0.05	1.09	3367.34
	25	11.07	37.01	68.60	0.11	2.77	8839.27
	50	13.58	108.58	96.96	0.20	2.78	15573.95
	120	16.55	211.18	138.88	0.41	5.85	35357.07
	175	22.64	333.03	149.74	0.72	6.42	63558.54
	250	25.96	163.49	169.88	1.03	4.84	91339.11
	500	43.49	273.68	268.62	1.54	8.06	156581.36
	750	72.25	452.46	453.17	2.60	13.49	258864.36
	9999	203.58	1106.21	3089.58	6.18	53.79	614539.52
Rollers	15	3.34	17.50	20.90	0.04	0.82	2866.79
	25	7.30	24.92	46.14	0.08	1.72	6052.11
	50	15.63	102.42	80.57	0.15	3.07	11785.69
	120	17.79	172.41	120.07	0.31	6.20	26756.71
	175	25.08	276.51	137.43	0.55	7.06	49053.98
	250	29.77	137.75	164.60	0.78	5.74	69440.00
	500	41.71	190.00	215.53	0.98	7.88	99382.06
Rubber Tired Dozers	175	52.76	363.75	312.77	0.66	17.50	58729.38
	250	60.28	209.75	401.04	0.94	15.40	83227.92
	500	82.44	339.76	523.60	1.18	20.33	120143.52
	750	124.60	510.84	808.22	1.82	31.01	180886.57
	1000	196.00	814.38	2064.89	2.70	54.51	268477.13
Rubber Tired Loaders	25	9.26	31.62	58.54	0.10	2.19	7678.90
	50	18.94	131.72	95.67	0.18	3.11	14129.18
	120	18.02	177.62	112.32	0.31	5.20	26722.58
	175	24.78	281.18	117.57	0.54	5.88	48223.49
	250	29.97	137.94	137.88	0.76	4.86	67574.32
	500	46.89	211.12	202.10	1.06	7.43	107504.61
	750	96.11	432.34	420.64	2.21	15.33	220230.92
	1000	122.53	541.02	1463.81	2.71	27.90	269375.88
Scrapers	120	40.22	293.58	236.68	0.50	14.95	42592.31
	175	46.50	402.08	256.47	0.76	13.92	67164.79
	250	53.82	210.58	319.32	1.07	11.54	95013.59
	500	79.62	332.57	441.19	1.43	16.53	145796.71
	750	138.04	574.12	783.16	2.53	28.96	251867.88
Signal Boards	15	3.26	17.09	20.40	0.04	0.80	2798.53
	50	15.08	121.82	102.87	0.21	2.84	16415.78
	120	17.85	222.19	139.52	0.43	5.74	36380.94
	175	26.60	376.12	155.70	0.79	6.88	70099.81
	250	36.02	212.08	201.16	1.30	5.97	115797.82

Table B.1-1F. SCAQMD Emission Factors for Construction Equipment in 2025 (g/hr)^{1,2}

Equipment	MaxHP	ROG	CO	NO _x	SO _x	PM	CO ₂
Surfacing Equipment	50	7.76	50.11	42.35	0.08	1.61	6399.08
	120	17.46	179.15	130.15	0.34	6.62	28923.86
	175	17.52	210.56	110.17	0.44	5.38	38906.44
	250	22.84	118.13	148.54	0.69	5.05	61175.22
	500	36.30	192.15	221.94	0.98	7.87	100337.66
	750	57.15	301.33	355.29	1.58	12.47	157417.48
Tractors/ Loaders/ Backhoes	25	8.68	29.63	54.85	0.09	2.05	7195.42
	50	14.35	121.46	85.96	0.18	1.66	13765.14
	120	12.74	153.27	79.87	0.28	2.50	23463.31
	175	19.03	264.86	73.18	0.52	3.26	45988.10
	250	28.73	153.74	97.84	0.88	3.31	77898.20
	500	57.29	295.12	187.22	1.76	6.51	156422.11
	750	85.99	442.69	283.77	2.64	9.82	234633.19
Trenchers	15	4.47	23.44	27.99	0.06	1.09	3839.45
	25	18.01	61.48	113.83	0.19	4.25	14931.20
	50	31.16	145.01	111.90	0.19	6.37	14931.20
	120	28.34	196.90	175.24	0.35	11.76	29435.79
	175	45.75	377.69	279.05	0.73	15.32	65270.68
	250	56.55	223.41	384.65	1.14	14.04	101105.54
	500	75.35	334.28	483.67	1.39	18.16	141206.48
	750	142.73	629.66	937.37	2.68	34.75	266201.98

Notes:

¹ Source: SCAQMD, 2008. <http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html> [accessed September 2011]

² The SAQMD Model does not go past 2025, thus, for segment durations that last more than 5 years it is assumed that the 2025 emission factors are applicable.

³ The Model's "Other General Industrial Equipment" emission factors were only replaced in the Segment 7 construction emissions modeling for the freight corridor alternatives (Alternatives 6A/6B/6C), because this equipment category does not exist in the other segments nor in Alternative 5A.

Table B.1-2. Equipment Specifications from Offroad 2007

Equipment	Horsepower	Life (Years)	Population	Average Horsepower	Load	Total Horsepower	Average Horsepower by Equipment Type ¹
Cranes	50	19	34	43	0.43	1462	399
	120	19	373	93	0.43	34689	
	175	19	373	149	0.43	55577	
	250	19	723	208	0.43	150384	
	500	19	265	334	0.43	88510	
	750	19	195	562	0.43	109590	
	9999	19	245	1800	0.43	441000	
Crushing/Proc. Equipment	50	16	160	45	0.78	7200	142
	120	16	451	85	0.78	38335	
	175	16	191	171	0.78	32661	
	250	16	19	250	0.78	4750	
	500	16	107	382	0.78	40874	
	750	16	5	602	0.78	3010	
	9999	16	5	1337	0.78	6685	
Excavators	25	4	37	23	0.57	851	168
	50	17	1393	35	0.57	48755	
	120	17	3783	103	0.57	389649	
	175	17	7298	157	0.57	1145786	
	250	17	2968	222	0.57	658896	
	500	17	2141	327	0.57	700107	
	750	17	47	542	0.57	25474	
Graders	50	23	14	36	0.61	504	174
	120	23	934	98	0.61	91532	
	175	23	3191	162	0.61	516942	
	250	23	1980	225	0.61	445500	
	500	23	56	300	0.61	16800	
	750	23	3	635	0.61	1905	

Table B.1-2. Equipment Specifications from Offroad 2007

Equipment	Horsepower	Life (Years)	Population	Average Horsepower	Load	Total Horsepower	Average Horsepower by Equipment Type ¹
Other Construction Equipment	15	3	331	13	0.62	4303	157
	25	6	56	17	0.62	952	
	50	16	86	36	0.62	3096	
	120	16	142	104	0.62	14768	
	175	16	196	137	0.62	26852	
	250	16	0	206	0.62	0	
	500	16	455	327	0.62	148785	
	750	16	0	624	0.62	0	
	9999	16	0	1197	0.62	0	
Other General Industrial Equipment	15	2	147	10	0.51	1470	238
	25	4	197	24	0.51	4728	
	50	16	244	34	0.51	8296	
	120	16	976	97	0.51	94672	
	175	16	979	150	0.51	146850	
	250	16	975	212	0.51	206700	
	500	16	973	415	0.51	403795	
	750	16	243	684	0.51	166212	
	1000	16	148	875	0.51	129500	

Table B.1-2. Equipment Specifications from Offroad 2007

Equipment	Horsepower	Life (Years)	Population	Average Horsepower	Load	Total Horsepower	Average Horsepower by Equipment Type ¹
Other Material Handling Equipment	50	16	7	41	0.59	287	191
	120	16	42	82	0.59	3444	
	175	16	45	165	0.59	7425	
	250	16	107	196	0.59	20972	
	500	16	20	259	0.59	5180	
	9999	16	6	1002	0.59	6012	
Pavers	25	10	15	24	0.62	360	100
	50	26	872	36	0.62	31392	
	120	26	1028	89	0.62	91492	
	175	26	639	165	0.62	105435	
	250	26	77	250	0.62	19250	
	500	26	79	300	0.62	23700	
Paving Equipment	25	6	26	19	0.53	494	104
	50	24	22	36	0.53	792	
	120	24	317	82	0.53	25994	
	175	24	149	152	0.53	22648	
	250	24	42	184	0.53	7728	
Plate Compactors	15	4	322	8	0.43	2576	8
Pumps	15	16	3820	8	0.74	30560	53
	25	16	1141	21	0.74	23961	
	50	16	1989	37	0.74	73593	
	120	16	3900	84	0.74	327600	
	175	16	422	151	0.74	63722	
	250	16	304	217	0.74	65968	
	500	16	6	372	0.74	2232	
	750	16	1	615	0.74	615	
	9999	16	22	1460	0.74	32120	

Table B.1-2. Equipment Specifications from Offroad 2007

Equipment	Horsepower	Life (Years)	Population	Average Horsepower	Load	Total Horsepower	Average Horsepower by Equipment Type ¹
Rollers	15	3	605	9	0.56	5445	95
	25	6	253	19	0.56	4807	
	50	20	787	37	0.56	29119	
	120	20	4225	84	0.56	354900	
	175	20	1699	154	0.56	261646	
	250	20	241	218	0.56	52538	
	500	20	169	312	0.56	52728	
Rubber Tired Dozers	175	32	10	175	0.59	1750	357
	250	32	245	248	0.59	60760	
	500	32	377	358	0.59	134966	
	750	32	133	539	0.59	71687	
	1000	32	9	800	0.59	7200	
Rubber Tired Loaders	25	5	14	25	0.54	350	164
	50	21	272	46	0.54	12512	
	120	21	7395	87	0.54	643365	
	175	21	4168	157	0.54	654376	
	250	21	4145	220	0.54	911900	
	500	21	1725	350	0.54	603750	
	750	21	121	717	0.54	86757	
	1000	21	13	877	0.54	11401	

Table B.1-2. Equipment Specifications from Offroad 2007

Equipment	Horsepower	Life (Years)	Population	Average Horsepower	Load	Total Horsepower	Average Horsepower by Equipment Type ¹
Scrapers	120	26	39	104	0.72	4056	313
	175	26	357	164	0.72	58548	
	250	26	348	232	0.72	80736	
	500	26	958	356	0.72	341048	
	750	26	157	615	0.72	96555	
Signal Boards	15	2	2815	6	0.82	16890	20
	50	16	14	37	0.78	518	
	120	16	229	82	0.78	18778	
	175	16	142	158	0.78	22436	
	250	16	30	216	0.78	6480	
Surfacing Equipment	50	22	20	25	0.45	500	362
	120	22	4	113	0.45	452	
	175	22	3	152	0.45	456	
	250	22	6	239	0.45	1434	
	500	22	50	392	0.45	19600	
	750	22	30	615	0.45	18450	
Tractors/ Loaders/ Backhoes	25	8	282	23	0.55	6486	108
	50	18	1685	44	0.55	74140	
	120	18	22538	75	0.55	1690350	
	175	18	1682	147	0.55	247254	
	250	18	544	249	0.55	135456	
	500	18	878	500	0.55	439000	
	750	18	605	750	0.55	453750	

Table B.1-2. Equipment Specifications from Offroad 2007

Equipment	Horsepower	Life (Years)	Population	Average Horsepower	Load	Total Horsepower	Average Horsepower by Equipment Type ¹
Trenchers	15	2	75	9	0.75	675	63
	25	5	79	35	0.75	2765	
	50	28	3007	35	0.75	105245	
	120	28	4075	69	0.75	281175	
	175	28	446	153	0.75	68238	
	250	28	40	237	0.75	9480	
	500	28	51	331	0.75	16881	
	750	28	6	624	0.75	3744	

Notes:

¹ Average HP by equipment type is a weighted average of equipment population and associated values of HP.

Table B.1-3. SCAQMD Emfac2007 Ver. 2.3 Emission Factors ¹

Emission Factors for Light Duty Truck at 30 mph, 70 °F (g/mi)							
Construction Year	NO_x	CO	PM₁₀	PM_{2.5}	ROG	CO₂	CH₄
2020	0.1839	2.0169	0.0434	0.0285	0.2382	501.4710	0.0204
2021	0.1714	1.9123	0.0438	0.0289	0.2296	503.9834	0.0196
2022	0.1596	1.8063	0.0439	0.0290	0.2209	504.0305	0.0187
2023	0.1491	1.7140	0.0439	0.0291	0.2129	504.0461	0.0179
2024	0.1395	1.6281	0.0439	0.0291	0.2049	504.2195	0.0172
2025	0.1310	1.5560	0.0439	0.0291	0.1977	504.2967	0.0165
Emission Factors for Heavy Duty Truck at 30 mph, 70 °F (g/mi)							
Construction Year	NO_x	CO	PM₁₀	PM_{2.5}	ROG	CO₂	CH₄
2020	5.7874	2.4164	0.2932	0.2311	0.5022	1909.2580	0.0237
2021	5.3571	2.2869	0.2698	0.2101	0.4680	1913.5899	0.0215
2022	4.9885	2.1739	0.2516	0.1934	0.4365	1913.7046	0.0202
2023	4.6826	2.0789	0.2366	0.1797	0.4096	1913.5349	0.0190
2024	4.4236	2.0178	0.2305	0.1740	0.3814	1904.7703	0.0178
2025	4.2339	1.9571	0.2204	0.1649	0.3641	1904.5889	0.0168

Notes:

¹ All the SCAQMD emission factors account for the emissions from start, running and idling exhaust. The ROG emission factors include diurnal, hot soak, running and resting emissions. SCAQMD PM10 and PM2.5 emission factors include tire and brake wear.

**Table B.2-1A. Alternative 5A Segment 1: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 1 - ALT 5	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	62.5	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	3.0	miles
Total Project Area	200.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.0	yd ³ /day
Soil Exported	4000.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.2-1B. Alternative 5A Segment 2: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 2 - ALT 5	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	55.7	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	3.0	miles
Total Project Area	195.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.0	yd ³ /day
Soil Exported	4000.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.2-1C. Alternative 5A Segment 3: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 3 - ALT 5	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	56.9	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	3.0	miles
Total Project Area	200.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	2000.0	yd ³ /day
Soil Exported	2000.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.2-1D. Alternative 5A Segment 4: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 4 - ALT 5	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	77.4	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	5.0	miles
Total Project Area	335.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	2000.0	yd ³ /day
Soil Exported	2000.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.2-1E. Alternative 5A Segment 5: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 5 - ALT 5	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	48.6	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	2.3	miles
Total Project Area	133.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.0	yd ³ /day
Soil Exported	4000.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.2-1F. Alternative 5A Segment 6: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 6 - ALT 5	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	54.2	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	1.4	miles
Total Project Area	96.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	4000.0	yd ³ /day
Soil Exported	0.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.2-1G. Alternative 5A Segment 7: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 7 - ALT 5	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	24.0	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	1.4	miles
Total Project Area	10.0	acres
Maximum Area Disturbed/Day	2.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	2000.0	yd ³ /day
Soil Exported	0.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

Table B.2-2A. Alternative 5A: Road Construction Emissions Model ver. 6.3.2 - Construction Duration by Segment

Segment	1		2		3		4		5		6		7	
Construction Activity	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²
Grubbing/Land Clearing	4.10	6.25	4.60	5.57	4.70	5.69	6.90	7.74	2.90	4.86	2.00	5.42	1.00	2.40
Grading/Excavation	3.30	25.00	2.00	22.28	1.70	22.76	10.50	30.96	1.20	19.44	4.50	21.68	2.00	9.60
Drainage/Utilities/Sub-Grade 6	10	21.88	6.10	19.50	6.50	19.92	8.00	27.09	3.50	17.01	2.70	18.97	3.00	8.40
Paving	49.00	9.38	43.00	8.36	44.00	8.54	52.00	11.61	41.00	7.29	45.00	8.13	18.00	3.60
Totals	62.50	62.50	55.70	55.70	56.90	56.90	77.40	77.40	48.60	48.60	54.20	54.20	24.00	24.00

Notes:

¹ Input parameters were provided by URS.

² Model default values based off of the total duration of construction as input by the user.

Table B.2-2B. Alternative 5A: Road Construction Emissions Model ver. 6.3.2 - Soil Hauling by Segment

Segment	1		2		3		4		5		6		7	
Parameter	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²
Miles/round trip	10	30	10	30	10	30	10	30	10	30	10	30	10	30
Round trips/day	not provided	200	not provided	200	not provided	200	not provided	200	not provided	200	not provided	200	100	100
Vehicle miles traveled/day (calculated)	2000		2000		2000		2000		2000		2000		1000	

Notes:

¹ Input parameters were provided by URS.

² Default values are based off of soil import and export amounts as inputted by the user.

Table B.2-2C. Alternative 5A: Road Construction Emissions Model ver. 6.3.2 - Concrete and Off-Site Material Hauling by Segment

Segment	1	2	3	4	5	6	7
Parameter	User Inputs ¹	User Inputs ¹	User Inputs ¹	User Inputs ¹	User Inputs ¹	User Inputs ¹	User Inputs ¹
Miles/round trip	10	10	10	10	10	10	10
Round trips/day	424	424	424	424	424	424	424
Vehicle miles traveled/day (calculated)	4240	4240	4240	4240	4240	4240	4240

Notes:

¹ Input parameters were provided by URS.

Table B.2-2D. Alternative 5A: Road Construction Emissions Model ver. 6.3.2 - Worker Commute by Segment

Segment	1		2		3		4		5		6		7	
Parameter	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²
Miles/ one-way trip	12	20	12	20	12	20	12	20	12	20	12	20	12	20
One-way trips/day	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. of employees: Grubbing/Land Clearing	30	19	30	19	30	19	30	24	30	17	30	15	12	6
No. of employees: Grading/Excavation	61	23	61	23	61	23	61	28	61	21	61	19	12	9
No. of employees: Drainage/Utilities/Sub-Grade	39	20	39	20	39	20	39	25	39	18	39	16	19	9
No. of employees: Paving	75	23	75	23	75	23	75	28	75	21	75	19	43	7

Notes:

¹ Input parameters were provided by URS.

² Default values for number of employees per activity are based off of default equipment values.

Table B.2-2E. Alternative 5A: Road Construction Emissions Model ver. 6.3.2 - Water Truck Data by Segment

Segment	1				2				3			
Parameter	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³
Grubbing/Land Clearing - Exhaust	4	3	60	120	4	3	60	120	4	3	60	120
Grading/Excavation - Exhaust	4	3	60	120	4	3	60	120	4	3	60	120
Drainage/Utilities/Subgrade	4	2	40	80	4	2	40	80	4	2	40	80

Segment	4				5				6			
Parameter	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³
Grubbing/Land Clearing - Exhaust	4	3	60	120	4	3	60	120	4	3	60	120
Grading/Excavation - Exhaust	4	3	60	120	4	3	60	120	4	3	60	120
Drainage/Utilities/Subgrade	4	2	40	80	4	2	40	80	4	2	40	80

Segment	7			
Parameter	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³
Grubbing/Land Clearing - Exhaust	1	1	10	40
Grading/Excavation - Exhaust	1	1	10	40
Drainage/Utilities/Subgrade	1	1	8	40

Notes:

¹ Input parameters were provided by URS.

² Default values for number of water trucks are based off of the maximum area disturbed per day as inputted by the user.

³ Default values for miles travel per day are based off of the assumption that one water truck will cover 40 miles per day.

Table B.2-2F. Alternative 5A: Road Construction Emissions Model ver. 6.3.2 - Fugitive Dust by Segment

Segment	1		2		3		4		5		6		7	
Parameter	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²
Fugitive Dust - Grubbing/Land Clearing	6.5	15	6.5	15	6.5	15	6.5	15	6.5	15	6.5	15	2.0	2
Fugitive Dust - Grading/Excavation	5.0	15	5.0	15	5.0	15	5.0	15	5.0	15	5.0	15	2.0	2
Fugitive Dust - Drainage/Utilities/Subgrade	3.0	15	3.0	15	3.0	15	3.0	15	3.0	15	3.0	15	2.0	2

Notes

¹ Input parameters were provided by URS.

² Default values are based off of the maximum area disturbed per day as inputted by the user.

Table B.2-2G: Alternative 5A: Road Construction Emissions Model ver. 6.3.2 - Off-Road Equipment per Activity by Segment

Segment	1		2		3		4		5		6		7	
Construction Activity and Equipment	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³
Grubbing/Land Clearing														
Excavators	2	0	2	0	2	0	2	0	2	0	2	0	1	0
Graders	4	0	4	0	4	0	4	0	4	0	4	0	--	0
Rubber Tired Dozers	2	3	2	3	2	3	2	3	2	3	2	3	--	1
Rubber Tired Loaders	4	0	4	0	4	0	4	0	4	0	4	0	--	0
Scrapers	4	6	4	6	4	6	4	6	4	6	4	6	--	1
Signal Boards	--	6	--	6	--	6	--	10	--	5	--	3	--	3
Surfacing equipment	E 2	0	2	0	2	0	2	0	2	0	2	0	--	0
Tractors/Loaders/Backhoes	2	0	2	0	2	0	2	0	2	0	2	0	2	0
Grading/Excavation														
Cranes	1.5	0	1.5	0	1.5	0	1.5	0	1.5	0	1.5	0	--	0
Excavators	1.5	3	1.5	3	1.5	3	1.5	3	1.5	3	1.5	3	2.0	1
Graders	3.5	3	3.5	3	3.5	3	3.5	3	3.5	3	3.5	3	--	1
Other construction equipment	E 0	2	0	2	0	2	0	2	0	2	0	2	--	0
Other material handling equipment	E 1	0	1	0	1	0	1	0	1	0	1	0	--	0
Rollers	0.5	0	0.5	0	0.5	0	0.5	0	0.5	0	0.5	0	--	0
Rubber Tired Dozers	5.5	0	5.5	0	5.5	0	5.5	0	5.5	0	5.5	0	--	0
Rubber Tired Loaders	3.5	3	3.5	3	3.5	3	3.5	3	3.5	3	3.5	3	--	1
Scrapers	22.5	2	22.5	2	22.5	2	22.5	2	22.5	2	22.5	2	--	1
Signal Boards	--	6	--	6	--	6	--	10	--	5	--	3	--	3
Tractors/Loaders/Backhoes	1	0	1	0	1	0	1	0	1	0	1	0	--	0
Drainage/Utilities/Subgrade														
Cranes	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Excavators	4	0	4	0	4	0	4	0	4	0	4	0	1	0
Graders	4	2	4	2	4	2	4	2	4	2	4	2	--	1
Plate Compactors	--	3	--	3	--	3	--	3	--	3	--	3	--	1
Pumps	1	0	1	0	1	0	1	0	1	0	1	0	--	0
Rollers	2	0	2	0	2	0	2	0	2	0	2	0	--	0
Rubber Tired Dozers	1	0	1	0	1	0	1	0	1	0	1	0	--	0
Rubber Tired Loaders	5	0	5	0	5	0	5	0	5	0	5	0	--	0
Scrapers	4	2	4	2	4	2	4	2	4	2	4	2	--	1
Signal Boards	--	6	--	6	--	6	--	10	--	5	--	3	--	3
Tractors/Loaders/Backhoes	4	0	4	0	4	0	4	0	4	0	4	0	4	0
Trenchers	--	3	--	3	--	3	--	3	--	3	--	3	--	1
Paving														
Cranes	14	0	14	0	14	0	14	0	14	0	14	0	2	0
Crushing/Proc. equipment	E 1	0	1	0	1	0	1	0	1	0	1	0	--	0
Excavators	4	0	4	0	4	0	4	0	4	0	4	0	4	0
Graders	4	0	4	0	4	0	4	0	4	0	4	0	2	0
Other material handling equipment	E 9	0	9	0	9	0	9	0	9	0	9	0	4	0
Pavers	2	3	2	3	2	3	2	3	2	3	2	3	--	1
Paving equipment	E 2	3	2	3	2	3	2	3	2	3	2	3	--	1

Table B.2-2G: Alternative 5A: Road Construction Emissions Model ver. 6.3.2 - Off-Road Equipment per Activity by Segment

Segment	1		2		3		4		5		6		7	
Construction Activity and Equipment	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³
Rollers	8	6	8	6	8	6	8	6	8	6	8	6	4	1
Rubber tired rollers	D1	0	1	0	1	0	1	0	1	0	1	0	1	0
Rubber Tired Loaders	3	0	3	0	3	0	3	0	3	0	3	0	3	0
Scrapers	2	0	2	0	2	0	2	0	2	0	2	0	2	0
Signal Boards	--	6	--	6	--	6	--	10	--	5	--	3	--	3
Tractors/Loaders/Backhoes	2	0	2	0	2	0	2	0	2	0	2	0	2	0

Notes:

¹ Input parameters were provided by URS.

² If the user did not provide a number ("--") for a piece of equipment for which a default value was calculated, the default number was used by the model. If the user provided a number for a piece of equipment for which a default value was not calculated, the user-provided number was used by the model.

³ Default values are based off of project length and maximum area disturbed per day as inputted by the user.

**Table B.2-2H. Alternative 5A: Road Construction Emissions
Model ver. 6.3.2 - Equipment Specifications**

Equipment	Default Values	Default Values	Default Values
	Horsepower ¹	Load Factor ¹	Hours/day
Cranes	399	0.43	8
Crushing/Proc. Equipment	142	0.78	8
Excavators	168	0.57	8
Graders	174	0.61	8
Other Construction Equipment	157	0.62	8
Other Material Handling Equipment	191	0.59	8
Pavers	100	0.62	8
Paving Equipment	104	0.53	8
Plate Compactors	8	0.43	8
Pumps	53	0.74	8
Rollers	95	0.56	8
Rubber Tired Dozers	357	0.59	8
Rubber Tired Loaders	164	0.54	8
Scrapers	313	0.72	8
Signal Boards	20	0.78	8
Surfacing Equipment	362	0.45	8
Tractors/Loaders/Backhoes	108	0.55	8
Trenchers	63	0.75	8

Notes:

¹ Default values come from Offroad 2007 equipment specifications.

Table B.2-3: Alternative 5A: Daily Mass Emissions (lbs/day) ¹

Construction Month ²	NO _x	CO	PM ₁₀ (Total) ³	PM _{2.5} (Total) ³	ROG	CO ₂
1	557	478	435	108	84	120,224
2	566	485	435	108	85	124,324
3	784	594	427	112	114	170,637
4	957	685	421	116	138	205,586
5	1,106	773	385	113	159	236,782
6	1,364	904	372	117	193	291,706
7	1,202	860	316	102	172	265,141
8	1,007	800	242	82	148	231,362
9	977	797	215	76	144	234,348
10	1,033	835	194	73	152	259,756
11	1,047	845	188	72	154	266,107
12	1,047	845	188	72	154	266,107
13	1,074	864	178	71	158	278,811
14	1,212	963	120	62	178	345,497
15	1,244	986	107	60	183	361,371
16	1,244	986	107	60	183	361,371
17	1,244	986	107	60	183	361,371
18	1,134	940	91	54	169	337,254
19	1,061	909	80	50	159	321,177
20	1,061	909	80	50	159	321,177
21	1,061	909	80	50	159	321,177
22	1,061	909	80	50	159	321,177
23	1,061	909	80	50	159	321,177
24	1,061	909	80	50	159	321,177
25	934	816	74	45	142	285,741
26	969	844	57	42	147	304,774
27	992	862	46	40	151	317,463
28	992	862	46	40	151	317,463
29	992	862	46	40	151	317,463
30	992	862	46	40	151	317,463
31	992	862	46	40	151	317,463
32	992	862	46	40	151	317,463
33	992	862	46	40	151	317,463
34	992	862	46	40	151	317,463
35	992	862	46	40	151	317,463
36	992	862	46	40	151	317,463
37	992	862	46	40	151	317,463
38	992	862	46	40	151	317,463
39	992	862	46	40	151	317,463
40	992	862	46	40	151	317,463
41	992	862	46	40	151	317,463
42	992	862	46	40	151	317,463
43	992	862	46	40	151	317,463

Table B.2-3: Alternative 5A: Daily Mass Emissions (lbs/day) ¹

Construction Month ²	NO _x	CO	PM ₁₀ (Total) ³	PM _{2.5} (Total) ³	ROG	CO ₂
44	992	862	46	40	151	317,463
45	992	862	46	40	151	317,463
46	992	862	46	40	151	317,463
47	992	862	46	40	151	317,463
48	992	862	46	40	151	317,463
49	922	805	43	37	140	296,357
50	817	718	38	33	125	264,698
51	817	718	38	33	125	264,698
52	817	718	38	33	125	264,698
53	817	718	38	33	125	264,698
54	817	718	38	33	125	264,698
55	682	605	32	28	105	222,670
56	598	534	28	24	92	196,284
57	465	418	21	19	72	153,941
58	315	289	15	13	49	106,307
59	315	289	15	13	49	106,307
60	315	289	15	13	49	106,307
61	315	289	15	13	49	106,307
62	315	289	15	13	49	106,307
63	234	217	11	9	37	79,848
64	152	145	7	6	24	53,388
65	152	145	7	6	24	53,388
66	152	145	7	6	24	53,388
67	152	145	7	6	24	53,388
68	152	145	7	6	24	53,388
69	152	145	7	6	24	53,388
70	152	145	7	6	24	53,388
71	152	145	7	6	24	53,388
72	152	145	7	6	24	53,388
73	152	145	7	6	24	53,388
74	152	145	7	6	24	53,388
75	152	145	7	6	24	53,388
76	152	145	7	6	24	53,388
77	152	145	7	6	24	53,388
78	61	58	3	2	10	21,355

Notes:

¹ It is assumed that construction of segments 1 through 7 will occur simultaneously. Overlapping construction activities are accounted for by prorating the mass emissions for that month.

² Construction durations listed by URS and the number of construction months for which mass emissions are presented do not coincide. The difference in duration is due to the Road Construction Models inability to account breaks in construction due to other planned activities.

³ PM₁₀ and PM_{2.5} total mass emissions are the sum of combustion and fugitive dust emissions.

Table B.2-4. Segment Peak Daily Mass Emissions for Construction of Alternative 5A

Pollutant	Segment Peak Daily Mass Emissions (lb/day)						
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7
CO	176	176	176	177	174	173	93
NO _x	287	287	287	277	285	284	127
PM ₁₀	69	69	69	69	69	69	22
<i>Exhaust</i>	4	4	4	4	4	4	2
<i>Fugitive Dust</i>	65	65	65	65	65	65	20
PM _{2.5}	21	21	21	21	21	21	6
<i>Exhaust</i>	11	11	11	10	10	10	1
<i>Fugitive Dust</i>	10	10	10	10	10	10	4
ROG	40	40	40	39	40	39	17

Notes:

Emissions are from construction equipment

No green construction equipment

Values for exhaust and fugitive dust are not peak values, but represent the constituents of PM₁₀ and PM_{2.5} on the peak day.

All numbers are rounded to integer values

**Table B.3-1A. Alternatives 6A/B/C Segment 1: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 1 - ALT 6	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	80.5	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	3.0	miles
Total Project Area	200.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.0	yd ³ /day
Soil Exported	4000.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.3-1B. Alternatives 6A/B/C Segment 2: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 2 - ALT 6	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	73.7	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	3.0	miles
Total Project Area	219.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.0	yd ³ /day
Soil Exported	4000.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.3-1C. Alternatives 6A/B/C Segment 3: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 3 - ALT 6	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	85.0	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	3.0	miles
Total Project Area	214.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	2000.0	yd ³ /day
Soil Exported	2000.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.3-1D. Alternatives 6A/B/C Segment 4: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 4 - ALT 6	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	87.4	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	5.0	miles
Total Project Area	380.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	2000.0	yd ³ /day
Soil Exported	2000.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.3-1E. Alternatives 6A/B/C Segment 5: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 5 - ALT 6	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	66.6	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	2.3	miles
Total Project Area	176.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.0	yd ³ /day
Soil Exported	4000.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.3-1F. Alternatives 6A/B/C Segment 6: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 6 - ALT 6	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	72.2	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	1.4	miles
Total Project Area	137.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	4000.0	yd ³ /day
Soil Exported	0.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

**Table B.3-1G. Alternatives 6A/B/C Segment 7: Road Construction
Emissions Model ver. 6.3.2 - Data Entry Sheet**

Road Construction Emissions Model Data Entry Worksheet		Version 6.3.2
		
Input Type		
Project Name	710 Segment 7 - ALT 6	
Construction Start Year	2020	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	46.0	months
Predominant Soil/Site Type	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	1.4	miles
Total Project Area	42.0	acres
Maximum Area Disturbed/Day	15.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	2000.0	yd ³ /day
Soil Exported	0.0	yd ³ /day
Average Truck Capacity	20.0	yd ³

Notes:

Input parameters were provided by URS.

Table B.3-2A. Alternatives 6A/B/C: Road Construction Emissions Model ver. 6.3.2 - Construction Duration by Segment

Segment	1		2		3		4		5		6		7	
Construction Activity	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²	User Override of Construction Months ¹	Program Calculated Months ²
Grubbing/Land Clearing	4.10	8.05	4.60	7.37	4.70	8.50	6.90	8.74	2.90	6.66	2.00	7.22	2.00	4.60
Grading/Excavation	3.30	32.20	2.00	29.48	1.70	34.00	10.50	34.96	1.20	26.64	4.50	28.88	5.00	18.40
Drainage/Utilities/Sub-Grade 610		28.18	6.10	25.80	6.50	29.75	8.00	30.59	3.50	23.31	2.70	25.27	3.00	16.10
Paving	67.00	12.08	61.00	11.06	72.10	12.75	62.00	13.11	59.00	9.99	63.00	10.83	36.00	6.90
Totals	80.50	80.50	73.70	73.70	85.00	85.00	87.40	87.40	66.60	66.60	72.20	72.20	46.00	46.00

Notes:

¹ Input parameters were provided by URS.

² Model default values based off of the total duration of construction as input by the user.

Table B.3-2B. Alternatives 6A/B/C: Road Construction Emissions Model ver. 6.3.2 - Soil Hauling by Segment

Segment	1		2		3		4		5		6		7	
Parameter	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²	User Override of Soil Hauling Defaults ¹	Default Values ²
Miles/round trip	10	30	10	30	10	30	10	30	10	30	10	30	10	30
Round trips/day	not provided	200	not provided	200	not provided	200	not provided	200	not provided	200	not provided	200	100	100
Vehicle miles traveled/day (calculated)	2000		2000		2000		2000		2000		2000		1000	

Notes:

¹ Input parameters were provided by URS.

² Default values are based off of soil import and export amounts as inputted by the user.

**Table B.3-2C. Alternatives 6A/B/C: Road Construction Emissions Model ver. 6.3.2 -
Concrete and Off-Site Material Hauling by Segment**

Segment	1	2	3	4	5	6	7
Parameter	User Inputs ¹	User Inputs ¹	User Inputs ¹	User Inputs ¹	User Inputs ¹	User Inputs ¹	User Inputs ¹
Miles/round trip	10	10	10	10	10	10	10
Round trips/day	424	424	424	424	424	424	424
Vehicle miles traveled/day (calculated)	4240	4240	4240	4240	4240	4240	4240

Notes:

¹ Input parameters were provided by URS.

Table B.3-2D. Alternatives 6A/B/C: Road Construction Emissions Model ver. 6.3.2 - Worker Commute by Segment

Segment	1		2		3		4		5		6		7	
Parameter	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²	User Override of Worker Commute Default Values ¹	Default Values ²
Miles/ one-way trip	12	20	12	20	12	20	12	20	12	20	12	20	12	20
One-way trips/day	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. of employees: Grubbing/Land Clearing	30	19	30	19	30	19	30	24	30	17	30	15	30	15
No. of employees: Grading/Excavation	61	23	61	23	61	23	61	28	61	21	61	19	42	19
No. of employees: Drainage/Utilities/Sub-Grade	39	20	39	20	39	20	39	25	39	18	39	16	39	16
No. of employees: Paving	75	23	75	23	75	23	75	28	75	21	75	19	56	19

Notes:

¹ Input parameters were provided by URS.

² Default values for number of employees per activity are based off of default equipment values.

Table B.3-2E. Alternatives 6A/B/C: Road Construction Emissions Model ver. 6.3.2 - Water Truck Data by Segment

Segment	1				2				3			
Parameter	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³
Grubbing/Land Clearing - Exhaust	4	3	60	120	4	3	60	120	4	3	60	120
Grading/Excavation - Exhaust	4	3	60	120	4	3	60	120	4	3	60	120
Drainage/Utilities/Subgrade	4	2	40	80	4	2	40	80	4	2	40	80

Segment	4				5				6			
Parameter	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³
Grubbing/Land Clearing - Exhaust	4	3	60	120	4	3	60	120	4	3	60	120
Grading/Excavation - Exhaust	4	3	60	120	4	3	60	120	4	3	60	120
Drainage/Utilities/Subgrade	4	2	40	80	4	2	40	80	4	2	40	80

Segment	7			
Parameter	User Override of Default # Water Trucks ¹	Program Estimate of # of Water Trucks ²	User Override of Miles Traveled/ Day ¹	Default Values of Miles Traveled/ Day ³
Grubbing/Land Clearing - Exhaust	4	3	60	120
Grading/Excavation - Exhaust	4	3	60	120
Drainage/Utilities/Subgrade	4	2	40	80

Notes:

¹ Input parameters were provided by URS.

² Default values for number of water trucks are based off of the maximum area disturbed per day as inputted by the user.

³ Default values for miles travel per day are based off of the assumption that one water truck will cover 40 miles per day.

Table B.3-2F. Alternatives 6A/B/C: Road Construction Emissions Model ver. 6.3.2 - Fugitive Dust by Segment

Segment	1		2		3		4		5		6		7	
Parameter	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²	User Override of Maximum Acreage Disturbed/ Day ¹	Default Maximum Acreage Disturbed/ Day ²
Fugitive Dust - Grubbing/Land Clearing	6.5	15	6.5	15	6.5	15	6.5	15	6.5	15	6.5	15	6.5	15
Fugitive Dust - Grading/Excavation	5.0	15	5.0	15	5.0	15	5.0	15	5.0	15	5.0	15	5.0	15
Fugitive Dust - Drainage/Utilities/Subgrade	3.0	15	3.0	15	3.0	15	3.0	15	3.0	15	3.0	15	3.0	15

Notes:

¹ Input parameters were provided by URS.

² Default values are based off of the maximum area disturbed per day as inputted by the user.

Table B.3-2G. Alternatives 6A/B/C: Road Construction Emissions Model ver. 6.3.2 - Off-Road Equipment per Activity by Segment

Segment	1		2		3		4		5		6		7	
Construction Activity and Equipment	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³
Grubbing/Land Clearing														
Excavators	2	0	2	0	2	0	2	0	2	0	2	0	2	0
Graders	4	0	4	0	4	0	4	0	4	0	4	0	4	0
Rubber Tired Dozers	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Rubber Tired Loaders	4	0	4	0	4	0	4	0	4	0	4	0	4	0
Scrapers	4	6	4	6	4	6	4	6	4	6	4	6	4	6
Signal Boards	--	6	--	6	--	6	--	10	--	5	--	3	--	3
Surfacing equipment	E 2	0	2	0	2	0	2	0	2	0	2	0	2	0
Tractors/Loaders/Backhoes	2	0	2	0	2	0	2	0	2	0	2	0	2	0
Grading/Excavation														
Cranes	1.5	0	1.5	0	1.5	0	1.5	0	1.5	0	1.5	0	1.5	0
Excavators	1.5	3	1.5	3	1.5	3	1.5	3	1.5	3	1.5	3	1.5	3
Graders	3.5	3	3.5	3	3.5	3	3.5	3	3.5	3	3.5	3	4	3
Other construction equipment	E 0	2	0	2	0	2	0	2	0	2	0	2	0	2
Other General Industrial Equipment	--	0	--	0	--	0	--	0	--	0	--	0	1	0
Other material handling equipment	E 1	0	1	0	1	0	1	0	1	0	1	0	0	0
Rollers	0.5	0	0.5	0	0.5	0	0.5	0	0.5	0	0.5	0	0.5	0
Rubber Tired Dozers	5.5	0	5.5	0	5.5	0	5.5	0	5.5	0	5.5	0	5.5	0
Rubber Tired Loaders	3.5	3	3.5	3	3.5	3	3.5	3	3.5	3	3.5	3	3.5	3
Scrapers	22.5	2	22.5	2	22.5	2	22.5	2	22.5	2	22.5	2	10	2
Signal Boards	--	6	--	6	--	6	--	10	--	5	--	3	--	3
Tractors/Loaders/Backhoes	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Drainage/Utilities/Subgrade														
Cranes	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Excavators	4	0	4	0	4	0	4	0	4	0	4	0	4	0
Graders	4	2	4	2	4	2	4	2	4	2	4	2	4	2
Plate Compactors	--	3	--	3	--	3	--	3	--	3	--	3	0	3
Pumps	1	0	1	0	1	0	1	0	1	0	1	0	--	0
Rollers	2	0	2	0	2	0	2	0	2	0	2	0	2	0
Rubber tired dozers	D1	0	1	0	1	0	1	0	1	0	1	0	1	0
Rubber Tired Loaders	5	0	5	0	5	0	5	0	5	0	5	0	5	0
Scrapers	4	2	4	2	4	2	4	2	4	2	4	2	4	2
Signal Boards	--	6	--	6	--	6	--	10	--	5	--	3	--	3
Tractors/Loaders/Backhoes	4	0	4	0	4	0	4	0	4	0	4	0	4	0
Trenchers	--	3	--	3	--	3	--	3	--	3	--	3	0	3
Paving														
Cranes	14	0	14	0	14	0	14	0	14	0	14	0	4	0
Crushing/Proc. equipment	E 1	0	1	0	1	0	1	0	1	0	1	0	1	0
Excavators	4	0	4	0	4	0	4	0	4	0	4	0	4	0
Graders	4	0	4	0	4	0	4	0	4	0	4	0	4	0
Other General Industrial Equipment	--	0	--	0	--	0	--	0	--	0	--	0	3	0
Other material handling equipment	E 9	0	9	0	9	0	9	0	9	0	9	0	--	0

Table B.3-2G. Alternatives 6A/B/C: Road Construction Emissions Model ver. 6.3.2 - Off-Road Equipment per Activity by Segment

Segment	1		2		3		4		5		6		7	
Construction Activity and Equipment	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³	User Override of Number of Vehicles ^{1,2}	Default Number of Vehicles ³
Pavers	2	3	2	3	2	3	2	3	2	3	2	3	0	3
Paving equipment	E 2	3	2	3	2	3	2	3	2	3	2	3	2	3
Rollers	8	6	8	6	8	6	8	6	8	6	8	6	8	6
Rubber tired rollers	D1	0	1	0	1	0	1	0	1	0	1	0	1	0
Rubber Tired Loaders	3	0	3	0	3	0	3	0	3	0	3	0	3	0
Scrapers	2	0	2	0	2	0	2	0	2	0	2	0	2	0
Signal Boards	--	6	--	6	--	6	--	10	--	5	--	3	--	3
Tractors/Loaders/Backhoes	2	0	2	0	2	0	2	0	2	0	2	0	2	0

Notes:

¹ Input parameters were provided by URS.

² If the user did not provide a number ("--") for a piece of equipment for which a default value was calculated, the default number was used by the model. If the user provided a number for a piece of equipment for which a default value was not calculated, the user-provided number was used by the model.

³ Default values are based off of project length and maximum area disturbed per day as inputted by the user.

Table B.3-2H. Alternatives 6A/B/C: Road Construction Emissions
Model ver. 6.3.2 - Equipment Specifications

Equipment	Default Values	Default Values	Default Values
	Horsepower ¹	Load Factor ¹	Hours/day
Cranes	399	0.43	8
Crushing/Proc. Equipment	142	0.78	8
Excavators	168	0.57	8
Graders	174	0.61	8
Other Construction Equipment	157	0.62	8
Other General Industrial Equipment	238	0.51	8
Other Material Handling Equipment	191	0.59	8
Pavers	100	0.62	8
Paving Equipment	104	0.53	8
Plate Compactors	8	0.43	8
Pumps	53	0.74	8
Rollers	95	0.56	8
Rubber Tired Dozers	357	0.59	8
Rubber Tired Loaders	164	0.54	8
Scrapers	313	0.72	8
Signal Boards	20	0.78	8
Surfacing Equipment	362	0.45	8
Tractors/Loaders/Backhoes	108	0.55	8
Trenchers	63	0.75	8

Notes:

¹ Default values come from Offroad 2007 equipment specifications.

Table B.3-3. Alternatives 6A/B/C: Daily Mass Emissions (lbs/day) ¹

Construction Month ²	NO _x	CO	PM ₁₀ (Total) ³	PM _{2.5} (Total) ³	ROG	CO ₂
1	620	531	482	120	93	134,308
2	620	531	482	120	93	134,308
3	925	683	463	124	134	198,500
4	1,103	772	456	127	158	236,392
5	1,252	860	421	124	179	267,588
6	1,510	992	408	129	213	322,513
7	1,249	883	367	114	180	266,445
8	966	793	270	87	145	215,960
9	930	789	243	80	141	218,932
10	978	826	221	77	148	244,324
11	1,029	863	188	71	154	270,371
12	1,029	863	188	71	154	270,371
13	1,052	882	176	70	157	283,066
14	1,169	978	118	60	175	349,706
15	1,196	1,001	104	58	180	365,573
16	1,196	1,001	104	58	180	365,573
17	1,196	1,001	104	58	180	365,573
18	1,087	954	88	52	165	341,456
19	1,013	923	78	48	155	325,378
20	1,013	923	78	48	155	325,378
21	1,013	923	78	48	155	325,378
22	1,013	923	78	48	155	325,378
23	1,013	923	78	48	155	325,378
24	1,013	923	78	48	155	325,378
25	1,013	923	78	48	155	325,378
26	1,046	951	61	45	160	344,408
27	1,069	969	50	43	164	357,094
28	1,069	969	50	43	164	357,094
29	1,069	969	50	43	164	357,094
30	1,069	969	50	43	164	357,094
31	1,069	969	50	43	164	357,094
32	1,069	969	50	43	164	357,094
33	1,069	969	50	43	164	357,094
34	1,069	969	50	43	164	357,094
35	1,069	969	50	43	164	357,094
36	1,069	969	50	43	164	357,094
37	1,069	969	50	43	164	357,094
38	1,069	969	50	43	164	357,094
39	1,069	969	50	43	164	357,094
40	1,069	969	50	43	164	357,094
41	1,069	969	50	43	164	357,094
42	1,069	969	50	43	164	357,094
43	1,069	969	50	43	164	357,094

Table B.3-3. Alternatives 6A/B/C: Daily Mass Emissions (lbs/day) ¹

Construction Month ²	NO _x	CO	PM ₁₀ (Total) ³	PM _{2.5} (Total) ³	ROG	CO ₂
44	1,069	969	50	43	164	357,094
45	1,069	969	50	43	164	357,094
46	1,069	969	50	43	164	357,094
47	939	856	43	38	146	317,353
48	939	856	43	38	146	317,353
49	939	856	43	38	146	317,353
50	939	856	43	38	146	317,353
51	939	856	43	38	146	317,353
52	939	856	43	38	146	317,353
53	939	856	43	38	146	317,353
54	939	856	43	38	146	317,353
55	939	856	43	38	146	317,353
56	939	856	43	38	146	317,353
57	939	856	43	38	146	317,353
58	939	856	43	38	146	317,353
59	939	856	43	38	146	317,353
60	939	856	43	38	146	317,353
61	939	856	43	38	146	317,353
62	939	856	43	38	146	317,353
63	939	856	43	38	146	317,353
64	939	856	43	38	146	317,353
65	939	856	43	38	146	317,353
66	939	856	43	38	146	317,353
67	873	799	40	35	136	296,256
68	774	713	36	31	121	264,611
69	774	713	36	31	121	264,611
70	774	713	36	31	121	264,611
71	774	713	36	31	121	264,611
72	774	713	36	31	121	264,611
73	648	601	30	26	101	222,598
74	569	530	26	23	89	196,222
75	458	430	21	18	72	159,186
76	458	430	21	18	72	159,186
77	458	430	21	18	72	159,186
78	458	430	21	18	72	159,186
79	458	430	21	18	72	159,186
80	458	430	21	18	72	159,186
81	381	359	17	15	60	132,735
82	303	287	14	12	48	106,283
83	303	287	14	12	48	106,283
84	303	287	14	12	48	106,283
85	303	287	14	12	48	106,283
86	149	145	7	6	24	53,382

Table B.3-3. Alternatives 6A/B/C: Daily Mass Emissions (lbs/day) ¹

Construction Month ²	NO _x	CO	PM ₁₀ (Total) ³	PM _{2.5} (Total) ³	ROG	CO ₂
87	149	145	7	6	24	53,382
88	60	58	3	2	10	21,353

Notes:

¹ It is assumed that construction of segments 1 through 7 will occur simultaneously. Overlapping construction activities are accounted for by prorating the mass emissions for that month.

² Construction durations listed by URS and the number of construction months for which mass emissions are presented do not coincide. The difference in duration is due to the Road Construction Models inability to account breaks in construction due to other planned activities.

³ PM₁₀ and PM_{2.5} total mass emissions are the sum of combustion and fugitive dust emissions.

Table B.3-4. Segment Peak Daily Mass Emissions for Construction of Alternatives 6A/B/C

Pollutant	Segment Peak Daily Mass Emissions (lb/day)						
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7
CO	176	176	176	177	174	173	116
NO_x	287	287	287	277	285	284	174
PM₁₀	69	69	69	69	69	69	69
<i>Exhaust</i>	4	4	4	4	4	4	4
<i>Fugitive Dust</i>	65	65	65	65	65	65	65
PM_{2.5}	21	21	21	21	21	21	17
<i>Exhaust</i>	11	11	11	10	10	10	3
<i>Fugitive Dust</i>	10	10	10	10	10	10	14
ROG	40	40	40	39	40	39	24

Notes:

Emissions are from construction equipment

No green construction equipment

Values for exhaust and fugitive dust are not peak values, but represent the constituents of PM₁₀ and PM_{2.5} on the peak day.

All numbers are rounded to integer values

Table B.4-1 Peak Daily Mass Emissions for Construction

Pollutant	Peak Day (All Segments Total) (lbs/day)		Peak Day (Single Segment) (lbs/day)		SCAQMD CEQA Threshold (lbs/day)
	Alt. 5A	Alt. 6A/B/C	Alt. 5A	Alt. 6A/B/C	
NO _x	1,364	1,510	287	287	100
CO	986	1,001	177	177	550
PM ₁₀	435	482	69	69	150
<i>Exhaust</i>	25	27	4	4	-
<i>Fugitive Dust</i>	410	455	65	65	-
PM _{2.5}	117	129	21	21	55
<i>Exhaust</i>	52	57	11	11	-
<i>Fugitive Dust</i>	65	72	10	10	-
ROG	193	213	40	40	75
CO ₂	361,371	365,573	61,861	61,861	-

Notes:

Emissions are from construction equipment

No green construction equipment

Values for exhaust and fugitive dust are not peak values, but represent the constituents of PM₁₀ and PM_{2.5} on the peak day.

Assumed that all seven segments are constructed simultaneously (longest duration is 87.4 months)

Appendix C

Operational Emissions

This Appendix discusses the methodology used to develop the emission inventories for the 2008 baseline and 2035 alternatives for both the criteria pollutants and the MSAT from traffic operations. These emission inventories were used to assess incremental emission impacts and for the I-710 freeway itself, were used as the basis for emission inputs to the air quality and health risk modeling for the Project.

C.1. Emission Inventory Development Methodology

Emission inventories were developed for the exhaust pollutants NO_x, CO, PM₁₀, PM_{2.5}, ROG, SO₂, TOG and DPM using the equation shown below.

$$\text{Total Exhaust Emissions for a Pollutant (lb/day)} = \frac{1}{453.59} \times \sum_k \sum_j \sum_i EF_{i,S_{j,k}} \times VMT_{i,j,k}$$

.....Equation C.1

Where,

- 453.59 = Conversion factor from pounds to grams
- i = A particular vehicle class. Vehicle classes used in this analysis include automobiles, light-heavy duty trucks (LHDT), medium-heavy duty trucks (MHDT), heavy-heavy duty trucks (HHDT), and port trucks
- j = A particular time period. A day was split into four time periods in this analysis: AM (6 AM to 9 AM), mid-day (9 AM to 3 PM), PM (3 PM to 7 PM), and night time (7 PM to 6 AM)
- k = A particular traffic link or section of a roadway in the region, for which emissions are calculated.
- S_{j,k} = Average vehicle speed during the jth time period for the kth link.
- VMT_{i,j,k} = Total vehicle miles travelled by the ith vehicle class during the jth time period in the kth traffic link. This is calculated as a product of length of the kth traffic link and the traffic volume of the ith vehicle class during the jth time period flowing through the kth traffic link
- EF_{i,S_{j,k}} = Pollutant emission factor of the ith vehicle class at speed S_{j,k} expressed in grams per miles

Total exhaust emissions were calculated for three regions (see Figure ES.1 in the main report): the South Coast Air Basin (SCAB), the Area of Interest (AOI), and the I-710 freeway (which may include a freight corridor and related ramps, depending on the alternative). The various input parameters in Equation C.1 above (such as link length, average vehicle speed, and traffic volumes) were obtained from the traffic data as described in Section C.2. The traffic model used in this analysis assigns one-directional traffic flows for traffic links (sections of roadways) that represent freeways, ramps and one-way streets. All other traffic links were assigned bidirectional vehicle flow. For bi-directional traffic links, average speeds and vehicle flows were provided in the traffic data for each individual direction. Emissions in each direction were

calculated separately and summed up using the methodology shown in the Equation C.1. The emission factors used in Equation C.1 were generated by running the EMFAC2007¹ model for both 2008 (baseline year) and 2035 and further adjusted as described in Section C.

Total PM₁₀ and PM_{2.5} emission inventories were developed by summing up the exhaust and entrained road dust PM emissions. Exhaust PM emissions were calculated using Equation C.1 and the entrained PM emissions were calculated based on EPA's AP-42 equation for paved road dust (released January 2011). Section C.4 provides details of the methodology used to calculate the entrained PM emissions.

Emission inventories of the MSAT were calculated from the exhaust TOG emission inventory using speciation profiles for the MSAT of interest. Section C.5 provides a description of this methodology, and Section C.6 presents the unique nature of the 2035 DPM emission factor.

¹ Note that CARB released EMFAC2011 in September 2011, after the emission analysis was completed and modeling was well underway. Based on an initial review, it is not anticipated that the results of the analysis using the adjusted EMFAC2007 emission factors would be substantially changed using EMFAC2011. For example, EMFAC2011 reflects CARB's October 2008 "Regulation to Control Emission from In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks" and December 2008 "Truck and Bus Regulation." See Section C.3 for more details.

C.2. Traffic Data

Cambridge Systematics Incorporated (CSI), a member of the I-710 Project Team, ran a modified version of the Southern California Association of Governments (SCAG) Regional Transportation Plan Travel Demand Model (the SCAG model) for the years 2008 and 2035 to estimate the traffic volumes and speeds for the various traffic links in the SCAG network for the I-710 Project. The output of the I-710 Traffic Model provides several parameters including a unique identifier for each link in the SCAG network (Link ID), description of each link (road name, route name, and road type), link lengths, average vehicle speeds and traffic volumes for each link during four different time periods (AM, mid-day, PM and night time). Within each time period traffic flow was sub-divided into five different vehicle classes as shown below.

- Automobiles (further divided into three sub-classes: drive alone, shared ride, and 3-person carpool),
- Light-heavy duty trucks,
- Medium-heavy duty trucks,
- Heavy-heavy duty trucks, and
- Port trucks.

To calculate the emissions using Equation C.1 the vehicle classes from the I-710 Traffic Model had to be matched with the vehicle classes in the EMFAC2007 model (EMFAC2007 provides emission factors). Table 1 documents this matching process.

Table 1: Matching of EMFAC2007 Vehicle Classification to I-710 Traffic Model Classification			
SCAG Model Vehicle Class	Corresponding EMFAC2007 Classes	Description	EMFAC2007 Weight Class (lbs)
Automobile (Drive Alone, 2 Person and 3 Person Carpool)	PC, LDT1, LDT2, MDV	Passenger cars, light duty trucks, medium duty trucks and motorcycles	0 - 8,500
Light Duty Trucks	LHDT1, LHDT2	Light-heavy duty trucks	8,501 - 14,000
Medium Duty Trucks	MHDT	Medium-heavy duty trucks	14,001 - 33,000
Heavy Duty Trucks	HHDT	Heavy-heavy duty trucks	33,001 - 60,000
Port Trucks	HHDT	Heavy-heavy duty trucks	33,001 - 60,000

For air quality and health risk modeling of I-710 freeway emissions, the I-710 Traffic Model results were further adjusted and/or calibrated using actual traffic counts at specific locations on the I-710 to provide more accurate traffic volumes (referred to as “post-processed traffic data” hereinafter). The post-processed traffic volumes data (Tables C.3 -1.A through C.3 - 6.D) were

available for the traffic links on the I-710 freeway and were used for calculating the emissions for the I-710 freeway links (See Tables C.4 - 1 through C.5 - 6) used in the impact modeling. Average vehicle speeds from the I-710 Traffic Model for the respective links were used for emission calculations. The traffic link lengths for the I-710 freeway were obtained from the URS geometric design. For the I-710 freeway, ENVIRON used the emissions of the post-processed traffic data, and I-710 freeway geometrics (link length and elevation) to evaluate ambient air quality impacts and health risks as described in Appendices D and E.

C.3. Emission Factors

ENVIRON used the EMFAC2007 model to generate the emissions factors for the various criteria pollutants. EMFAC (short for Emission FACtor) is a computer model developed by CARB and can be used for estimating emission rates for on-road mobile sources for calendar years from 1970 to 2040 operating in California. Federal Register release Vol. 73, No. 13 on January 18, 2008 states that starting April 18, 2008, EMFAC2007 is required to be used statewide in all new regional emissions analyses and carbon monoxide (CO) hot-spot analyses for transportation conformity determinations in California. (Note that CARB released EMFAC2011 in September 2011, after the emission analysis was completed and modeling was well underway. Based on an initial review, it is not anticipated that the results of the analysis using the adjusted EMFAC2007 emission factors would be substantially changed using EMFAC2011. For example, EMFAC2011 reflects CARB's October 2008 "Regulation to Control Emission from In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks" and December 2008 "Truck and Bus Regulation." See below for more details.)

Emissions from the on-road vehicles can be categorized as follows:

- **Combustion Emissions (g/mile or g/hr for idling):** Combustion emissions (i.e., exhaust emissions) from the combustion of fuel, which are the main source of emissions for all pollutants. EMFAC2007 has the capability to provide emission factors for user defined vehicle speeds. EMFAC2007 provides combustion emission factors for the following pollutants: TOG, ROG, CO, NO_x, CO₂, PM₁₀, PM_{2.5} and SO₂.
- **Tire Wear (g/mile) and Brake Wear (g/mile):** Particulate emissions from tires and brakes occurring as a result of operational wear. EMFAC2007 provides PM₁₀ and PM_{2.5} emission factors for tire and brake wear.
- **Evaporative Running Loss Emissions (g/min):** EMFAC2007 also provides the evaporative hydrocarbon emission factors as a result of hot fuel vapor release during the operation of the vehicles. These hydrocarbon emissions are categorized as reactive organic gases (ROG) and toxic organic gases (TOG) by EMFAC2007.
- **Other Emissions:** These include start-up exhaust emissions, resting losses, and other evaporative emissions including hot soak emissions, partial day diurnal loss, multi day diurnal loss, partial day resting loss, multi day resting loss. EMFAC2007 provides emission factors for the appropriate pollutants from each of these sources as well.

For the I-710 Project, ENVIRON included the emission factors for combustion emissions, tire and brake wear, and evaporative running loss emissions. Other emissions mentioned above were not evaluated for this Project because the Project should have no quantifiable effect on these emission modes.

The exhaust NO_x, CO and SO₂ emissions factors used in this Project were the combustion emission factors (g/mi or g/hr (idling)) obtained from the EMFAC2007 model. The idling PM, ROG, and TOG emission factors were also directly obtained from the combustion emissions

output of EMFAC2007. The non-idling PM, ROG, and TOC emission factors are derived as follows.

Exhaust PM emission factor for non-idling:

$$PM_{exhaust} = PM_c + PM_t + PM_b$$

.....Equation C.2

Where,

- $PM_{exhaust}$ = Non-Idle/running exhaust particulate matter emission factor (g/mi)
- PM_c = Non-Idle/running combustion emission factor for PM (g/mi)
- PM_t = Tire wear emission factor for PM (g/mi)
- PM_b = Brake wear emission factor for PM (g/mi)

The non-idling hydrocarbon HC (ROG and TOG) exhaust emission factors:

$$HC_{exhaust} = HC_c + HC_e \times \frac{60}{S}$$

.....Equation C.3

Where,

- $HC_{exhaust}$ = Non-Idle exhaust hydrocarbon emission factor (g/mi)
- HC_c = Non-Idle combustion emission factor for PM (g/mi)
- HC_e = Evaporative running loss emission factor for HC (g/min)
- S = Speed (mi/hr)
- 60 = Conversion factor from g/min to g/hr

(Note that ROG emissions are often referred to as VOC emissions. For the purposes of this analysis, they can be considered equivalent.) Emissions of individual MSAT are calculated by applying the compound-specific MSAT speciation profiles for exhaust and evaporative emissions to TOG emission estimates.

Besides emission factors, EMFAC2007 provides fuel usage data in g/mi (running) and g/hr (idling), which were used to develop GHG emission inventories as described in Appendix F. Vehicle weight data provided by EMFAC2007 were used to develop the traffic entrained PM emission inventories (Section C.4).

EMFAC2007 Input Data

The input data used for the EMFAC2007 model runs are presented in the following sections.

- Vehicle information:
 - Vehicle class: EMFAC2007 divides the on-road fleet into 13 different vehicle classes (as shown in the Table below).

Table 2: Vehicle Classes Modeled In EMFAC2007				
Vehicle Class	Fuel Type	Code	Description	Weight Class (lbs)
1	Gas, Diesel, and Electric	PC	Passenger Cars	All
2	Gas, Diesel, and Electric	T1	Light-Duty Trucks	0-3750
3	Gas, Diesel	T2	Light-Duty Trucks	3751-5750
4	Gas, Diesel	T3	Medium-Duty Trucks	5751-8500
5	Gas, Diesel	T4	Light-Heavy-Duty	8501-10000
6	Gas, Diesel	T5	Light-Heavy-Duty	10001-14000
7	Gas, Diesel	T6	Medium-Heavy-Duty	14001-33000
8	Gas, Diesel	T7	Heavy-Heavy-Duty	33001-60000
9	Gas, Diesel	OB	Other Buses	All
10	Diesel	UB	Urban Buses	All
11	Gas	MC	Motorcycles	All
12	Gas, Diesel	SB	School Buses	All
13	Gas, Diesel	MH	Motor Homes	All

- Fuel type: Gasoline, Diesel and Electric, wherever applicable.
- Model year: All available vehicle model years for South Coast fleet were used.
- Inspection and Maintenance (I/M) condition: Vehicular emissions increase with their age as a result of vehicle defects, mal-maintenance, and tampering. For the purpose of this Project, default I&M program was used.
- Speed: Vehicular emissions are a function of the speed traveled, and generally follow a “U” shaped curve. Emissions per mile are highest at lower speeds and decrease with the increase in speed, reaching a minimum at speeds of 35-55 mph, depending on the vehicle type and pollutant. As the speed increases beyond the range above, the emissions per mile again increase with speed. Emission factors were calculated for vehicle speeds starting at idling (0 mph) and ranging up to maximum allowed design speed on the highway (70 mph) in the increments of 5 mph. However, only emissions factors for speeds estimated by the I-710 Traffic Model were used in the emission calculations.
- Operation information:
 - Geographic area: The Project is located in the South Coast Air Basin.

- Calendar year: The calendar year dictates the available vehicle model years on the road and their age distribution, current control technology, and permissible emission levels for different vehicles/engines. EMFAC2007 emission modeling was performed for the base year as well as the year of operation/completion.
- Season: Annual average season was used which represents an average of all the monthly inventories.
- Temperature (-20 °F to 120 °F): For the purpose of this Project, representative ambient temperature(s) of 60 °F was used for the EMFAC2007 modeling.
- Relative Humidity (0% to 100%): An ambient relative humidity of 40%, which is representative of the South Coast Air Basin, was used for EMFAC2007 modeling.
- Method: As the Project domain is limited to the South Coast Air Basin, “Simple-Average” option was used as the calculation method. “Simple-Average” method uses area averaging to calculate averaged parameters for temperature, speed, relative humidity, and I/M.
- Modes: The model was run in “Emfac” mode, which generates emission factors in grams of pollutant emitted per vehicle activity (in grams/mile and grams/hr). Emfac mode also calculates a matrix of emission factors at specific values of temperature, relative humidity, and vehicle speed for each vehicle class/technology combination. The “Detailed Impact Rates (RTL)” option was selected, which gives the most detailed output.
- Other inputs: Default values for all other inputs were used.

Adjustments to EMFAC2007 Emission Factors

Since the last release of EMFAC2007 the following new regulations/other programs have been adopted/approved that will impact future emissions of heavy-duty trucks that travel on the I-710.

1. The CARB “Regulation to Control Emissions from In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks”
(<http://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm>)²
 - Phase 1: by Dec 31, 2009, all pre-1994 engine model years (MYs) drayage trucks need to be retired or replaced with 1994 or newer engines AND all 1994 – 2003 engine MY will need to demonstrate an 85% reduction in PM emissions.
 - Phase 2: after Dec 31, 2013, all drayage trucks will be required to further reduce emission to meet 2007 engine emission standards.
2. The Clean Trucks Program that is part of the approved POLA/POLB Clean Air Action Plan (CAAP) (<http://www.cleanairactionplan.org/strategies/cleantrucks/default.asp>)
 - Oct. 1, 2008: All pre-model 1989 engine MY are banned from entering the Port.

² Adopted on October 12, 2008. <http://www.arb.ca.gov/regact/2007/drayage07/drayage07.htm>

- Jan 1, 2010: All 1989 – 2003 engine model years are banned from entering the Port.
 - Jan 1, 2012: Only trucks meeting the 2007 or better federal emissions standards will be permitted to operate at the Port.
3. The CARB “Truck and Bus Regulation”, adopted December 2008
(<http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>)
- Requirements
 - Owners must reduce emissions by upgrading vehicles one of three ways:
 - PM retrofits and replace vehicles (or engines) according to a prescribed schedule.
 - PM retrofits to a minimum number of engines each year and to replace a minimum number of older engines with newer engines meeting the 2010 engine standards.
 - Meet the fleet average based on the fleet owner’s prerogative using PM and NOX retrofits.
 - Compliance Dates
 - PM requirements begin Jan 1, 2011.
 - NOx reductions starting Jan 1, 2013.
 - For fleets smaller than 3 vehicles performance requirements are expected by Jan 1, 2014.
 - By Jan 1, 2023 all vehicles must have a 2010 model year engine or equivalent.

The present version of EMFAC2007 model does not account for emission reductions for medium heavy-duty and heavy heavy-duty trucks (including port trucks) for the above adopted regulations/ programs. Therefore, the emission factors for medium heavy-duty and heavy heavy-duty trucks from EMFAC2007 model were adjusted to reflect the reductions for the above regulations/programs as discussed below.

The CARB “Regulation to Control Emissions from In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks” (Drayage Truck rule) requires that all drayage trucks further reduce emission to meet 2007 engine emission standards after December 31, 2013. The Clean Truck Program of POLA/POLB (Clean Truck Program or CTP) requires that only trucks meeting the 2007 or better federal emissions standards will be permitted to operate at the Port starting January 1, 2012. Therefore, the Clean Truck Program has stricter requirements as compared to the ARB Drayage truck rule and any adjustment made to the EMFAC2007 emission factors to account for the Clean Truck Program essentially covers the emission reductions on account of the ARB Drayage Truck rule.

Adjustment to EMFAC2007 Emission Factor to Account for Truck and Bus Regulation

To adjust emission factors for the non-port medium- and heavy-duty truck emission factors in the calendar year 2035 the following approach was used. The Statewide truck and Bus rule requires public fleets to achieve reductions in fleet emissions for both PM₁₀ and NO_x beginning in December of 2009. The fleet emission target rates become progressively more stringent for every compliance year (2013 – 2023). It was assumed that the fleet target emission rates indicated for 2023 would be applicable in 2035 because a lack of any other guidance. The emission factors for medium- and heavy-duty fleets in the calendar year 2035 were adjusted using the following steps:

First, the medium- and heavy-duty fleet mass emissions were generated by running EMFAC2007 in the “burden” mode.

Mass emissions were then converted into an emission factor using the total vehicle miles travelled per day for both medium- and heavy-duty diesel fleets to obtain a default emission factor for the fleet.

As the next step, a “control factor” was developed which was the Statewide Truck and Bus 2023 target fleet emission factor divided by the EMFAC2007 default emission factor. This control factor was applied to EMFAC2007 speed dependent emission factors obtained for the calendar year 2035 to obtain the “adjusted emission factor”.

Adjustment to EMFAC2007 Emission Factor to Account for Clean Truck Program

The Clean Truck Programs administered by the Ports of Long Beach and Los Angeles are designed to accelerate the retrofit and/or replacement of older diesel trucks with cleaner trucks that meet current engine emission standards. One effect of the CTPs, which began its phased implementation in 2008, is to change the age distribution of trucks that serve the Ports, now and for future years. Emission factors from EMFAC2007 were adjusted for the Clean Truck Program by adjusting the population distribution of engine model years modeled in EMFAC2007. The fleet age distribution, developed by StarCrest, which accounted for the fleet turnover due to the CTP was used. This fleet age distribution has been used by the Ports for developing various emission inventories. The following steps were used to make this adjustment:

The default emission factors were obtained for each model year that exists within the 2035 fleet, omitting engine model years banned from entering the port due to the CTP.

The emission factor for a given model year was then weighted by the new fleet age distribution to get the weighted emission factor for that model year. For example if the fleet age distribution showed that 5% of the fleet in 2035 would be 2008 model year trucks, the emission factor for 2008 was multiplied by 5%.

Finally, the weighted emission factors were added to obtain an adjusted emission factor for 2035.

C.4. Entrained PM Emissions

This section presents the methodology used to estimate the entrained PM emissions for paved roadways in the SCAB, AOI, and the I-710 freeway for the 2008 baseline and 2035 alternatives. The primary source of entrained PM emissions during operation on the roadways is the re-suspension of loose particulate material from the surface of the road as a result of vehicle movement.

Emission inventories for traffic entrained PM emissions were generated using Equation C.4. The primary drivers for the total entrained PM emissions include vehicle miles travelled (see Equation C.4) and the fraction of heavy-duty vehicles on the roadway, which affects the average vehicle weight on the traffic link (see Equation C.5). As in the case of the other criteria pollutants, entrained PM emission inventories for SCAB, AOI, and the I-710 freeway were developed using the I-710 Traffic Model data. Entrained PM emissions for the I-710 freeway were also calculated using the post-processed traffic data, which were then used to estimate the ambient air quality impacts.

$$\text{Total Entrained PM} = \sum_i E_i \times \text{VMT}_i$$

.....Equation C.4

Where,

- i = A particular traffic link as defined in the I-710 Traffic Model
- E_i = Entrained Particulate Matter (PM) emission factor in lb/VMT for the ith traffic link calculated using Equation C.5
- VMT_i = Total vehicle miles travelled in the ith traffic link. This is calculated as a sum of the vehicle miles travelled by the individual vehicle classes in the ith traffic link. Vehicle miles travelled by an individual vehicle class in a particular traffic link can be estimated by multiplying the length of that traffic link with the traffic flow of the individual vehicle class through that traffic link.

The entrained PM emission factor required to develop the entrained PM emissions inventory was calculated using EPA's AP-42 equation³ as shown below (Equation C.5).

$$E_i = k \times sL^{0.91} \times W_i^{1.02} \times \left(1 - \frac{P}{4 \times N}\right)$$

.....Equation C.5

Where,

- E = Entrained Particulate Matter (PM) emission factor in lb/VMT (VMT refers to Vehicle Miles Travelled)
- k = Particle size multiplier. This is equal to 0.0054 lb/VMT for entrained PM₁₀ and 0.0022 lb/VMT for entrained PM_{2.5}

³ <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf> (dated January 2011)

- sL = Road surface silt loading factor
- W_i = Average weight in tons of the vehicles travelling on the i^{th} traffic link calculated using Equation C.6
- P = Number of wet days of precipitation with at least 0.1 inch of precipitation in the averaging period N.
- N = Number of days in the averaging period

Input parameters needed to calculate the entrained PM emission factor are discussed below.

Silt Loading: CARB⁴ and SCAQMD's 2007 AQMP provide average silt loading factors based on road type. Using this data, silt loading factors were assigned to each traffic link based on the road type specified in the I-710 Traffic Model as shown in Table 3.

Table 3: Silt Loading Values	
Road Types in the I-710 Traffic Model	Silt Loading sL (g/m ²)
Freeway, HOV, Expressway/Parkway, Ramps, Truck Lanes	0.022
Principal Arterial, Minor Arterial, Major Collector, Centroid Connector	0.035
Minor Collector	0.32

Average Vehicle Weight: The average vehicle weight on each link was calculated using a weighted average method (Equation C.4) following the procedure stated in EPA's AP-42 methodology for calculation of entrained PM emissions from paved roads.

$$W_i = \frac{\sum_j W_j \times VMT_{i,j}}{VMT_i}$$

.....Equation C.6

Where,

- i = A particular traffic link as defined in the I-710 Traffic Model
- W_i = Average Vehicle Weight on the i^{th} traffic link
- j = A particular vehicle class as defined in the I-710 Traffic Model
- W_j = Median Vehicle Weight for the j^{th} vehicle class (see Table 4)
- $VMT_{i,j}$ = Vehicle miles travelled by the j^{th} vehicle class in the i^{th} traffic link. This is calculated as a product of the length of j^{th} traffic link and traffic volume of the i^{th} vehicle class passing through the j^{th} traffic link

⁴ <http://www.arb.ca.gov/ei/areasrc/PMSJVPavedRoadMethod2003.pdf>

VMT_i = Total vehicle miles travelled in the i^{th} traffic link. This is calculated as a sum of the vehicle miles travelled by individual vehicle classes in the i^{th} traffic link.

The average weight for any I-710 Traffic Model vehicle class was determined from EMFAC2007. EMFAC2007 provides a weight range (see Table 2) for the various vehicle classes. The average weight for the range for a given vehicle class was used as the weight for that particular vehicle class as shown in Table 4 below.

Table 4: Median Vehicle Weight for I-710 Traffic Model Vehicle Classes	
Vehicle Class in the I-710 Traffic Model	Average Weight from the EMFAC2007 model (tons)
Automobiles	2.13
Light-Heavy Duty Trucks	5.63
Medium-Heavy Duty Trucks	11.75
Heavy-Heavy Duty Trucks	23.25
Port Trucks	23.25

Precipitation: Figure 13.2.1-2 in EPA's AP-42 methodology for calculation of entrained PM emissions from paved roads provides annual precipitation data for United States. Using this figure the number of wet days in a year with at least 0.01 inches of precipitation was found to be 40 for the South Coast Air Basin.

C.5. MSAT Emissions

This section describes the methodology used to develop the emission inventories of the six priority MSAT (diesel particulate matter [DPM], benzene, 1,3-butadiene, acetaldehyde, formaldehyde, and acrolein) analyzed for all traffic activities.

The EMFAC2007 provides DPM and TOG emissions factors for all vehicle types. Emission inventories for these two pollutants in SCAB, AOI, and the I-710 freeway were developed using the I-710 Traffic Model and the methodology described in Section C.1. Emission inventories of the five gaseous MSAT (benzene, 1,3 butadiene, acetaldehyde, formaldehyde, and acrolein) were calculated by applying speciation profiles from CARB's speciation database (<http://www.arb.ca.gov/ei/speciate/speciate.htm>) to the TOG emissions. Table C.6-1 provides a detailed listing of the speciation profiles that were used in this Project. The CARB speciation database provides separate profiles for non catalyst (NCAT) and catalyst (CAT) gasoline fueled automobiles. Therefore, the auto traffic flows were broken down into NCAT and CAT using the fleet mix data from EMFAC 2007 (for both 2008 and 2035) for the SCAB and the speciation profiles were applied accordingly.

It was assumed that all trucks are diesel fueled, and DPM was used as a surrogate for calculating the cancer risk and the chronic hazard index for diesel emissions, which is consistent with the guidance from OEHHA. The TOG emissions from the trucks were speciated only to calculate the acute hazard index. It should further be noted that CARB's speciation database does not provide a speciation profile for evaporative emissions from diesel fueled trucks and thus are not included in the acute hazard index calculations.

Emissions of the MSAT were also calculated using the post-processed traffic data following a similar methodology. These emissions were later used to estimate the health risk impacts from the traffic on the I-710 freeway as described in Appendix E.

C.6. Unique Nature of the 2035 DPM Emission Factor

A comparison of the 2035 DPM and NO_x emission factors as a function of speed for Heavy-Heavy Duty Trucks is presented in Figure C.1. As seen in the figure below, the DPM emission factor starts increasing with speed at ~28 mph; whereas the emission factor for NO_x increases at speeds greater than ~55 mph. Other criteria pollutants follow a trend similar to the NO_x curve. This unique nature of the 2035 DPM emission factor (for all vehicle classes) resulted in increases in DPM emissions on the I-710 freeway with small increases in mobility (i.e. speeds) when other pollutant emissions (including average vehicle exhaust PM_{2.5}) would be decreasing. We understand that this DPM “speed curve” is based on limited testing of pre-2007 MY diesel trucks. Additional testing would be necessary to confirm if DPM emissions do behave differently with changes in speed than other pollutants.

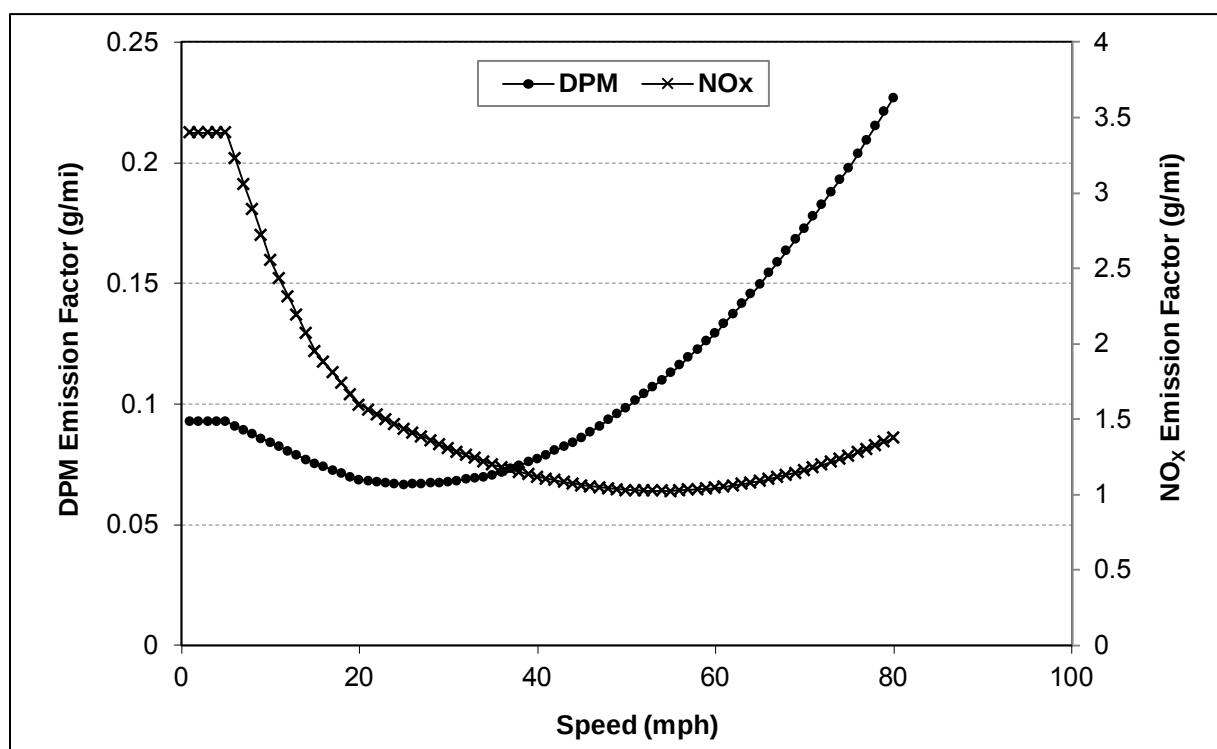


Figure C.1 2035 Heavy-Heavy Duty Truck Emission Factors as a Function of Speed

Table 5 below presents the details on the topics covered in the various tables in this Appendix.

Table 5: List of Tables Attached to Appendix C	
Table Numbers	Topics Covered
C.1-1A to C.1-1J	2008 EMFAC emission factors for pollutants
C.1-2A to C.1-2H	2035 EMFAC emission factors for pollutants
C.2-1A – C.2-1D	EMFAC emission factors adjustments due to the public fleet and bus regulation
C.2-2A – C.2-2C	EMFAC emission factors adjustments for clean port truck program
C.3-1A to C.3-1D	2008 post-processed traffic flows for AM, MD, PM and NT time periods
C.3-2A to C.3-2D	Alternative 1 post-processed traffic flows for AM, MD, PM and NT time periods
C.3-3A to C.3-3D	Alternative 5A post-processed traffic flows for AM, MD, PM and NT time periods
C.3-4A to C.3-4D	Alternative 6A post-processed traffic flows for AM, MD, PM and NT time periods
C.3-5A to C.3-5D	Alternative 6B post-processed traffic flows for AM, MD, PM and NT time periods
C.3-6A to C.3-6D	Alternative 6C post-processed traffic flows for AM, MD, PM and NT time periods
C.4-1	2008 mass emissions per link based on post-processed traffic flows
C.4-2	Alternative 1 mass emissions per link based on post-processed traffic flows
C.4-3	Alternative 5A mass emissions per link based on post-processed traffic flows
C.4-4	Alternative 6A mass emissions per link based on post-processed traffic flows
C.4-5	Alternative 6B mass emissions per link based on post-processed traffic flows
C.4-6	Alternative 6C mass emissions per link based on post-processed traffic flows
C.5-1	2008 MSAT mass emissions per link based on post-processed traffic
C.5-2	Alternative 1 MSAT mass emissions per link based on post-processed traffic
C.5-3	Alternative 5A MSAT mass emissions per link based on post-processed traffic
C.5-4	Alternative 6A MSAT mass emissions per link based on post-processed traffic
C.5-5	Alternative 6B MSAT mass emissions per link based on post-processed traffic
C.5-6	Alternative 6C MSAT mass emissions per link based on post-processed traffic
C.6-1	Total Organic Gas (TOG) Speciation Profiles Used to Calculate Mobile Source Air Toxic (MSAT) Emissions for the I-710 Corridor EIR/EIS
C.7-1A to C.7-1C	Incremental Criteria Pollutant Mass Emissions as compared to 2008 baseline within SCAB, AOI and for the I-710 freeway
C.7-2	Incremental Criteria Pollutant Mass Emissions for the I-710 Freeway as compared to 2008 baseline, using post-processed traffic data
C.7-3A to C.7-3C	Incremental Criteria Pollutant Mass Emissions as compared to 2035 Alternative 1 (no Build) within SCAB, AOI and for the I-710 freeway
C.7-4	Incremental Criteria Pollutant Mass Emissions for the I-710 Freeway as compared to 2035 Alternative 1 (No Build), using post-processed traffic data
C.8-1A to C.8-1C	Incremental MSAT Mass Emissions as compared to 2008 baseline within SCAB, AOI and for the I-710 freeway

Table 5: List of Tables Attached to Appendix C	
C.8-2	Incremental MSAT Mass Emissions for the I-710 Freeway as compared to 2008 baseline, using post-processed traffic data
C.8-3A to C.8-3C	Incremental MSAT Pollutant Mass Emissions as compared to 2035 Alternative 1 (No Build) within SCAB, AOI and for the I-710 freeway
C.8-4	Incremental MSAT Pollutant Mass Emissions for the I-710 Freeway as compared to 2035 Alternative 1 (No Build), using post-processed traffic data

Table C.1-1A. 2008 EMFAC Emission Factors for CO

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	0.00	0.00	0.00	0.00	121.55	92.01	114.74	45.36	47.59	0.00
1	5.72	10.26	6.79	8.76	18.89	11.88	17.27	14.45	31.67	6.93
2	5.72	10.26	6.79	8.76	18.89	11.88	17.27	14.45	31.67	6.93
3	5.61	10.01	6.67	8.57	18.89	11.88	17.27	14.45	31.67	6.80
4	5.41	9.52	6.45	8.22	18.89	11.88	17.27	14.45	31.67	6.55
5	5.21	9.08	6.24	7.89	18.89	11.88	17.27	14.45	31.67	6.32
6	5.05	8.73	6.07	7.62	17.63	11.10	16.12	13.51	29.91	6.12
7	4.89	8.37	5.89	7.36	16.37	10.31	14.97	12.57	28.15	5.92
8	4.73	8.02	5.72	7.09	15.11	9.52	13.82	11.64	26.39	5.72
9	4.57	7.66	5.54	6.82	13.84	8.73	12.66	10.70	24.63	5.52
10	4.42	7.31	5.37	6.56	12.58	7.94	11.51	9.76	22.87	5.32
11	4.30	7.07	5.23	6.37	11.84	7.48	10.83	9.20	21.64	5.18
12	4.18	6.83	5.10	6.18	11.09	7.01	10.15	8.64	20.41	5.03
13	4.07	6.59	4.97	5.99	10.34	6.54	9.47	8.07	19.18	4.89
14	3.95	6.35	4.84	5.80	9.60	6.07	8.78	7.51	17.94	4.74
15	3.83	6.11	4.70	5.62	8.85	5.60	8.10	6.94	16.71	4.60
16	3.75	5.94	4.60	5.48	8.40	5.32	7.69	6.59	15.91	4.49
17	3.66	5.77	4.50	5.34	7.94	5.03	7.27	6.24	15.10	4.39
18	3.57	5.60	4.39	5.20	7.49	4.74	6.85	5.90	14.29	4.28
19	3.48	5.43	4.29	5.06	7.03	4.46	6.44	5.55	13.49	4.17
20	3.39	5.26	4.19	4.92	6.58	4.17	6.02	5.20	12.68	4.06
21	3.33	5.14	4.11	4.82	6.29	3.99	5.76	4.98	12.24	3.98
22	3.26	5.02	4.02	4.72	6.01	3.81	5.50	4.75	11.80	3.90
23	3.19	4.90	3.94	4.61	5.73	3.64	5.25	4.53	11.35	3.82
24	3.12	4.78	3.86	4.51	5.45	3.46	4.99	4.31	10.91	3.74
25	3.05	4.66	3.78	4.41	5.16	3.28	4.73	4.09	10.46	3.66
26	3.00	4.57	3.71	4.33	4.99	3.16	4.57	3.95	10.12	3.60
27	2.95	4.49	3.65	4.25	4.81	3.05	4.40	3.81	9.78	3.54
28	2.89	4.40	3.58	4.17	4.63	2.94	4.24	3.67	9.44	3.48
29	2.84	4.32	3.52	4.10	4.46	2.83	4.08	3.53	9.10	3.42
30	2.79	4.23	3.45	4.02	4.28	2.72	3.92	3.39	8.77	3.36
31	2.75	4.17	3.40	3.96	4.17	2.65	3.82	3.30	8.51	3.31
32	2.71	4.11	3.35	3.90	4.07	2.58	3.72	3.21	8.25	3.26
33	2.67	4.05	3.29	3.84	3.96	2.51	3.63	3.13	7.99	3.22
34	2.62	3.99	3.24	3.78	3.85	2.44	3.53	3.04	7.74	3.17
35	2.58	3.93	3.19	3.73	3.75	2.38	3.43	2.95	7.48	3.13
36	2.55	3.90	3.15	3.68	3.69	2.34	3.38	2.90	7.30	3.10
37	2.52	3.86	3.11	3.64	3.63	2.30	3.33	2.85	7.11	3.07
38	2.49	3.82	3.06	3.60	3.58	2.26	3.27	2.80	6.92	3.03
39	2.46	3.79	3.02	3.56	3.52	2.23	3.22	2.76	6.74	3.00
40	2.43	3.75	2.98	3.52	3.47	2.19	3.17	2.71	6.55	2.97
41	2.41	3.73	2.95	3.49	3.45	2.18	3.16	2.69	6.43	2.95
42	2.38	3.72	2.92	3.47	3.43	2.17	3.14	2.67	6.31	2.94
43	2.36	3.70	2.89	3.44	3.42	2.16	3.13	2.65	6.19	2.92
44	2.34	3.69	2.86	3.42	3.40	2.15	3.11	2.63	6.07	2.90
45	2.32	3.67	2.83	3.39	3.39	2.13	3.10	2.61	5.96	2.88
46	2.31	3.68	2.80	3.38	3.41	2.15	3.12	2.62	5.90	2.88
47	2.30	3.69	2.78	3.38	3.43	2.16	3.13	2.63	5.84	2.88
48	2.28	3.69	2.76	3.37	3.45	2.17	3.15	2.63	5.79	2.88

Table C.1-1A. 2008 EMFAC Emission Factors for CO

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
49	2.27	3.70	2.74	3.36	3.47	2.18	3.17	2.64	5.73	2.88
50	2.26	3.71	2.72	3.35	3.49	2.19	3.19	2.65	5.68	2.87
51	2.26	3.74	2.71	3.36	3.56	2.23	3.25	2.69	5.69	2.89
52	2.26	3.78	2.70	3.37	3.62	2.27	3.31	2.72	5.70	2.91
53	2.25	3.81	2.68	3.38	3.68	2.30	3.36	2.76	5.71	2.92
54	2.25	3.85	2.67	3.39	3.74	2.34	3.42	2.79	5.72	2.94
55	2.25	3.89	2.66	3.40	3.81	2.38	3.48	2.83	5.73	2.96
56	2.26	3.96	2.66	3.44	3.92	2.45	3.58	2.90	5.81	3.00
57	2.28	4.03	2.67	3.48	4.04	2.52	3.69	2.97	5.90	3.05
58	2.29	4.10	2.67	3.51	4.15	2.59	3.79	3.04	5.98	3.09
59	2.30	4.18	2.67	3.55	4.27	2.65	3.90	3.12	6.06	3.13
60	2.32	4.25	2.67	3.59	4.38	2.72	4.00	3.19	6.15	3.18
61	2.35	4.38	2.69	3.66	4.57	2.84	4.17	3.30	6.32	3.26
62	2.38	4.51	2.71	3.73	4.76	2.95	4.34	3.42	6.48	3.35
63	2.41	4.64	2.73	3.81	4.95	3.06	4.52	3.54	6.65	3.43
64	2.44	4.77	2.74	3.88	5.14	3.18	4.69	3.66	6.82	3.51
65	2.48	4.90	2.76	3.95	5.33	3.29	4.86	3.78	6.99	3.60
66	2.48	4.90	2.76	3.95	5.63	3.47	5.14	3.97	7.27	3.67
67	2.48	4.90	2.76	3.95	5.94	3.66	5.41	4.16	7.55	3.74
68	2.48	4.90	2.76	3.95	6.24	3.84	5.69	4.34	7.83	3.82
69	2.48	4.90	2.76	3.95	6.55	4.02	5.96	4.53	8.11	3.89
70	2.48	4.90	2.76	3.95	6.85	4.20	6.24	4.72	8.39	3.96
71	2.48	4.90	2.76	3.95	7.34	4.50	6.68	5.02	8.82	4.09
72	2.48	4.90	2.76	3.95	7.83	4.79	7.13	5.32	9.25	4.22
73	2.48	4.90	2.76	3.95	8.32	5.08	7.57	5.62	9.68	4.35
74	2.48	4.90	2.76	3.95	8.81	5.37	8.02	5.92	10.11	4.47
75	2.48	4.91	2.76	3.95	9.30	5.67	8.46	6.22	10.54	4.60
76	2.48	4.91	2.76	3.95	10.10	6.15	9.19	6.71	11.20	4.84
77	2.48	4.91	2.76	3.95	10.91	6.63	9.92	7.19	11.87	5.07
78	2.48	4.91	2.76	3.95	11.72	7.11	10.65	7.68	12.53	5.31
79	2.48	4.91	2.76	3.95	12.53	7.59	11.39	8.17	13.19	5.54
80	2.48	4.91	2.76	3.95	13.33	8.07	12.12	8.65	13.85	5.78

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD emission factors are also applied to port trucks.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1-1B. 2008 EMFAC Emission Factors for NOx

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	0.00	0.00	0.00	0.00	15.59	33.67	19.76	63.04	101.32	0.00
1	0.48	0.69	0.94	1.16	2.07	4.26	2.58	12.32	45.57	0.69
2	0.48	0.69	0.94	1.16	2.07	4.26	2.58	12.32	45.57	0.69
3	0.47	0.68	0.92	1.14	2.07	4.26	2.58	12.32	45.57	0.68
4	0.46	0.67	0.89	1.11	2.07	4.26	2.58	12.32	45.57	0.66
5	0.45	0.65	0.86	1.07	2.07	4.26	2.58	12.32	45.57	0.64
6	0.43	0.63	0.84	1.04	2.03	4.13	2.52	11.92	42.72	0.63
7	0.42	0.62	0.81	1.01	2.00	4.00	2.46	11.52	39.88	0.61
8	0.41	0.60	0.79	0.98	1.96	3.88	2.40	11.12	37.03	0.59
9	0.40	0.58	0.76	0.95	1.92	3.75	2.34	10.71	34.18	0.57
10	0.39	0.57	0.74	0.92	1.88	3.63	2.28	10.31	31.33	0.56
11	0.38	0.56	0.72	0.90	1.86	3.54	2.25	10.03	29.61	0.55
12	0.37	0.55	0.70	0.88	1.83	3.46	2.21	9.76	27.88	0.53
13	0.36	0.53	0.69	0.86	1.81	3.38	2.17	9.49	26.15	0.52
14	0.36	0.52	0.67	0.84	1.78	3.29	2.13	9.21	24.43	0.51
15	0.35	0.51	0.65	0.82	1.76	3.21	2.09	8.94	22.70	0.50
16	0.34	0.50	0.64	0.80	1.75	3.15	2.07	8.75	22.08	0.49
17	0.34	0.50	0.62	0.78	1.73	3.10	2.05	8.57	21.47	0.48
18	0.33	0.49	0.61	0.77	1.72	3.04	2.02	8.39	20.85	0.47
19	0.32	0.48	0.60	0.75	1.71	2.99	2.00	8.21	20.23	0.46
20	0.32	0.47	0.58	0.74	1.69	2.93	1.98	8.03	19.61	0.45
21	0.31	0.47	0.57	0.73	1.69	2.90	1.97	7.91	19.48	0.44
22	0.31	0.46	0.56	0.72	1.68	2.87	1.95	7.80	19.34	0.44
23	0.30	0.46	0.55	0.70	1.67	2.83	1.94	7.69	19.20	0.43
24	0.30	0.45	0.54	0.69	1.67	2.80	1.93	7.57	19.06	0.42
25	0.30	0.45	0.53	0.68	1.66	2.77	1.92	7.46	18.92	0.42
26	0.29	0.44	0.53	0.67	1.66	2.75	1.91	7.40	18.81	0.41
27	0.29	0.44	0.52	0.67	1.66	2.74	1.91	7.34	18.70	0.41
28	0.29	0.44	0.51	0.66	1.66	2.72	1.91	7.29	18.60	0.40
29	0.28	0.43	0.51	0.65	1.67	2.71	1.91	7.23	18.49	0.40
30	0.28	0.43	0.50	0.64	1.67	2.69	1.90	7.17	18.38	0.40
31	0.28	0.43	0.50	0.64	1.67	2.69	1.91	7.16	18.31	0.39
32	0.28	0.43	0.49	0.63	1.68	2.69	1.91	7.16	18.23	0.39
33	0.27	0.42	0.49	0.63	1.68	2.69	1.92	7.15	18.16	0.39
34	0.27	0.42	0.48	0.62	1.69	2.69	1.92	7.14	18.08	0.38
35	0.27	0.42	0.48	0.62	1.70	2.69	1.93	7.13	18.01	0.38
36	0.27	0.42	0.48	0.62	1.71	2.71	1.94	7.17	17.96	0.38
37	0.27	0.42	0.47	0.61	1.72	2.73	1.95	7.21	17.92	0.38
38	0.27	0.42	0.47	0.61	1.73	2.74	1.96	7.25	17.88	0.38
39	0.27	0.42	0.47	0.61	1.74	2.76	1.98	7.29	17.83	0.38
40	0.26	0.42	0.47	0.61	1.75	2.77	1.99	7.33	17.79	0.37
41	0.26	0.42	0.47	0.61	1.77	2.81	2.01	7.42	17.78	0.37
42	0.26	0.42	0.47	0.61	1.79	2.84	2.03	7.51	17.77	0.37
43	0.26	0.42	0.46	0.61	1.80	2.87	2.05	7.60	17.75	0.37
44	0.26	0.42	0.46	0.61	1.82	2.90	2.07	7.69	17.74	0.37
45	0.26	0.43	0.46	0.61	1.84	2.93	2.09	7.78	17.73	0.37
46	0.26	0.43	0.47	0.61	1.86	2.99	2.12	7.93	17.75	0.38
47	0.26	0.43	0.47	0.61	1.89	3.04	2.15	8.08	17.77	0.38
48	0.27	0.43	0.47	0.61	1.91	3.09	2.18	8.23	17.79	0.38

Table C.1-1B. 2008 EMFAC Emission Factors for NOx

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
49	0.27	0.44	0.47	0.61	1.93	3.14	2.21	8.39	17.81	0.38
50	0.27	0.44	0.47	0.62	1.96	3.19	2.24	8.54	17.84	0.38
51	0.27	0.44	0.47	0.62	1.99	3.27	2.29	8.77	17.89	0.38
52	0.27	0.45	0.48	0.62	2.02	3.35	2.33	9.00	17.94	0.39
53	0.27	0.45	0.48	0.63	2.06	3.42	2.37	9.23	17.99	0.39
54	0.27	0.46	0.48	0.63	2.09	3.50	2.42	9.46	18.04	0.39
55	0.28	0.46	0.49	0.64	2.12	3.58	2.46	9.69	18.10	0.39
56	0.28	0.47	0.49	0.65	2.17	3.69	2.52	10.03	18.18	0.40
57	0.28	0.47	0.50	0.65	2.21	3.80	2.58	10.37	18.27	0.40
58	0.28	0.48	0.50	0.66	2.26	3.91	2.64	10.71	18.35	0.41
59	0.29	0.49	0.51	0.67	2.30	4.02	2.70	11.04	18.43	0.41
60	0.29	0.49	0.52	0.68	2.35	4.13	2.76	11.38	18.52	0.42
61	0.29	0.50	0.52	0.69	2.41	4.29	2.84	11.87	18.64	0.42
62	0.30	0.51	0.53	0.70	2.47	4.45	2.93	12.36	18.75	0.43
63	0.30	0.52	0.54	0.71	2.53	4.61	3.01	12.86	18.87	0.43
64	0.30	0.53	0.55	0.72	2.60	4.77	3.10	13.35	18.98	0.44
65	0.31	0.54	0.56	0.73	2.66	4.93	3.18	13.84	19.10	0.45
66	0.31	0.54	0.56	0.73	2.75	5.17	3.31	14.56	19.25	0.45
67	0.31	0.54	0.56	0.73	2.83	5.40	3.43	15.28	19.40	0.45
68	0.31	0.55	0.56	0.73	2.92	5.63	3.55	16.00	19.55	0.45
69	0.31	0.55	0.56	0.73	3.01	5.87	3.67	16.71	19.69	0.45
70	0.31	0.56	0.56	0.73	3.10	6.10	3.79	17.43	19.84	0.45
71	0.31	0.56	0.56	0.73	3.22	6.44	3.97	18.50	20.02	0.45
72	0.31	0.57	0.56	0.73	3.35	6.79	4.14	19.57	20.20	0.45
73	0.31	0.58	0.56	0.73	3.48	7.13	4.32	20.63	20.38	0.45
74	0.31	0.58	0.56	0.73	3.61	7.47	4.50	21.70	20.56	0.45
75	0.31	0.59	0.56	0.74	3.73	7.82	4.67	22.77	20.74	0.46
76	0.31	0.60	0.56	0.74	3.92	8.34	4.94	24.38	20.96	0.46
77	0.31	0.61	0.56	0.74	4.11	8.85	5.20	25.99	21.17	0.46
78	0.31	0.62	0.56	0.74	4.30	9.37	5.47	27.60	21.38	0.46
79	0.31	0.63	0.56	0.74	4.49	9.89	5.73	29.22	21.59	0.46
80	0.31	0.64	0.56	0.74	4.67	10.41	6.00	30.83	21.81	0.46

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD emission factors are also applied to port trucks.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1-1C. 2008 EMFAC Emission Factors for PM_{2.5}

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	0.00	0.00	0.00	0.00	0.14	0.40	0.20	0.76	1.89	0.00
1	0.06	0.07	0.13	0.13	0.06	0.09	0.07	0.60	2.93	0.09
2	0.06	0.07	0.13	0.13	0.06	0.09	0.07	0.60	2.93	0.09
3	0.06	0.07	0.12	0.12	0.06	0.09	0.07	0.60	2.93	0.08
4	0.06	0.07	0.11	0.11	0.06	0.09	0.07	0.60	2.93	0.08
5	0.05	0.06	0.11	0.10	0.06	0.09	0.07	0.60	2.93	0.07
6	0.05	0.06	0.10	0.09	0.06	0.09	0.07	0.57	2.74	0.07
7	0.05	0.05	0.09	0.09	0.06	0.09	0.06	0.55	2.55	0.06
8	0.04	0.05	0.08	0.08	0.05	0.08	0.06	0.52	2.37	0.06
9	0.04	0.05	0.08	0.08	0.05	0.08	0.06	0.50	2.18	0.05
10	0.04	0.04	0.07	0.07	0.05	0.07	0.05	0.47	1.99	0.05
11	0.03	0.04	0.07	0.07	0.04	0.07	0.05	0.45	1.86	0.05
12	0.03	0.04	0.06	0.06	0.04	0.07	0.05	0.43	1.72	0.04
13	0.03	0.04	0.06	0.06	0.04	0.06	0.05	0.41	1.58	0.04
14	0.03	0.03	0.06	0.05	0.04	0.06	0.04	0.40	1.45	0.04
15	0.03	0.03	0.05	0.05	0.04	0.06	0.04	0.38	1.31	0.04
16	0.03	0.03	0.05	0.05	0.03	0.06	0.04	0.36	1.23	0.03
17	0.03	0.03	0.05	0.05	0.03	0.05	0.04	0.35	1.15	0.03
18	0.02	0.03	0.04	0.04	0.03	0.05	0.04	0.34	1.08	0.03
19	0.02	0.03	0.04	0.04	0.03	0.05	0.03	0.32	1.00	0.03
20	0.02	0.03	0.04	0.04	0.03	0.05	0.03	0.31	0.92	0.03
21	0.02	0.02	0.04	0.04	0.03	0.05	0.03	0.30	0.89	0.03
22	0.02	0.02	0.04	0.04	0.03	0.04	0.03	0.29	0.86	0.03
23	0.02	0.02	0.03	0.03	0.03	0.04	0.03	0.28	0.83	0.03
24	0.02	0.02	0.03	0.03	0.03	0.04	0.03	0.27	0.80	0.02
25	0.02	0.02	0.03	0.03	0.03	0.04	0.03	0.26	0.77	0.02
26	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.25	0.75	0.02
27	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.25	0.73	0.02
28	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.24	0.71	0.02
29	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.23	0.69	0.02
30	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.23	0.66	0.02
31	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.22	0.65	0.02
32	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.22	0.63	0.02
33	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.21	0.62	0.02
34	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.20	0.60	0.02
35	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.20	0.59	0.02
36	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.20	0.58	0.02
37	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.19	0.57	0.02
38	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.19	0.56	0.02
39	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.18	0.56	0.02
40	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.18	0.55	0.02
41	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.18	0.55	0.02
42	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.17	0.55	0.02
43	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.17	0.55	0.02
44	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.17	0.54	0.02
45	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.16	0.54	0.02
46	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.16	0.55	0.02
47	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.16	0.56	0.02
48	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.16	0.56	0.02

Table C.1-1C. 2008 EMFAC Emission Factors for PM_{2.5}

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
49	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.16	0.57	0.02
50	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.58	0.02
51	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.59	0.02
52	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.60	0.02
53	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.62	0.02
54	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.63	0.02
55	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.64	0.02
56	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.66	0.02
57	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.68	0.02
58	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.70	0.02
59	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.72	0.02
60	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.74	0.02
61	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.77	0.02
62	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.80	0.02
63	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.83	0.02
64	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.85	0.02
65	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	0.88	0.02
66	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	0.92	0.02
67	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	0.95	0.02
68	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	0.99	0.02
69	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.02	0.02
70	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.05	0.02
71	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.10	0.02
72	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.14	0.02
73	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.18	0.02
74	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.22	0.02
75	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.26	0.02
76	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.16	1.31	0.02
77	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.16	1.36	0.02
78	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.16	1.41	0.02
79	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.16	1.46	0.02
80	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.16	1.51	0.02

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD emission factors are also applied to port trucks.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1-1D. 2008 EMFAC Emission Factors for PM₁₀

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	0.00	0.00	0.00	0.00	0.15	0.44	0.22	0.83	2.06	0.00
1	0.08	0.09	0.15	0.15	0.08	0.12	0.09	0.67	3.22	0.11
2	0.08	0.09	0.15	0.15	0.08	0.12	0.09	0.67	3.22	0.11
3	0.08	0.09	0.15	0.14	0.08	0.12	0.09	0.67	3.22	0.10
4	0.07	0.08	0.14	0.13	0.08	0.12	0.09	0.67	3.22	0.10
5	0.07	0.08	0.13	0.12	0.08	0.12	0.09	0.67	3.22	0.09
6	0.07	0.08	0.12	0.12	0.08	0.11	0.09	0.64	3.02	0.09
7	0.06	0.07	0.11	0.11	0.08	0.11	0.08	0.61	2.82	0.08
8	0.06	0.07	0.10	0.10	0.07	0.10	0.08	0.58	2.61	0.08
9	0.06	0.06	0.10	0.10	0.07	0.10	0.08	0.55	2.41	0.07
10	0.05	0.06	0.09	0.09	0.07	0.10	0.07	0.53	2.21	0.07
11	0.05	0.06	0.09	0.08	0.06	0.09	0.07	0.51	2.06	0.06
12	0.05	0.05	0.08	0.08	0.06	0.09	0.07	0.49	1.91	0.06
13	0.05	0.05	0.08	0.08	0.06	0.09	0.07	0.47	1.76	0.06
14	0.05	0.05	0.07	0.07	0.06	0.08	0.06	0.45	1.61	0.06
15	0.04	0.05	0.07	0.07	0.06	0.08	0.06	0.43	1.46	0.05
16	0.04	0.05	0.07	0.06	0.05	0.08	0.06	0.41	1.38	0.05
17	0.04	0.05	0.06	0.06	0.05	0.07	0.06	0.40	1.29	0.05
18	0.04	0.04	0.06	0.06	0.05	0.07	0.06	0.38	1.21	0.05
19	0.04	0.04	0.06	0.06	0.05	0.07	0.05	0.37	1.12	0.05
20	0.04	0.04	0.06	0.06	0.05	0.07	0.05	0.35	1.04	0.04
21	0.04	0.04	0.05	0.05	0.05	0.07	0.05	0.34	1.01	0.04
22	0.04	0.04	0.05	0.05	0.05	0.06	0.05	0.33	0.98	0.04
23	0.03	0.04	0.05	0.05	0.05	0.06	0.05	0.32	0.94	0.04
24	0.03	0.04	0.05	0.05	0.04	0.06	0.05	0.31	0.91	0.04
25	0.03	0.04	0.05	0.05	0.04	0.06	0.05	0.30	0.88	0.04
26	0.03	0.04	0.05	0.05	0.04	0.06	0.05	0.29	0.86	0.04
27	0.03	0.04	0.05	0.05	0.04	0.06	0.05	0.29	0.83	0.04
28	0.03	0.04	0.05	0.04	0.04	0.06	0.04	0.28	0.81	0.04
29	0.03	0.03	0.04	0.04	0.04	0.06	0.04	0.27	0.78	0.04
30	0.03	0.03	0.04	0.04	0.04	0.06	0.04	0.26	0.76	0.04
31	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.26	0.74	0.04
32	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.25	0.73	0.03
33	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.24	0.71	0.03
34	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.24	0.70	0.03
35	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.23	0.68	0.03
36	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.23	0.67	0.03
37	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.22	0.66	0.03
38	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.22	0.65	0.03
39	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.21	0.64	0.03
40	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.21	0.64	0.03
41	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.21	0.64	0.03
42	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.20	0.63	0.03
43	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.20	0.63	0.03
44	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.20	0.63	0.03
45	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.20	0.63	0.03
46	0.03	0.03	0.04	0.04	0.03	0.05	0.04	0.19	0.64	0.03
47	0.03	0.03	0.04	0.04	0.03	0.05	0.04	0.19	0.65	0.03
48	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.19	0.65	0.03

Table C.1-1D. 2008 EMFAC Emission Factors for PM₁₀

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
49	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.19	0.66	0.03
50	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.67	0.03
51	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.68	0.03
52	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.69	0.03
53	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.71	0.03
54	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.72	0.03
55	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.74	0.03
56	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.76	0.03
57	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.78	0.03
58	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.80	0.03
59	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.83	0.03
60	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.85	0.03
61	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.88	0.03
62	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.91	0.03
63	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.94	0.03
64	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.97	0.03
65	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	1.00	0.03
66	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	1.04	0.03
67	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.07	0.03
68	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.11	0.03
69	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.15	0.03
70	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.19	0.03
71	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.23	0.03
72	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.28	0.03
73	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.32	0.03
74	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.37	0.03
75	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.18	1.41	0.03
76	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.19	1.47	0.03
77	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.19	1.52	0.03
78	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.19	1.57	0.04
79	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.19	1.62	0.04
80	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.20	1.68	0.04

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD emission factors are also applied to port trucks.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1-1E. 2008 EMFAC Emission Factors for Diesel Particulate Matter

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	0.00	0.00	0.00	0.00	0.78	1.01	0.24	0.85	2.06	0.00
1	0.40	0.14	0.25	0.13	0.11	0.15	0.04	0.65	3.16	0.00
2	0.40	0.14	0.25	0.13	0.11	0.15	0.04	0.65	3.16	0.00
3	0.40	0.14	0.25	0.13	0.11	0.15	0.04	0.65	3.16	0.00
4	0.40	0.14	0.25	0.13	0.11	0.15	0.04	0.65	3.16	0.00
5	0.40	0.14	0.25	0.13	0.11	0.15	0.04	0.65	3.16	0.00
6	0.38	0.14	0.24	0.13	0.11	0.15	0.03	0.62	2.96	0.00
7	0.37	0.13	0.23	0.12	0.10	0.14	0.03	0.59	2.75	0.00
8	0.35	0.12	0.22	0.12	0.10	0.13	0.03	0.56	2.55	0.00
9	0.33	0.12	0.21	0.11	0.09	0.13	0.03	0.54	2.35	0.00
10	0.31	0.11	0.20	0.11	0.09	0.12	0.03	0.51	2.14	0.00
11	0.30	0.11	0.19	0.10	0.08	0.12	0.03	0.49	2.00	0.00
12	0.29	0.10	0.18	0.10	0.08	0.11	0.03	0.47	1.85	0.00
13	0.28	0.10	0.18	0.09	0.08	0.11	0.02	0.45	1.70	0.00
14	0.26	0.09	0.17	0.09	0.07	0.10	0.02	0.43	1.55	0.00
15	0.25	0.09	0.16	0.08	0.07	0.10	0.02	0.41	1.40	0.00
16	0.24	0.09	0.15	0.08	0.07	0.09	0.02	0.39	1.32	0.00
17	0.23	0.08	0.15	0.08	0.07	0.09	0.02	0.38	1.23	0.00
18	0.23	0.08	0.14	0.08	0.06	0.09	0.02	0.36	1.15	0.00
19	0.22	0.08	0.14	0.07	0.06	0.08	0.02	0.35	1.06	0.00
20	0.21	0.07	0.13	0.07	0.06	0.08	0.02	0.33	0.98	0.00
21	0.20	0.07	0.13	0.07	0.06	0.08	0.02	0.32	0.94	0.00
22	0.19	0.07	0.12	0.06	0.05	0.07	0.02	0.31	0.91	0.00
23	0.19	0.07	0.12	0.06	0.05	0.07	0.02	0.30	0.88	0.00
24	0.18	0.06	0.11	0.06	0.05	0.07	0.02	0.29	0.85	0.00
25	0.17	0.06	0.11	0.06	0.05	0.07	0.02	0.28	0.82	0.00
26	0.17	0.06	0.11	0.06	0.05	0.07	0.01	0.27	0.79	0.00
27	0.16	0.06	0.10	0.05	0.05	0.06	0.01	0.26	0.77	0.00
28	0.16	0.06	0.10	0.05	0.04	0.06	0.01	0.26	0.75	0.00
29	0.15	0.05	0.10	0.05	0.04	0.06	0.01	0.25	0.72	0.00
30	0.15	0.05	0.09	0.05	0.04	0.06	0.01	0.24	0.70	0.00
31	0.15	0.05	0.09	0.05	0.04	0.06	0.01	0.23	0.68	0.00
32	0.14	0.05	0.09	0.05	0.04	0.05	0.01	0.23	0.67	0.00
33	0.14	0.05	0.09	0.05	0.04	0.05	0.01	0.22	0.65	0.00
34	0.13	0.05	0.08	0.05	0.04	0.05	0.01	0.22	0.63	0.00
35	0.13	0.05	0.08	0.04	0.04	0.05	0.01	0.21	0.62	0.00
36	0.13	0.05	0.08	0.04	0.04	0.05	0.01	0.21	0.61	0.00
37	0.12	0.04	0.08	0.04	0.03	0.05	0.01	0.20	0.60	0.00
38	0.12	0.04	0.08	0.04	0.03	0.05	0.01	0.20	0.59	0.00
39	0.12	0.04	0.08	0.04	0.03	0.05	0.01	0.19	0.58	0.00
40	0.12	0.04	0.07	0.04	0.03	0.05	0.01	0.19	0.57	0.00
41	0.12	0.04	0.07	0.04	0.03	0.04	0.01	0.19	0.57	0.00
42	0.11	0.04	0.07	0.04	0.03	0.04	0.01	0.18	0.57	0.00
43	0.11	0.04	0.07	0.04	0.03	0.04	0.01	0.18	0.57	0.00
44	0.11	0.04	0.07	0.04	0.03	0.04	0.01	0.18	0.57	0.00
45	0.11	0.04	0.07	0.04	0.03	0.04	0.01	0.17	0.57	0.00
46	0.11	0.04	0.07	0.04	0.03	0.04	0.01	0.17	0.58	0.00
47	0.10	0.04	0.07	0.03	0.03	0.04	0.01	0.17	0.58	0.00
48	0.10	0.04	0.07	0.03	0.03	0.04	0.01	0.17	0.59	0.00

Table C.1-1E. 2008 EMFAC Emission Factors for Diesel Particulate Matter

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
49	0.10	0.04	0.06	0.03	0.03	0.04	0.01	0.16	0.60	0.00
50	0.10	0.04	0.06	0.03	0.03	0.04	0.01	0.16	0.60	0.00
51	0.10	0.04	0.06	0.03	0.03	0.04	0.01	0.16	0.62	0.00
52	0.10	0.04	0.06	0.03	0.03	0.04	0.01	0.16	0.63	0.00
53	0.10	0.03	0.06	0.03	0.03	0.04	0.01	0.16	0.65	0.00
54	0.10	0.03	0.06	0.03	0.03	0.04	0.01	0.16	0.66	0.00
55	0.10	0.03	0.06	0.03	0.03	0.04	0.01	0.16	0.68	0.00
56	0.10	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.70	0.00
57	0.10	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.72	0.00
58	0.09	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.74	0.00
59	0.09	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.76	0.00
60	0.09	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.79	0.00
61	0.09	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.82	0.00
62	0.09	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.85	0.00
63	0.09	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.88	0.00
64	0.09	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.91	0.00
65	0.09	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.94	0.00
66	0.09	0.03	0.06	0.03	0.03	0.04	0.01	0.15	0.97	0.00
67	0.09	0.03	0.06	0.03	0.03	0.04	0.01	0.15	1.01	0.00
68	0.10	0.03	0.06	0.03	0.03	0.04	0.01	0.15	1.05	0.00
69	0.10	0.03	0.06	0.03	0.03	0.04	0.01	0.15	1.09	0.00
70	0.10	0.03	0.06	0.03	0.03	0.04	0.01	0.16	1.12	0.00
71	0.10	0.03	0.06	0.03	0.03	0.04	0.01	0.16	1.17	0.00
72	0.10	0.03	0.06	0.03	0.03	0.04	0.01	0.16	1.22	0.00
73	0.10	0.04	0.06	0.03	0.03	0.04	0.01	0.16	1.26	0.00
74	0.10	0.04	0.06	0.03	0.03	0.04	0.01	0.16	1.31	0.00
75	0.10	0.04	0.06	0.03	0.03	0.04	0.01	0.16	1.35	0.00
76	0.10	0.04	0.06	0.03	0.03	0.04	0.01	0.16	1.40	0.00
77	0.10	0.04	0.07	0.03	0.03	0.04	0.01	0.17	1.46	0.00
78	0.10	0.04	0.07	0.03	0.03	0.04	0.01	0.17	1.51	0.00
79	0.11	0.04	0.07	0.04	0.03	0.04	0.01	0.17	1.56	0.00
80	0.11	0.04	0.07	0.04	0.03	0.04	0.01	0.17	1.62	0.00

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD emission factors are also applied to port trucks.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1-1F. 2008 EMFAC Emission Factors for Exhaust Total Organic Gases: Vehicle Technology Non-Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	0.00	0.00	0.00	0.00	24.07	23.88	0.00	0.00	0.00	0.00
1	25.21	26.54	25.42	31.75	22.01	21.86	0.00	0.00	0.00	0.23
2	25.21	26.54	25.42	31.75	22.01	21.86	0.00	0.00	0.00	0.23
3	24.27	25.54	24.46	30.56	22.01	21.86	0.00	0.00	0.00	0.22
4	22.51	23.69	22.69	28.35	22.01	21.86	0.00	0.00	0.00	0.20
5	20.92	22.02	21.09	26.34	22.01	21.86	0.00	0.00	0.00	0.19
6	19.71	20.75	19.87	24.83	20.49	20.35	0.00	0.00	0.00	0.18
7	18.51	19.48	18.66	23.31	18.98	18.84	0.00	0.00	0.00	0.17
8	17.31	18.22	17.45	21.79	17.46	17.34	0.00	0.00	0.00	0.16
9	16.10	16.95	16.23	20.28	15.94	15.83	0.00	0.00	0.00	0.15
10	14.90	15.68	15.02	18.76	14.43	14.33	0.00	0.00	0.00	0.13
11	14.14	14.88	14.26	17.81	13.51	13.42	0.00	0.00	0.00	0.13
12	13.38	14.08	13.49	16.85	12.60	12.51	0.00	0.00	0.00	0.12
13	12.62	13.29	12.73	15.89	11.68	11.60	0.00	0.00	0.00	0.11
14	11.86	12.49	11.96	14.94	10.77	10.70	0.00	0.00	0.00	0.11
15	11.11	11.69	11.20	13.98	9.86	9.79	0.00	0.00	0.00	0.10
16	10.62	11.17	10.70	13.37	9.29	9.22	0.00	0.00	0.00	0.10
17	10.13	10.66	10.21	12.75	8.72	8.66	0.00	0.00	0.00	0.09
18	9.64	10.15	9.72	12.14	8.16	8.10	0.00	0.00	0.00	0.09
19	9.15	9.63	9.23	11.52	7.59	7.54	0.00	0.00	0.00	0.08
20	8.66	9.12	8.73	10.91	7.02	6.97	0.00	0.00	0.00	0.08
21	8.34	8.78	8.41	10.51	6.66	6.61	0.00	0.00	0.00	0.08
22	8.03	8.45	8.09	10.11	6.30	6.25	0.00	0.00	0.00	0.07
23	7.71	8.11	7.77	9.70	5.94	5.90	0.00	0.00	0.00	0.07
24	7.39	7.78	7.45	9.30	5.57	5.54	0.00	0.00	0.00	0.07
25	7.07	7.44	7.13	8.90	5.21	5.18	0.00	0.00	0.00	0.06
26	6.86	7.23	6.92	8.64	4.98	4.94	0.00	0.00	0.00	0.06
27	6.66	7.01	6.71	8.38	4.74	4.71	0.00	0.00	0.00	0.06
28	6.45	6.79	6.50	8.12	4.51	4.48	0.00	0.00	0.00	0.06
29	6.25	6.57	6.30	7.86	4.27	4.24	0.00	0.00	0.00	0.06
30	6.04	6.36	6.09	7.60	4.04	4.01	0.00	0.00	0.00	0.05
31	5.91	6.22	5.96	7.44	3.88	3.85	0.00	0.00	0.00	0.05
32	5.78	6.09	5.83	7.28	3.72	3.70	0.00	0.00	0.00	0.05
33	5.66	5.95	5.70	7.12	3.57	3.54	0.00	0.00	0.00	0.05
34	5.53	5.82	5.57	6.96	3.41	3.39	0.00	0.00	0.00	0.05
35	5.40	5.68	5.44	6.80	3.26	3.23	0.00	0.00	0.00	0.05
36	5.33	5.61	5.37	6.71	3.15	3.13	0.00	0.00	0.00	0.05
37	5.26	5.53	5.30	6.62	3.05	3.03	0.00	0.00	0.00	0.05
38	5.19	5.46	5.23	6.53	2.95	2.92	0.00	0.00	0.00	0.05
39	5.12	5.39	5.16	6.44	2.84	2.82	0.00	0.00	0.00	0.05
40	5.05	5.31	5.09	6.36	2.74	2.72	0.00	0.00	0.00	0.05
41	5.03	5.29	5.07	6.33	2.67	2.65	0.00	0.00	0.00	0.05
42	5.01	5.27	5.05	6.30	2.60	2.59	0.00	0.00	0.00	0.05
43	4.98	5.25	5.02	6.27	2.54	2.52	0.00	0.00	0.00	0.04
44	4.96	5.22	5.00	6.25	2.47	2.45	0.00	0.00	0.00	0.04
45	4.94	5.20	4.98	6.22	2.40	2.38	0.00	0.00	0.00	0.04
46	4.96	5.22	5.00	6.25	2.36	2.34	0.00	0.00	0.00	0.04
47	4.99	5.25	5.03	6.28	2.32	2.30	0.00	0.00	0.00	0.04

Table C.1-1F. 2008 EMFAC Emission Factors for Exhaust Total Organic Gases: Vehicle Technology Non-Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
48	5.01	5.27	5.05	6.31	2.28	2.26	0.00	0.00	0.00	0.05
49	5.04	5.30	5.08	6.34	2.23	2.22	0.00	0.00	0.00	0.05
50	5.06	5.32	5.10	6.37	2.19	2.18	0.00	0.00	0.00	0.05
51	5.13	5.40	5.17	6.46	2.17	2.16	0.00	0.00	0.00	0.05
52	5.20	5.48	5.25	6.55	2.15	2.14	0.00	0.00	0.00	0.05
53	5.28	5.55	5.32	6.64	2.13	2.12	0.00	0.00	0.00	0.05
54	5.35	5.63	5.39	6.73	2.11	2.09	0.00	0.00	0.00	0.05
55	5.42	5.70	5.46	6.82	2.09	2.07	0.00	0.00	0.00	0.05
56	5.55	5.84	5.60	6.99	2.08	2.07	0.00	0.00	0.00	0.05
57	5.68	5.98	5.73	7.15	2.08	2.07	0.00	0.00	0.00	0.05
58	5.81	6.12	5.86	7.32	2.08	2.06	0.00	0.00	0.00	0.05
59	5.94	6.26	5.99	7.48	2.08	2.06	0.00	0.00	0.00	0.05
60	6.08	6.40	6.13	7.65	2.07	2.06	0.00	0.00	0.00	0.05
61	6.29	6.62	6.34	7.91	2.09	2.07	0.00	0.00	0.00	0.06
62	6.50	6.84	6.55	8.18	2.10	2.09	0.00	0.00	0.00	0.06
63	6.71	7.06	6.76	8.44	2.11	2.10	0.00	0.00	0.00	0.06
64	6.92	7.28	6.97	8.71	2.13	2.11	0.00	0.00	0.00	0.06
65	7.13	7.50	7.19	8.97	2.14	2.13	0.00	0.00	0.00	0.06
66	7.13	7.50	7.19	8.97	2.18	2.16	0.00	0.00	0.00	0.06
67	7.13	7.50	7.19	8.97	2.21	2.19	0.00	0.00	0.00	0.06
68	7.13	7.50	7.19	8.97	2.24	2.23	0.00	0.00	0.00	0.06
69	7.13	7.50	7.19	8.97	2.28	2.26	0.00	0.00	0.00	0.06
70	7.13	7.50	7.19	8.97	2.31	2.29	0.00	0.00	0.00	0.06
71	7.13	7.50	7.19	8.97	2.37	2.35	0.00	0.00	0.00	0.06
72	7.13	7.50	7.19	8.97	2.42	2.41	0.00	0.00	0.00	0.06
73	7.13	7.50	7.19	8.97	2.48	2.46	0.00	0.00	0.00	0.06
74	7.13	7.50	7.19	8.97	2.54	2.52	0.00	0.00	0.00	0.06
75	7.13	7.50	7.19	8.97	2.59	2.58	0.00	0.00	0.00	0.06
76	7.13	7.50	7.19	8.97	2.68	2.66	0.00	0.00	0.00	0.06
77	7.13	7.50	7.19	8.97	2.77	2.75	0.00	0.00	0.00	0.06
78	7.13	7.50	7.19	8.97	2.86	2.84	0.00	0.00	0.00	0.06
79	7.13	7.50	7.19	8.97	2.95	2.93	0.00	0.00	0.00	0.06
80	7.13	7.50	7.19	8.97	3.04	3.02	0.00	0.00	0.00	0.06

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD emission factors are also applied to port trucks.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1-1G. 2008 EMFAC Emission Factors for Exhaust Total Organic Gases: Vehicle Technology Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	0.00	0.00	0.00	0.00	25.24	24.94	18.41	3.56	0.00	0.00
1	0.47	0.50	0.60	0.78	2.27	1.59	1.58	0.47	18.20	0.53
2	0.47	0.50	0.60	0.78	2.27	1.59	1.58	0.47	18.20	0.53
3	0.45	0.48	0.57	0.75	2.27	1.59	1.58	0.47	18.20	0.51
4	0.41	0.44	0.53	0.68	2.27	1.59	1.58	0.47	18.20	0.47
5	0.38	0.41	0.48	0.63	2.27	1.59	1.58	0.47	18.20	0.43
6	0.35	0.38	0.45	0.59	2.11	1.48	1.47	0.43	16.95	0.40
7	0.33	0.35	0.42	0.54	1.96	1.37	1.36	0.40	15.69	0.37
8	0.30	0.33	0.39	0.50	1.80	1.26	1.25	0.37	14.44	0.34
9	0.28	0.30	0.36	0.46	1.65	1.15	1.15	0.34	13.19	0.32
10	0.25	0.27	0.33	0.42	1.49	1.04	1.04	0.31	11.93	0.29
11	0.24	0.26	0.31	0.40	1.39	0.98	0.97	0.29	11.18	0.27
12	0.22	0.24	0.29	0.37	1.30	0.91	0.91	0.27	10.42	0.25
13	0.21	0.23	0.27	0.35	1.21	0.84	0.84	0.25	9.66	0.24
14	0.19	0.21	0.25	0.32	1.11	0.78	0.77	0.23	8.91	0.22
15	0.18	0.20	0.23	0.30	1.02	0.71	0.71	0.21	8.15	0.20
16	0.17	0.19	0.22	0.28	0.96	0.67	0.67	0.20	7.68	0.19
17	0.16	0.18	0.21	0.27	0.90	0.63	0.63	0.19	7.21	0.18
18	0.15	0.17	0.20	0.25	0.84	0.59	0.59	0.17	6.75	0.17
19	0.14	0.16	0.18	0.24	0.78	0.55	0.55	0.16	6.28	0.16
20	0.13	0.15	0.17	0.22	0.73	0.51	0.50	0.15	5.81	0.15
21	0.13	0.14	0.16	0.21	0.69	0.48	0.48	0.14	5.51	0.14
22	0.12	0.13	0.16	0.20	0.65	0.46	0.45	0.13	5.21	0.14
23	0.11	0.13	0.15	0.19	0.61	0.43	0.43	0.13	4.91	0.13
24	0.11	0.12	0.14	0.18	0.58	0.40	0.40	0.12	4.61	0.12
25	0.10	0.11	0.13	0.17	0.54	0.38	0.38	0.11	4.31	0.12
26	0.10	0.11	0.13	0.17	0.51	0.36	0.36	0.11	4.12	0.11
27	0.09	0.11	0.12	0.16	0.49	0.34	0.34	0.10	3.92	0.11
28	0.09	0.10	0.12	0.15	0.47	0.33	0.32	0.10	3.73	0.10
29	0.09	0.10	0.11	0.15	0.44	0.31	0.31	0.09	3.53	0.10
30	0.08	0.09	0.11	0.14	0.42	0.29	0.29	0.09	3.34	0.10
31	0.08	0.09	0.11	0.14	0.40	0.28	0.28	0.08	3.21	0.09
32	0.08	0.09	0.10	0.13	0.39	0.27	0.27	0.08	3.08	0.09
33	0.08	0.09	0.10	0.13	0.37	0.26	0.26	0.08	2.95	0.09
34	0.07	0.08	0.10	0.12	0.35	0.25	0.25	0.07	2.82	0.08
35	0.07	0.08	0.09	0.12	0.34	0.24	0.23	0.07	2.69	0.08
36	0.07	0.08	0.09	0.12	0.33	0.23	0.23	0.07	2.61	0.08
37	0.07	0.08	0.09	0.12	0.32	0.22	0.22	0.07	2.52	0.08
38	0.07	0.07	0.09	0.11	0.30	0.21	0.21	0.06	2.44	0.08
39	0.06	0.07	0.09	0.11	0.29	0.21	0.20	0.06	2.35	0.07
40	0.06	0.07	0.08	0.11	0.28	0.20	0.20	0.06	2.27	0.07
41	0.06	0.07	0.08	0.11	0.28	0.19	0.19	0.06	2.21	0.07
42	0.06	0.07	0.08	0.11	0.27	0.19	0.19	0.06	2.15	0.07
43	0.06	0.07	0.08	0.10	0.26	0.18	0.18	0.05	2.10	0.07
44	0.06	0.07	0.08	0.10	0.26	0.18	0.18	0.05	2.04	0.07
45	0.06	0.07	0.08	0.10	0.25	0.17	0.17	0.05	1.99	0.07
46	0.06	0.07	0.08	0.10	0.24	0.17	0.17	0.05	1.95	0.07
47	0.06	0.07	0.08	0.10	0.24	0.17	0.17	0.05	1.92	0.07

Table C.1-1G. 2008 EMFAC Emission Factors for Exhaust Total Organic Gases: Vehicle Technology Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
48	0.06	0.07	0.08	0.10	0.24	0.17	0.16	0.05	1.88	0.07
49	0.06	0.07	0.08	0.10	0.23	0.16	0.16	0.05	1.85	0.07
50	0.06	0.07	0.08	0.10	0.23	0.16	0.16	0.05	1.81	0.07
51	0.06	0.07	0.08	0.10	0.22	0.16	0.16	0.05	1.80	0.07
52	0.06	0.07	0.08	0.10	0.22	0.16	0.15	0.05	1.78	0.07
53	0.06	0.07	0.08	0.10	0.22	0.15	0.15	0.05	1.76	0.07
54	0.06	0.07	0.08	0.10	0.22	0.15	0.15	0.05	1.74	0.07
55	0.06	0.07	0.08	0.10	0.22	0.15	0.15	0.04	1.73	0.07
56	0.06	0.07	0.08	0.10	0.22	0.15	0.15	0.04	1.72	0.07
57	0.06	0.07	0.08	0.11	0.22	0.15	0.15	0.04	1.72	0.07
58	0.06	0.07	0.08	0.11	0.22	0.15	0.15	0.04	1.72	0.07
59	0.06	0.07	0.08	0.11	0.22	0.15	0.15	0.04	1.72	0.07
60	0.07	0.07	0.08	0.11	0.22	0.15	0.15	0.04	1.71	0.07
61	0.07	0.08	0.09	0.12	0.22	0.15	0.15	0.04	1.73	0.08
62	0.07	0.08	0.09	0.12	0.22	0.15	0.15	0.04	1.74	0.08
63	0.07	0.08	0.09	0.12	0.22	0.15	0.15	0.05	1.75	0.08
64	0.07	0.08	0.09	0.12	0.22	0.15	0.15	0.05	1.76	0.08
65	0.07	0.08	0.10	0.13	0.22	0.16	0.15	0.05	1.77	0.09
66	0.07	0.08	0.10	0.13	0.23	0.16	0.16	0.05	1.80	0.09
67	0.07	0.08	0.10	0.13	0.23	0.16	0.16	0.05	1.83	0.09
68	0.07	0.08	0.10	0.13	0.23	0.16	0.16	0.05	1.86	0.09
69	0.07	0.08	0.10	0.13	0.24	0.16	0.16	0.05	1.88	0.09
70	0.07	0.08	0.10	0.13	0.24	0.17	0.17	0.05	1.91	0.09
71	0.07	0.08	0.10	0.13	0.25	0.17	0.17	0.05	1.96	0.09
72	0.07	0.08	0.10	0.13	0.25	0.18	0.17	0.05	2.01	0.09
73	0.07	0.08	0.10	0.13	0.26	0.18	0.18	0.05	2.05	0.09
74	0.07	0.08	0.10	0.13	0.26	0.18	0.18	0.05	2.10	0.09
75	0.07	0.08	0.10	0.13	0.27	0.19	0.19	0.06	2.15	0.09
76	0.07	0.08	0.10	0.13	0.28	0.19	0.19	0.06	2.22	0.09
77	0.07	0.08	0.10	0.13	0.29	0.20	0.20	0.06	2.29	0.09
78	0.07	0.08	0.10	0.13	0.30	0.21	0.21	0.06	2.37	0.09
79	0.07	0.08	0.10	0.13	0.31	0.21	0.21	0.06	2.44	0.09
80	0.07	0.08	0.10	0.13	0.31	0.22	0.22	0.06	2.51	0.09

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD emission factors are also applied to port trucks.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1-1H. 2008 EMFAC Emission Factors for Evaporative Total Organic Gases: Vehicle Technology Non-Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	71.22	50.10	39.84	8.16	24.36	34.74	0.00	0.00	0.00	0.50
1	71.22	50.10	39.84	8.16	24.36	34.74	0.00	0.00	0.00	0.50
2	35.61	25.05	19.92	4.08	12.18	17.37	0.00	0.00	0.00	0.25
3	23.74	16.70	13.28	2.72	8.12	11.58	0.00	0.00	0.00	0.17
4	17.81	12.53	9.96	2.04	6.09	8.69	0.00	0.00	0.00	0.13
5	14.24	10.02	7.97	1.63	4.87	6.95	0.00	0.00	0.00	0.10
6	12.82	9.02	7.17	1.47	4.38	6.25	0.00	0.00	0.00	0.09
7	11.40	8.02	6.37	1.31	3.90	5.56	0.00	0.00	0.00	0.08
8	9.97	7.01	5.58	1.14	3.41	4.86	0.00	0.00	0.00	0.07
9	8.55	6.01	4.78	0.98	2.92	4.17	0.00	0.00	0.00	0.06
10	7.12	5.01	3.98	0.82	2.44	3.47	0.00	0.00	0.00	0.05
11	6.65	4.68	3.72	0.76	2.27	3.24	0.00	0.00	0.00	0.05
12	6.17	4.34	3.45	0.71	2.11	3.01	0.00	0.00	0.00	0.04
13	5.70	4.01	3.19	0.65	1.95	2.78	0.00	0.00	0.00	0.04
14	5.22	3.67	2.92	0.60	1.79	2.55	0.00	0.00	0.00	0.04
15	4.75	3.34	2.66	0.54	1.62	2.32	0.00	0.00	0.00	0.03
16	4.51	3.17	2.52	0.52	1.54	2.20	0.00	0.00	0.00	0.03
17	4.27	3.01	2.39	0.49	1.46	2.08	0.00	0.00	0.00	0.03
18	4.04	2.84	2.26	0.46	1.38	1.97	0.00	0.00	0.00	0.03
19	3.80	2.67	2.12	0.44	1.30	1.85	0.00	0.00	0.00	0.03
20	3.56	2.51	1.99	0.41	1.22	1.74	0.00	0.00	0.00	0.03
21	3.42	2.40	1.91	0.39	1.17	1.67	0.00	0.00	0.00	0.02
22	3.28	2.30	1.83	0.38	1.12	1.60	0.00	0.00	0.00	0.02
23	3.13	2.20	1.75	0.36	1.07	1.53	0.00	0.00	0.00	0.02
24	2.99	2.10	1.67	0.34	1.02	1.46	0.00	0.00	0.00	0.02
25	2.85	2.00	1.59	0.33	0.97	1.39	0.00	0.00	0.00	0.02
26	2.75	1.94	1.54	0.32	0.94	1.34	0.00	0.00	0.00	0.02
27	2.66	1.87	1.49	0.30	0.91	1.30	0.00	0.00	0.00	0.02
28	2.56	1.80	1.43	0.29	0.88	1.25	0.00	0.00	0.00	0.02
29	2.47	1.74	1.38	0.28	0.84	1.20	0.00	0.00	0.00	0.02
30	2.37	1.67	1.33	0.27	0.81	1.16	0.00	0.00	0.00	0.02
31	2.31	1.62	1.29	0.26	0.79	1.12	0.00	0.00	0.00	0.02
32	2.24	1.57	1.25	0.26	0.77	1.09	0.00	0.00	0.00	0.02
33	2.17	1.53	1.21	0.25	0.74	1.06	0.00	0.00	0.00	0.02
34	2.10	1.48	1.18	0.24	0.72	1.03	0.00	0.00	0.00	0.01
35	2.03	1.43	1.14	0.23	0.70	0.99	0.00	0.00	0.00	0.01
36	1.98	1.40	1.11	0.23	0.68	0.97	0.00	0.00	0.00	0.01
37	1.93	1.36	1.08	0.22	0.66	0.94	0.00	0.00	0.00	0.01
38	1.88	1.32	1.05	0.22	0.64	0.92	0.00	0.00	0.00	0.01
39	1.83	1.29	1.02	0.21	0.63	0.89	0.00	0.00	0.00	0.01
40	1.78	1.25	1.00	0.20	0.61	0.87	0.00	0.00	0.00	0.01
41	1.74	1.22	0.97	0.20	0.60	0.85	0.00	0.00	0.00	0.01
42	1.70	1.20	0.95	0.19	0.58	0.83	0.00	0.00	0.00	0.01
43	1.66	1.17	0.93	0.19	0.57	0.81	0.00	0.00	0.00	0.01
44	1.62	1.14	0.91	0.19	0.55	0.79	0.00	0.00	0.00	0.01
45	1.58	1.11	0.89	0.18	0.54	0.77	0.00	0.00	0.00	0.01
46	1.55	1.09	0.87	0.18	0.53	0.76	0.00	0.00	0.00	0.01
47	1.52	1.07	0.85	0.17	0.52	0.74	0.00	0.00	0.00	0.01
48	1.49	1.05	0.83	0.17	0.51	0.73	0.00	0.00	0.00	0.01

Table C.1-1H. 2008 EMFAC Emission Factors for Evaporative Total Organic Gases: Vehicle Technology Non-Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
49	1.46	1.02	0.81	0.17	0.50	0.71	0.00	0.00	0.00	0.01
50	1.42	1.00	0.80	0.16	0.49	0.69	0.00	0.00	0.00	0.01
51	1.40	0.98	0.78	0.16	0.48	0.68	0.00	0.00	0.00	0.01
52	1.37	0.97	0.77	0.16	0.47	0.67	0.00	0.00	0.00	0.01
53	1.35	0.95	0.75	0.15	0.46	0.66	0.00	0.00	0.00	0.01
54	1.32	0.93	0.74	0.15	0.45	0.64	0.00	0.00	0.00	0.01
55	1.29	0.91	0.72	0.15	0.44	0.63	0.00	0.00	0.00	0.01
56	1.27	0.90	0.71	0.15	0.44	0.62	0.00	0.00	0.00	0.01
57	1.25	0.88	0.70	0.14	0.43	0.61	0.00	0.00	0.00	0.01
58	1.23	0.87	0.69	0.14	0.42	0.60	0.00	0.00	0.00	0.01
59	1.21	0.85	0.68	0.14	0.41	0.59	0.00	0.00	0.00	0.01
60	1.19	0.84	0.66	0.14	0.41	0.58	0.00	0.00	0.00	0.01
61	1.17	0.82	0.65	0.13	0.40	0.57	0.00	0.00	0.00	0.01
62	1.15	0.81	0.64	0.13	0.39	0.56	0.00	0.00	0.00	0.01
63	1.13	0.80	0.63	0.13	0.39	0.55	0.00	0.00	0.00	0.01
64	1.11	0.78	0.62	0.13	0.38	0.54	0.00	0.00	0.00	0.01
65	1.10	0.77	0.61	0.13	0.37	0.53	0.00	0.00	0.00	0.01
66	1.08	0.76	0.60	0.12	0.37	0.53	0.00	0.00	0.00	0.01
67	1.06	0.75	0.60	0.12	0.36	0.52	0.00	0.00	0.00	0.01
68	1.05	0.74	0.59	0.12	0.36	0.51	0.00	0.00	0.00	0.01
69	1.03	0.73	0.58	0.12	0.35	0.50	0.00	0.00	0.00	0.01
70	1.02	0.72	0.57	0.12	0.35	0.50	0.00	0.00	0.00	0.01
71	1.00	0.71	0.56	0.12	0.34	0.49	0.00	0.00	0.00	0.01
72	0.99	0.70	0.55	0.11	0.34	0.48	0.00	0.00	0.00	0.01
73	0.98	0.69	0.55	0.11	0.33	0.48	0.00	0.00	0.00	0.01
74	0.96	0.68	0.54	0.11	0.33	0.47	0.00	0.00	0.00	0.01
75	0.95	0.67	0.53	0.11	0.32	0.46	0.00	0.00	0.00	0.01
76	0.94	0.66	0.52	0.11	0.32	0.46	0.00	0.00	0.00	0.01
77	0.93	0.65	0.52	0.11	0.32	0.45	0.00	0.00	0.00	0.01
78	0.91	0.64	0.51	0.10	0.31	0.45	0.00	0.00	0.00	0.01
79	0.90	0.63	0.50	0.10	0.31	0.44	0.00	0.00	0.00	0.01
80	0.89	0.63	0.50	0.10	0.30	0.43	0.00	0.00	0.00	0.01

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD emission factors are also applied to port trucks.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1-1I. 2008 EMFAC Emission Factors for Evaporative Total Organic Gases: Vehicle Technology Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT	MHD	HHD	Autos
0	2.10	2.52	2.70	2.58	4.32	3.78	3.09	0.57	0.17	2.33
1	2.10	2.52	2.70	2.58	4.32	3.78	3.09	0.57	0.17	2.33
2	1.05	1.26	1.35	1.29	2.16	1.89	1.55	0.29	0.09	1.16
3	0.70	0.84	0.90	0.86	1.44	1.26	1.03	0.19	0.06	0.78
4	0.53	0.63	0.68	0.65	1.08	0.95	0.77	0.14	0.04	0.58
5	0.42	0.50	0.54	0.52	0.86	0.76	0.62	0.11	0.03	0.47
6	0.38	0.45	0.49	0.46	0.78	0.68	0.56	0.10	0.03	0.42
7	0.34	0.40	0.43	0.41	0.69	0.60	0.50	0.09	0.03	0.37
8	0.29	0.35	0.38	0.36	0.60	0.53	0.43	0.08	0.02	0.33
9	0.25	0.30	0.32	0.31	0.52	0.45	0.37	0.07	0.02	0.28
10	0.21	0.25	0.27	0.26	0.43	0.38	0.31	0.06	0.02	0.23
11	0.20	0.24	0.25	0.24	0.40	0.35	0.29	0.05	0.02	0.22
12	0.18	0.22	0.23	0.22	0.37	0.33	0.27	0.05	0.01	0.20
13	0.17	0.20	0.22	0.21	0.35	0.30	0.25	0.05	0.01	0.19
14	0.15	0.18	0.20	0.19	0.32	0.28	0.23	0.04	0.01	0.17
15	0.14	0.17	0.18	0.17	0.29	0.25	0.21	0.04	0.01	0.16
16	0.13	0.16	0.17	0.16	0.27	0.24	0.20	0.04	0.01	0.15
17	0.13	0.15	0.16	0.15	0.26	0.23	0.19	0.03	0.01	0.14
18	0.12	0.14	0.15	0.15	0.24	0.21	0.18	0.03	0.01	0.13
19	0.11	0.13	0.14	0.14	0.23	0.20	0.17	0.03	0.01	0.12
20	0.11	0.13	0.14	0.13	0.22	0.19	0.15	0.03	0.01	0.12
21	0.10	0.12	0.13	0.12	0.21	0.18	0.15	0.03	0.01	0.11
22	0.10	0.12	0.12	0.12	0.20	0.17	0.14	0.03	0.01	0.11
23	0.09	0.11	0.12	0.11	0.19	0.17	0.14	0.03	0.01	0.10
24	0.09	0.11	0.11	0.11	0.18	0.16	0.13	0.02	0.01	0.10
25	0.08	0.10	0.11	0.10	0.17	0.15	0.12	0.02	0.01	0.09
26	0.08	0.10	0.10	0.10	0.17	0.15	0.12	0.02	0.01	0.09
27	0.08	0.09	0.10	0.10	0.16	0.14	0.12	0.02	0.01	0.09
28	0.08	0.09	0.10	0.09	0.16	0.14	0.11	0.02	0.01	0.08
29	0.07	0.09	0.09	0.09	0.15	0.13	0.11	0.02	0.01	0.08
30	0.07	0.08	0.09	0.09	0.14	0.13	0.10	0.02	0.01	0.08
31	0.07	0.08	0.09	0.08	0.14	0.12	0.10	0.02	0.01	0.08
32	0.07	0.08	0.08	0.08	0.14	0.12	0.10	0.02	0.01	0.07
33	0.06	0.08	0.08	0.08	0.13	0.12	0.09	0.02	0.01	0.07
34	0.06	0.07	0.08	0.08	0.13	0.11	0.09	0.02	0.01	0.07
35	0.06	0.07	0.08	0.07	0.12	0.11	0.09	0.02	0.00	0.07
36	0.06	0.07	0.08	0.07	0.12	0.11	0.09	0.02	0.00	0.06
37	0.06	0.07	0.07	0.07	0.12	0.10	0.08	0.02	0.00	0.06
38	0.06	0.07	0.07	0.07	0.11	0.10	0.08	0.02	0.00	0.06
39	0.05	0.06	0.07	0.07	0.11	0.10	0.08	0.01	0.00	0.06
40	0.05	0.06	0.07	0.06	0.11	0.09	0.08	0.01	0.00	0.06
41	0.05	0.06	0.07	0.06	0.11	0.09	0.08	0.01	0.00	0.06
42	0.05	0.06	0.06	0.06	0.10	0.09	0.07	0.01	0.00	0.06
43	0.05	0.06	0.06	0.06	0.10	0.09	0.07	0.01	0.00	0.05
44	0.05	0.06	0.06	0.06	0.10	0.09	0.07	0.01	0.00	0.05
45	0.05	0.06	0.06	0.06	0.10	0.08	0.07	0.01	0.00	0.05
46	0.05	0.05	0.06	0.06	0.09	0.08	0.07	0.01	0.00	0.05
47	0.04	0.05	0.06	0.06	0.09	0.08	0.07	0.01	0.00	0.05
48	0.04	0.05	0.06	0.05	0.09	0.08	0.06	0.01	0.00	0.05

Table C.1-1I. 2008 EMFAC Emission Factors for Evaporative Total Organic Gases: Vehicle Technology Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT	MHD	HHD	Autos
49	0.04	0.05	0.06	0.05	0.09	0.08	0.06	0.01	0.00	0.05
50	0.04	0.05	0.05	0.05	0.09	0.08	0.06	0.01	0.00	0.05
51	0.04	0.05	0.05	0.05	0.08	0.07	0.06	0.01	0.00	0.05
52	0.04	0.05	0.05	0.05	0.08	0.07	0.06	0.01	0.00	0.04
53	0.04	0.05	0.05	0.05	0.08	0.07	0.06	0.01	0.00	0.04
54	0.04	0.05	0.05	0.05	0.08	0.07	0.06	0.01	0.00	0.04
55	0.04	0.05	0.05	0.05	0.08	0.07	0.06	0.01	0.00	0.04
56	0.04	0.05	0.05	0.05	0.08	0.07	0.06	0.01	0.00	0.04
57	0.04	0.04	0.05	0.05	0.08	0.07	0.05	0.01	0.00	0.04
58	0.04	0.04	0.05	0.04	0.07	0.07	0.05	0.01	0.00	0.04
59	0.04	0.04	0.05	0.04	0.07	0.06	0.05	0.01	0.00	0.04
60	0.04	0.04	0.05	0.04	0.07	0.06	0.05	0.01	0.00	0.04
61	0.03	0.04	0.04	0.04	0.07	0.06	0.05	0.01	0.00	0.04
62	0.03	0.04	0.04	0.04	0.07	0.06	0.05	0.01	0.00	0.04
63	0.03	0.04	0.04	0.04	0.07	0.06	0.05	0.01	0.00	0.04
64	0.03	0.04	0.04	0.04	0.07	0.06	0.05	0.01	0.00	0.04
65	0.03	0.04	0.04	0.04	0.07	0.06	0.05	0.01	0.00	0.04
66	0.03	0.04	0.04	0.04	0.07	0.06	0.05	0.01	0.00	0.04
67	0.03	0.04	0.04	0.04	0.06	0.06	0.05	0.01	0.00	0.03
68	0.03	0.04	0.04	0.04	0.06	0.06	0.05	0.01	0.00	0.03
69	0.03	0.04	0.04	0.04	0.06	0.05	0.04	0.01	0.00	0.03
70	0.03	0.04	0.04	0.04	0.06	0.05	0.04	0.01	0.00	0.03
71	0.03	0.04	0.04	0.04	0.06	0.05	0.04	0.01	0.00	0.03
72	0.03	0.04	0.04	0.04	0.06	0.05	0.04	0.01	0.00	0.03
73	0.03	0.03	0.04	0.04	0.06	0.05	0.04	0.01	0.00	0.03
74	0.03	0.03	0.04	0.03	0.06	0.05	0.04	0.01	0.00	0.03
75	0.03	0.03	0.04	0.03	0.06	0.05	0.04	0.01	0.00	0.03
76	0.03	0.03	0.04	0.03	0.06	0.05	0.04	0.01	0.00	0.03
77	0.03	0.03	0.04	0.03	0.06	0.05	0.04	0.01	0.00	0.03
78	0.03	0.03	0.03	0.03	0.06	0.05	0.04	0.01	0.00	0.03
79	0.03	0.03	0.03	0.03	0.05	0.05	0.04	0.01	0.00	0.03
80	0.03	0.03	0.03	0.03	0.05	0.05	0.04	0.01	0.00	0.03

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD emission factors are also applied to port trucks.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

**Table C.1-1J. 2008 EMFAC Emission Factors for Combined Exhaust and Evaporative
Reactive Organic Gases**

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	2.58	3.48	2.88	2.58	23.52	16.94	22.00	7.35	13.40	2.78
1	3.14	4.43	3.49	3.43	5.49	3.47	5.02	1.96	14.13	3.45
2	1.85	2.69	2.05	2.14	3.69	2.33	3.37	1.54	14.01	2.06
3	1.39	2.07	1.54	1.67	3.09	1.95	2.82	1.40	13.97	1.57
4	1.13	1.71	1.25	1.39	2.79	1.76	2.55	1.33	13.95	1.28
5	0.96	1.47	1.06	1.20	2.61	1.65	2.38	1.29	13.94	1.10
6	0.88	1.35	0.97	1.10	2.40	1.53	2.20	1.21	12.73	1.01
7	0.80	1.23	0.88	1.00	2.20	1.40	2.02	1.12	11.53	0.92
8	0.72	1.12	0.79	0.90	2.00	1.28	1.83	1.04	10.32	0.82
9	0.63	1.00	0.70	0.81	1.80	1.16	1.65	0.96	9.12	0.73
10	0.55	0.88	0.61	0.71	1.60	1.04	1.47	0.88	7.91	0.64
11	0.52	0.83	0.57	0.66	1.50	0.98	1.38	0.83	7.12	0.60
12	0.48	0.77	0.53	0.62	1.39	0.91	1.28	0.79	6.33	0.56
13	0.45	0.72	0.49	0.57	1.29	0.85	1.19	0.74	5.54	0.52
14	0.41	0.67	0.45	0.53	1.19	0.79	1.10	0.69	4.74	0.48
15	0.38	0.61	0.41	0.49	1.09	0.73	1.00	0.65	3.95	0.44
16	0.36	0.58	0.39	0.46	1.03	0.69	0.95	0.61	3.59	0.42
17	0.34	0.55	0.37	0.43	0.97	0.65	0.89	0.58	3.24	0.40
18	0.32	0.52	0.35	0.41	0.90	0.61	0.84	0.55	2.88	0.38
19	0.30	0.49	0.33	0.38	0.84	0.58	0.78	0.52	2.52	0.35
20	0.28	0.46	0.31	0.36	0.78	0.54	0.73	0.49	2.16	0.33
21	0.27	0.45	0.29	0.34	0.74	0.51	0.69	0.47	2.07	0.32
22	0.26	0.43	0.28	0.33	0.71	0.49	0.66	0.45	1.99	0.30
23	0.25	0.41	0.27	0.31	0.67	0.47	0.62	0.43	1.90	0.29
24	0.23	0.39	0.25	0.30	0.63	0.44	0.59	0.41	1.81	0.28
25	0.22	0.37	0.24	0.28	0.59	0.42	0.55	0.39	1.72	0.26
26	0.21	0.36	0.23	0.27	0.57	0.40	0.53	0.38	1.65	0.25
27	0.21	0.35	0.22	0.26	0.54	0.39	0.50	0.36	1.58	0.25
28	0.20	0.33	0.21	0.25	0.52	0.37	0.48	0.35	1.52	0.24
29	0.19	0.32	0.21	0.24	0.49	0.35	0.46	0.34	1.45	0.23
30	0.18	0.31	0.20	0.23	0.47	0.34	0.44	0.32	1.38	0.22
31	0.18	0.30	0.19	0.22	0.45	0.32	0.42	0.31	1.33	0.21
32	0.17	0.29	0.19	0.22	0.43	0.31	0.40	0.30	1.28	0.21
33	0.17	0.28	0.18	0.21	0.41	0.30	0.39	0.29	1.23	0.20
34	0.16	0.28	0.17	0.20	0.40	0.29	0.37	0.28	1.18	0.20
35	0.16	0.27	0.17	0.20	0.38	0.28	0.36	0.27	1.13	0.19
36	0.15	0.26	0.16	0.19	0.37	0.27	0.35	0.27	1.10	0.19
37	0.15	0.26	0.16	0.19	0.36	0.26	0.34	0.26	1.07	0.18
38	0.15	0.25	0.16	0.18	0.35	0.26	0.33	0.25	1.04	0.18
39	0.14	0.25	0.15	0.18	0.33	0.25	0.31	0.25	1.01	0.18
40	0.14	0.24	0.15	0.18	0.32	0.24	0.30	0.24	0.98	0.17
41	0.14	0.24	0.15	0.17	0.32	0.24	0.30	0.23	0.96	0.17
42	0.14	0.24	0.14	0.17	0.31	0.23	0.29	0.23	0.95	0.17
43	0.13	0.23	0.14	0.17	0.30	0.23	0.28	0.22	0.93	0.17
44	0.13	0.23	0.14	0.16	0.29	0.22	0.27	0.22	0.92	0.16
45	0.13	0.23	0.14	0.16	0.28	0.21	0.27	0.21	0.90	0.16
46	0.13	0.23	0.13	0.16	0.28	0.21	0.26	0.21	0.91	0.16
47	0.13	0.23	0.13	0.16	0.27	0.21	0.26	0.21	0.91	0.16

Table C.1-1J. 2008 EMFAC Emission Factors for Combined Exhaust and Evaporative Reactive Organic Gases

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
48	0.12	0.22	0.13	0.16	0.27	0.20	0.25	0.21	0.91	0.16
49	0.12	0.22	0.13	0.16	0.26	0.20	0.25	0.20	0.91	0.16
50	0.12	0.22	0.13	0.16	0.26	0.20	0.24	0.20	0.91	0.16
51	0.12	0.22	0.13	0.16	0.25	0.19	0.24	0.20	0.93	0.16
52	0.12	0.22	0.13	0.16	0.25	0.19	0.24	0.19	0.95	0.16
53	0.12	0.22	0.13	0.16	0.25	0.19	0.23	0.19	0.97	0.16
54	0.12	0.22	0.13	0.16	0.24	0.19	0.23	0.19	0.99	0.16
55	0.12	0.22	0.13	0.16	0.24	0.19	0.23	0.19	1.00	0.16
56	0.12	0.23	0.13	0.16	0.24	0.18	0.23	0.19	1.04	0.16
57	0.12	0.23	0.13	0.16	0.24	0.18	0.23	0.19	1.07	0.17
58	0.12	0.23	0.13	0.16	0.24	0.18	0.22	0.19	1.10	0.17
59	0.13	0.23	0.13	0.16	0.24	0.18	0.22	0.18	1.14	0.17
60	0.13	0.24	0.13	0.16	0.23	0.18	0.22	0.18	1.17	0.17
61	0.13	0.24	0.13	0.17	0.23	0.18	0.22	0.18	1.22	0.18
62	0.13	0.25	0.13	0.17	0.23	0.18	0.22	0.18	1.27	0.18
63	0.13	0.25	0.13	0.17	0.23	0.18	0.22	0.18	1.32	0.18
64	0.13	0.26	0.14	0.18	0.24	0.18	0.22	0.18	1.37	0.19
65	0.14	0.26	0.14	0.18	0.24	0.18	0.22	0.18	1.42	0.19
66	0.14	0.26	0.14	0.18	0.24	0.18	0.22	0.19	1.49	0.20
67	0.14	0.26	0.14	0.18	0.24	0.18	0.23	0.19	1.55	0.20
68	0.13	0.26	0.14	0.18	0.24	0.18	0.23	0.19	1.62	0.20
69	0.13	0.26	0.14	0.18	0.24	0.18	0.23	0.19	1.69	0.20
70	0.13	0.26	0.14	0.18	0.25	0.19	0.23	0.19	1.75	0.20
71	0.13	0.26	0.13	0.18	0.25	0.19	0.24	0.19	1.83	0.21
72	0.13	0.26	0.13	0.18	0.25	0.19	0.24	0.20	1.92	0.21
73	0.13	0.26	0.13	0.18	0.26	0.19	0.24	0.20	2.00	0.22
74	0.13	0.26	0.13	0.18	0.26	0.20	0.25	0.20	2.08	0.22
75	0.13	0.26	0.13	0.18	0.27	0.20	0.25	0.20	2.16	0.23
76	0.13	0.26	0.13	0.17	0.27	0.20	0.26	0.21	2.26	0.23
77	0.13	0.26	0.13	0.17	0.28	0.21	0.26	0.21	2.36	0.24
78	0.13	0.25	0.13	0.17	0.29	0.21	0.27	0.22	2.46	0.25
79	0.13	0.25	0.13	0.17	0.29	0.22	0.28	0.22	2.56	0.26
80	0.13	0.25	0.13	0.17	0.30	0.22	0.28	0.22	2.66	0.26

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD emission factors are also applied to port trucks.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1-2A. 2035 EMFAC Emission Factors for CO

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
0	0.00	0.00	0.00	0.00	109.76	86.02	104.22	44.68	41.06	0.00	41.31
1	0.84	1.03	1.63	2.11	1.26	1.45	1.30	4.29	5.98	1.35	6.48
2	0.84	1.03	1.63	2.11	1.26	1.45	1.30	4.29	5.98	1.35	6.48
3	0.83	1.02	1.61	2.09	1.26	1.45	1.30	4.29	5.98	1.34	6.48
4	0.82	1.00	1.58	2.05	1.26	1.45	1.30	4.29	5.98	1.32	6.48
5	0.80	0.98	1.55	2.01	1.26	1.45	1.30	4.29	5.98	1.29	6.48
6	0.79	0.96	1.53	1.97	1.17	1.36	1.22	4.02	5.51	1.27	5.96
7	0.77	0.94	1.50	1.93	1.09	1.27	1.13	3.75	5.05	1.24	5.44
8	0.76	0.92	1.47	1.90	1.01	1.17	1.05	3.49	4.59	1.22	4.92
9	0.75	0.91	1.44	1.86	0.93	1.08	0.97	3.22	4.13	1.20	4.40
10	0.73	0.89	1.41	1.83	0.85	0.99	0.88	2.95	3.67	1.17	3.89
11	0.72	0.87	1.39	1.79	0.80	0.94	0.83	2.79	3.37	1.15	3.55
12	0.71	0.86	1.36	1.76	0.75	0.88	0.78	2.62	3.08	1.13	3.22
13	0.69	0.84	1.34	1.73	0.70	0.82	0.73	2.46	2.79	1.11	2.89
14	0.68	0.83	1.32	1.70	0.65	0.77	0.68	2.29	2.50	1.09	2.56
15	0.67	0.81	1.29	1.67	0.60	0.71	0.63	2.13	2.21	1.07	2.23
16	0.66	0.80	1.27	1.64	0.57	0.68	0.60	2.02	2.08	1.05	2.09
17	0.65	0.78	1.25	1.61	0.54	0.64	0.57	1.92	1.95	1.03	1.95
18	0.63	0.77	1.23	1.58	0.51	0.61	0.53	1.81	1.82	1.01	1.82
19	0.62	0.76	1.20	1.55	0.48	0.57	0.50	1.71	1.69	0.99	1.68
20	0.61	0.74	1.18	1.53	0.45	0.54	0.47	1.61	1.56	0.98	1.55
21	0.60	0.73	1.16	1.50	0.43	0.51	0.45	1.54	1.53	0.96	1.53
22	0.59	0.72	1.14	1.48	0.41	0.49	0.43	1.47	1.50	0.94	1.52
23	0.58	0.71	1.12	1.45	0.39	0.47	0.41	1.40	1.47	0.93	1.50
24	0.57	0.69	1.11	1.43	0.37	0.44	0.39	1.34	1.44	0.91	1.48
25	0.56	0.68	1.09	1.40	0.36	0.42	0.37	1.27	1.41	0.90	1.47
26	0.55	0.67	1.07	1.38	0.34	0.41	0.36	1.22	1.39	0.89	1.46
27	0.54	0.66	1.05	1.36	0.33	0.39	0.35	1.18	1.38	0.87	1.45
28	0.54	0.65	1.04	1.34	0.32	0.38	0.33	1.14	1.36	0.86	1.44
29	0.53	0.64	1.02	1.31	0.31	0.36	0.32	1.09	1.34	0.85	1.43
30	0.52	0.63	1.00	1.29	0.29	0.35	0.31	1.05	1.32	0.83	1.42
31	0.51	0.62	0.99	1.27	0.29	0.34	0.30	1.02	1.31	0.82	1.42
32	0.50	0.61	0.97	1.25	0.28	0.33	0.29	0.99	1.30	0.81	1.41

Table C.1-2A. 2035 EMFAC Emission Factors for CO

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
33	0.49	0.60	0.96	1.23	0.27	0.32	0.28	0.97	1.29	0.80	1.41
34	0.49	0.59	0.94	1.21	0.26	0.31	0.27	0.94	1.28	0.79	1.40
35	0.48	0.58	0.93	1.19	0.26	0.30	0.27	0.91	1.27	0.78	1.40
36	0.47	0.57	0.91	1.18	0.25	0.30	0.26	0.89	1.26	0.77	1.40
37	0.47	0.56	0.90	1.16	0.25	0.29	0.26	0.88	1.26	0.76	1.40
38	0.46	0.55	0.88	1.14	0.24	0.29	0.25	0.86	1.26	0.75	1.40
39	0.45	0.55	0.87	1.12	0.24	0.28	0.25	0.84	1.26	0.74	1.40
40	0.44	0.54	0.86	1.11	0.24	0.28	0.24	0.82	1.25	0.73	1.40
41	0.44	0.53	0.85	1.09	0.23	0.27	0.24	0.82	1.26	0.73	1.41
42	0.43	0.52	0.83	1.07	0.23	0.27	0.24	0.81	1.26	0.72	1.42
43	0.43	0.52	0.82	1.06	0.23	0.27	0.24	0.80	1.26	0.71	1.42
44	0.42	0.51	0.81	1.04	0.23	0.27	0.24	0.79	1.27	0.70	1.43
45	0.41	0.50	0.80	1.03	0.23	0.26	0.24	0.78	1.27	0.70	1.43
46	0.41	0.49	0.79	1.01	0.23	0.26	0.24	0.78	1.28	0.69	1.45
47	0.40	0.49	0.78	1.00	0.23	0.26	0.24	0.78	1.29	0.69	1.46
48	0.40	0.48	0.76	0.99	0.23	0.26	0.24	0.78	1.30	0.68	1.47
49	0.39	0.47	0.75	0.97	0.23	0.26	0.24	0.78	1.31	0.68	1.48
50	0.39	0.47	0.74	0.96	0.23	0.26	0.24	0.78	1.32	0.67	1.49
51	0.38	0.46	0.73	0.95	0.23	0.27	0.24	0.78	1.34	0.67	1.51
52	0.38	0.45	0.72	0.93	0.24	0.27	0.24	0.79	1.35	0.67	1.53
53	0.37	0.45	0.71	0.92	0.24	0.27	0.25	0.80	1.37	0.67	1.54
54	0.37	0.44	0.70	0.91	0.24	0.28	0.25	0.80	1.38	0.67	1.56
55	0.36	0.44	0.70	0.90	0.25	0.28	0.25	0.81	1.40	0.67	1.58
56	0.36	0.43	0.69	0.89	0.25	0.28	0.26	0.82	1.42	0.67	1.60
57	0.35	0.43	0.68	0.87	0.26	0.29	0.27	0.84	1.45	0.67	1.62
58	0.35	0.42	0.67	0.86	0.27	0.29	0.27	0.85	1.47	0.68	1.64
59	0.34	0.41	0.66	0.85	0.27	0.30	0.28	0.87	1.50	0.68	1.67
60	0.34	0.41	0.65	0.84	0.28	0.31	0.28	0.88	1.52	0.68	1.69
61	0.33	0.40	0.64	0.83	0.29	0.32	0.29	0.91	1.55	0.69	1.72
62	0.33	0.40	0.64	0.82	0.30	0.33	0.31	0.93	1.59	0.70	1.74
63	0.33	0.39	0.63	0.81	0.31	0.34	0.32	0.96	1.62	0.71	1.77
64	0.32	0.39	0.62	0.80	0.32	0.35	0.33	0.98	1.65	0.72	1.80
65	0.32	0.39	0.61	0.79	0.33	0.36	0.34	1.01	1.68	0.73	1.83

Table C.1-2A. 2035 EMFAC Emission Factors for CO

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
66	0.32	0.39	0.61	0.79	0.35	0.37	0.35	1.05	1.73	0.76	1.86
67	0.32	0.39	0.61	0.79	0.36	0.39	0.37	1.09	1.77	0.78	1.89
68	0.32	0.39	0.61	0.79	0.38	0.40	0.38	1.13	1.82	0.81	1.93
69	0.32	0.39	0.61	0.79	0.40	0.42	0.40	1.17	1.86	0.83	1.96
70	0.32	0.39	0.61	0.79	0.41	0.43	0.42	1.21	1.90	0.86	1.99
71	0.32	0.39	0.61	0.79	0.44	0.46	0.44	1.27	1.96	0.91	2.03
72	0.32	0.39	0.61	0.79	0.46	0.48	0.47	1.33	2.02	0.95	2.07
73	0.32	0.39	0.61	0.79	0.49	0.50	0.49	1.39	2.08	1.00	2.11
74	0.32	0.39	0.61	0.79	0.52	0.53	0.52	1.45	2.14	1.05	2.15
75	0.32	0.39	0.61	0.79	0.54	0.55	0.55	1.51	2.21	1.09	2.18
76	0.32	0.39	0.61	0.79	0.59	0.59	0.59	1.61	2.29	1.18	2.23
77	0.32	0.39	0.61	0.79	0.63	0.63	0.63	1.70	2.37	1.26	2.27
78	0.32	0.39	0.61	0.79	0.67	0.67	0.67	1.80	2.46	1.35	2.32
79	0.32	0.39	0.61	0.79	0.72	0.71	0.71	1.89	2.54	1.43	2.36
80	0.32	0.39	0.61	0.79	0.76	0.74	0.75	1.99	2.63	1.52	2.40

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

⁵ Port Truck emissions are HHD emission factors adjusted by the projected fleet mix due to the Ports Clean Truck Program enacted in 2008 which bans certain model year engines from operating within the Ports. EMFAC2007 does not account for this rule.

Table C.1-2B. 2035 EMFAC Emission Factors for NO_x

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD ⁴	HHD ⁴	Autos ⁵	Port Truck ⁶
0	0.00	0.00	0.00	0.00	15.26	32.44	19.27	32.76	56.84	0.00	123.17
1	0.07	0.09	0.15	0.18	0.38	0.65	0.44	0.75	3.40	0.11	10.75
2	0.07	0.09	0.15	0.18	0.38	0.65	0.44	0.75	3.40	0.11	10.75
3	0.07	0.09	0.15	0.18	0.38	0.65	0.44	0.75	3.40	0.11	10.75
4	0.07	0.08	0.15	0.17	0.38	0.65	0.44	0.75	3.40	0.11	10.75
5	0.07	0.08	0.14	0.17	0.38	0.65	0.44	0.75	3.40	0.11	10.75
6	0.06	0.08	0.14	0.16	0.37	0.63	0.43	0.73	3.23	0.10	10.21
7	0.06	0.08	0.13	0.16	0.37	0.61	0.42	0.70	3.06	0.10	9.68
8	0.06	0.07	0.13	0.15	0.36	0.59	0.41	0.68	2.89	0.10	9.14
9	0.06	0.07	0.13	0.15	0.35	0.57	0.40	0.65	2.72	0.10	8.60
10	0.06	0.07	0.12	0.15	0.34	0.55	0.39	0.63	2.55	0.09	8.06
11	0.06	0.07	0.12	0.14	0.33	0.53	0.38	0.61	2.43	0.09	7.68
12	0.05	0.07	0.12	0.14	0.33	0.52	0.37	0.59	2.31	0.09	7.29
13	0.05	0.07	0.12	0.14	0.32	0.51	0.36	0.58	2.19	0.09	6.91
14	0.05	0.06	0.11	0.13	0.32	0.49	0.36	0.56	2.07	0.09	6.52
15	0.05	0.06	0.11	0.13	0.31	0.48	0.35	0.54	1.95	0.08	6.14
16	0.05	0.06	0.11	0.13	0.31	0.47	0.35	0.53	1.88	0.08	5.91
17	0.05	0.06	0.11	0.12	0.30	0.46	0.34	0.52	1.81	0.08	5.69
18	0.05	0.06	0.10	0.12	0.30	0.45	0.34	0.51	1.74	0.08	5.46
19	0.05	0.06	0.10	0.12	0.30	0.44	0.33	0.50	1.67	0.08	5.24
20	0.05	0.06	0.10	0.12	0.29	0.44	0.33	0.49	1.60	0.08	5.01
21	0.05	0.06	0.10	0.11	0.29	0.43	0.32	0.48	1.56	0.07	4.91
22	0.04	0.05	0.10	0.11	0.29	0.43	0.32	0.47	1.53	0.07	4.81
23	0.04	0.05	0.09	0.11	0.29	0.42	0.32	0.46	1.50	0.07	4.71
24	0.04	0.05	0.09	0.11	0.29	0.42	0.32	0.46	1.47	0.07	4.61
25	0.04	0.05	0.09	0.11	0.28	0.41	0.31	0.45	1.44	0.07	4.50
26	0.04	0.05	0.09	0.11	0.28	0.41	0.31	0.45	1.41	0.07	4.42
27	0.04	0.05	0.09	0.10	0.28	0.40	0.31	0.44	1.38	0.07	4.33
28	0.04	0.05	0.09	0.10	0.28	0.40	0.31	0.44	1.36	0.07	4.25
29	0.04	0.05	0.09	0.10	0.28	0.40	0.31	0.44	1.33	0.07	4.16
30	0.04	0.05	0.09	0.10	0.28	0.40	0.31	0.43	1.31	0.07	4.08
31	0.04	0.05	0.08	0.10	0.28	0.40	0.31	0.43	1.28	0.07	4.01

Table C.1-2B. 2035 EMFAC Emission Factors for NO_x

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD ⁴	HHD ⁴	Autos ⁵	Port Truck ⁶
32	0.04	0.05	0.08	0.10	0.28	0.40	0.31	0.43	1.26	0.07	3.94
33	0.04	0.05	0.08	0.10	0.28	0.40	0.31	0.43	1.24	0.06	3.87
34	0.04	0.05	0.08	0.10	0.28	0.40	0.31	0.43	1.22	0.06	3.80
35	0.04	0.05	0.08	0.09	0.29	0.40	0.31	0.43	1.20	0.06	3.73
36	0.04	0.05	0.08	0.09	0.29	0.40	0.31	0.43	1.18	0.06	3.68
37	0.04	0.05	0.08	0.09	0.29	0.40	0.31	0.43	1.17	0.06	3.63
38	0.04	0.04	0.08	0.09	0.29	0.40	0.32	0.44	1.15	0.06	3.57
39	0.04	0.04	0.08	0.09	0.29	0.41	0.32	0.44	1.13	0.06	3.52
40	0.04	0.04	0.08	0.09	0.29	0.41	0.32	0.44	1.12	0.06	3.47
41	0.04	0.04	0.08	0.09	0.30	0.41	0.32	0.45	1.11	0.06	3.43
42	0.04	0.04	0.08	0.09	0.30	0.42	0.33	0.45	1.09	0.06	3.39
43	0.04	0.04	0.08	0.09	0.30	0.42	0.33	0.46	1.08	0.06	3.36
44	0.04	0.04	0.08	0.09	0.31	0.43	0.33	0.46	1.07	0.06	3.32
45	0.04	0.04	0.08	0.09	0.31	0.43	0.34	0.47	1.06	0.06	3.28
46	0.04	0.04	0.08	0.09	0.31	0.44	0.34	0.48	1.05	0.06	3.26
47	0.04	0.04	0.08	0.09	0.32	0.45	0.35	0.49	1.05	0.06	3.24
48	0.04	0.04	0.08	0.09	0.32	0.46	0.35	0.50	1.04	0.06	3.22
49	0.04	0.04	0.08	0.09	0.33	0.46	0.36	0.51	1.04	0.06	3.20
50	0.04	0.04	0.08	0.09	0.33	0.47	0.36	0.51	1.03	0.06	3.18
51	0.04	0.04	0.08	0.09	0.34	0.48	0.37	0.53	1.03	0.06	3.18
52	0.04	0.04	0.08	0.09	0.34	0.49	0.38	0.54	1.03	0.06	3.17
53	0.04	0.04	0.08	0.09	0.35	0.51	0.39	0.56	1.03	0.06	3.17
54	0.04	0.04	0.08	0.09	0.36	0.52	0.40	0.57	1.02	0.06	3.16
55	0.04	0.05	0.08	0.09	0.36	0.53	0.40	0.59	1.02	0.06	3.16
56	0.04	0.05	0.08	0.09	0.37	0.55	0.41	0.61	1.03	0.06	3.17
57	0.04	0.05	0.08	0.09	0.38	0.56	0.42	0.63	1.03	0.06	3.18
58	0.04	0.05	0.08	0.09	0.39	0.58	0.44	0.65	1.03	0.06	3.20
59	0.04	0.05	0.08	0.09	0.40	0.60	0.45	0.67	1.04	0.06	3.21
60	0.04	0.05	0.08	0.10	0.41	0.62	0.46	0.69	1.04	0.06	3.22
61	0.04	0.05	0.08	0.10	0.42	0.64	0.47	0.72	1.05	0.06	3.25
62	0.04	0.05	0.08	0.10	0.43	0.67	0.49	0.75	1.06	0.07	3.28
63	0.04	0.05	0.08	0.10	0.45	0.69	0.50	0.78	1.07	0.07	3.30

Table C.1-2B. 2035 EMFAC Emission Factors for NO_x

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD ⁴	HHD ⁴	Autos ⁵	Port Truck ⁶
64	0.04	0.05	0.08	0.10	0.46	0.72	0.52	0.81	1.08	0.07	3.33
65	0.04	0.05	0.08	0.10	0.47	0.74	0.53	0.84	1.09	0.07	3.36
66	0.04	0.05	0.08	0.10	0.49	0.78	0.56	0.89	1.10	0.07	3.40
67	0.04	0.05	0.08	0.10	0.51	0.81	0.58	0.93	1.12	0.07	3.45
68	0.04	0.05	0.08	0.10	0.53	0.85	0.60	0.98	1.13	0.07	3.49
69	0.04	0.05	0.08	0.10	0.54	0.88	0.62	1.02	1.14	0.07	3.54
70	0.04	0.05	0.08	0.10	0.56	0.92	0.65	1.07	1.16	0.07	3.58
71	0.04	0.05	0.08	0.10	0.59	0.97	0.68	1.13	1.18	0.07	3.64
72	0.04	0.05	0.08	0.10	0.62	1.03	0.71	1.20	1.20	0.07	3.70
73	0.04	0.05	0.08	0.10	0.64	1.08	0.74	1.26	1.22	0.07	3.76
74	0.04	0.05	0.08	0.10	0.67	1.13	0.78	1.33	1.23	0.07	3.82
75	0.04	0.05	0.08	0.10	0.70	1.19	0.81	1.40	1.25	0.07	3.88
76	0.04	0.05	0.08	0.10	0.73	1.27	0.86	1.50	1.28	0.07	3.96
77	0.04	0.05	0.08	0.10	0.77	1.35	0.91	1.60	1.30	0.07	4.04
78	0.04	0.05	0.08	0.10	0.81	1.43	0.96	1.70	1.33	0.07	4.11
79	0.04	0.05	0.08	0.10	0.85	1.51	1.01	1.80	1.35	0.07	4.19
80	0.04	0.05	0.08	0.10	0.89	1.59	1.06	1.90	1.38	0.07	4.27

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD and MHD emission factors area adjusted to account for the recently promulgated Statewide Public Fleet and Bus rule which mandates that fleets meet certain NO_x and DPM emission factor targets on a yearly schedule. EMFAC2007 does not account for this recent rule, thus emission factors are adjusted to reflect the projected 2035 NO_x and DPM emission factor targets.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

⁶ Port Truck emissions are HHD emission factors adjusted by the projected fleet mix due to the Ports Clean Truck Program enacted in 2008 which bans certain model year engines from operating within the Ports. EMFAC2007 does not account for this rule.

Table C.1-2C. 2035 EMFAC Emission Factors for PM_{2.5}

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
0	0.00	0.00	0.00	0.00	0.14	0.31	0.18	0.60	0.12	0.00	0.10
1	0.08	0.09	0.18	0.18	0.06	0.06	0.06	0.28	0.11	0.12	0.14
2	0.08	0.09	0.18	0.18	0.06	0.06	0.06	0.28	0.11	0.12	0.14
3	0.07	0.08	0.17	0.18	0.06	0.06	0.06	0.28	0.11	0.11	0.14
4	0.07	0.08	0.16	0.16	0.06	0.06	0.06	0.28	0.11	0.10	0.14
5	0.06	0.07	0.15	0.15	0.06	0.06	0.06	0.28	0.11	0.09	0.14
6	0.06	0.07	0.14	0.14	0.06	0.05	0.06	0.26	0.11	0.09	0.14
7	0.05	0.06	0.13	0.13	0.05	0.05	0.05	0.25	0.11	0.08	0.14
8	0.05	0.06	0.12	0.12	0.05	0.05	0.05	0.24	0.10	0.08	0.14
9	0.05	0.05	0.11	0.11	0.05	0.05	0.05	0.23	0.10	0.07	0.13
10	0.04	0.05	0.10	0.10	0.04	0.04	0.04	0.22	0.10	0.06	0.13
11	0.04	0.05	0.09	0.09	0.04	0.04	0.04	0.21	0.10	0.06	0.13
12	0.04	0.04	0.08	0.09	0.04	0.04	0.04	0.20	0.10	0.06	0.13
13	0.04	0.04	0.08	0.08	0.04	0.04	0.04	0.19	0.10	0.05	0.13
14	0.03	0.04	0.07	0.07	0.04	0.04	0.04	0.18	0.09	0.05	0.12
15	0.03	0.04	0.07	0.07	0.03	0.03	0.03	0.18	0.09	0.05	0.12
16	0.03	0.03	0.06	0.06	0.03	0.03	0.03	0.17	0.09	0.04	0.12
17	0.03	0.03	0.06	0.06	0.03	0.03	0.03	0.16	0.09	0.04	0.12
18	0.03	0.03	0.06	0.06	0.03	0.03	0.03	0.16	0.09	0.04	0.12
19	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.15	0.09	0.04	0.11
20	0.02	0.03	0.05	0.05	0.03	0.03	0.03	0.14	0.09	0.03	0.11
21	0.02	0.03	0.05	0.05	0.03	0.03	0.03	0.14	0.09	0.03	0.11
22	0.02	0.03	0.05	0.05	0.02	0.03	0.02	0.14	0.09	0.03	0.11
23	0.02	0.02	0.04	0.05	0.02	0.03	0.02	0.13	0.08	0.03	0.11
24	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.13	0.08	0.03	0.11
25	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.12	0.08	0.03	0.11
26	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.12	0.08	0.03	0.11
27	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.12	0.08	0.03	0.11
28	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.11	0.08	0.03	0.11
29	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.11	0.08	0.02	0.11
30	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.11	0.09	0.02	0.11
31	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.10	0.09	0.02	0.11

Table C.1-2C. 2035 EMFAC Emission Factors for PM_{2.5}

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
32	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.10	0.09	0.02	0.11
33	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.10	0.09	0.02	0.11
34	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.10	0.09	0.02	0.12
35	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.09	0.09	0.02	0.12
36	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.09	0.09	0.02	0.12
37	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.09	0.09	0.02	0.12
38	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.09	0.09	0.02	0.12
39	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.09	0.09	0.02	0.12
40	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.09	0.02	0.13
41	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.13
42	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.13
43	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.13
44	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.14
45	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.14
46	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.14
47	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.11	0.02	0.14
48	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.11	0.02	0.15
49	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.11	0.02	0.15
50	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.11	0.02	0.15
51	0.01	0.02	0.03	0.03	0.01	0.02	0.02	0.07	0.12	0.02	0.16
52	0.01	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.12	0.02	0.16
53	0.01	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.12	0.02	0.17
54	0.01	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.12	0.02	0.17
55	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.13	0.02	0.17
56	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.13	0.02	0.18
57	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.13	0.02	0.18
58	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.14	0.02	0.19
59	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.14	0.02	0.19
60	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.14	0.02	0.20
61	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.15	0.02	0.20
62	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.15	0.02	0.21
63	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.15	0.02	0.21

Table C.1-2C. 2035 EMFAC Emission Factors for PM_{2.5}

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
64	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.16	0.02	0.22
65	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.16	0.02	0.22
66	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.17	0.02	0.23
67	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.17	0.02	0.24
68	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.18	0.02	0.24
69	0.02	0.02	0.03	0.03	0.01	0.02	0.02	0.07	0.18	0.02	0.25
70	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.18	0.02	0.25
71	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.19	0.02	0.26
72	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.19	0.02	0.27
73	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.20	0.02	0.27
74	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.20	0.02	0.28
75	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.21	0.02	0.29
76	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.21	0.02	0.30
77	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.22	0.02	0.30
78	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.22	0.02	0.31
79	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.23	0.02	0.32
80	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.24	0.02	0.33

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

⁵ Port Truck emissions are HHD emission factors adjusted by the projected fleet mix due to the Ports Clean Truck Program enacted in 2008 which bans certain model year engines from operating within the Ports. EMFAC2007 does not account for this rule.

Table C.1-2D. 2035 EMFAC Emission Factors for PM₁₀

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
0	0.00	0.00	0.00	0.00	0.15	0.34	0.19	0.34	0.12	0.00	0.11
1	0.09	0.11	0.21	0.21	0.08	0.08	0.08	0.17	0.16	0.14	0.20
2	0.09	0.11	0.21	0.21	0.08	0.08	0.08	0.17	0.16	0.14	0.20
3	0.09	0.10	0.20	0.20	0.08	0.08	0.08	0.17	0.16	0.13	0.20
4	0.08	0.10	0.19	0.19	0.08	0.08	0.08	0.17	0.16	0.12	0.20
5	0.08	0.09	0.17	0.17	0.08	0.08	0.08	0.17	0.16	0.12	0.20
6	0.07	0.08	0.16	0.16	0.08	0.08	0.08	0.17	0.15	0.11	0.19
7	0.07	0.08	0.15	0.15	0.07	0.07	0.07	0.16	0.15	0.10	0.19
8	0.07	0.07	0.14	0.14	0.07	0.07	0.07	0.16	0.15	0.10	0.19
9	0.06	0.07	0.13	0.13	0.07	0.07	0.07	0.15	0.15	0.09	0.19
10	0.06	0.07	0.12	0.12	0.06	0.06	0.06	0.14	0.15	0.08	0.18
11	0.06	0.06	0.11	0.11	0.06	0.06	0.06	0.14	0.15	0.08	0.18
12	0.05	0.06	0.11	0.11	0.06	0.06	0.06	0.13	0.14	0.07	0.18
13	0.05	0.06	0.10	0.10	0.06	0.06	0.06	0.13	0.14	0.07	0.18
14	0.05	0.05	0.09	0.09	0.05	0.06	0.05	0.12	0.14	0.07	0.18
15	0.05	0.05	0.09	0.09	0.05	0.05	0.05	0.12	0.14	0.06	0.17
16	0.04	0.05	0.08	0.08	0.05	0.05	0.05	0.12	0.14	0.06	0.17
17	0.04	0.05	0.08	0.08	0.05	0.05	0.05	0.11	0.14	0.06	0.17
18	0.04	0.05	0.08	0.08	0.05	0.05	0.05	0.11	0.14	0.06	0.17
19	0.04	0.04	0.07	0.07	0.05	0.05	0.05	0.10	0.13	0.05	0.17
20	0.04	0.04	0.07	0.07	0.05	0.05	0.05	0.10	0.13	0.05	0.16
21	0.04	0.04	0.07	0.07	0.04	0.05	0.04	0.10	0.13	0.05	0.16
22	0.04	0.04	0.06	0.06	0.04	0.05	0.04	0.10	0.13	0.05	0.16
23	0.04	0.04	0.06	0.06	0.04	0.04	0.04	0.09	0.13	0.05	0.16
24	0.04	0.04	0.06	0.06	0.04	0.04	0.04	0.09	0.13	0.05	0.16
25	0.04	0.04	0.06	0.06	0.04	0.04	0.04	0.09	0.13	0.04	0.16
26	0.03	0.04	0.06	0.06	0.04	0.04	0.04	0.09	0.13	0.04	0.16
27	0.03	0.04	0.05	0.05	0.04	0.04	0.04	0.09	0.13	0.04	0.16
28	0.03	0.04	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.16
29	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.16
30	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.16
31	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.16

Table C.1-2D. 2035 EMFAC Emission Factors for PM₁₀

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
32	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.16
33	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.17
34	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.07	0.13	0.04	0.17
35	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.07	0.13	0.04	0.17
36	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.07	0.14	0.04	0.17
37	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.07	0.14	0.04	0.17
38	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.14	0.04	0.17
39	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.14	0.03	0.18
40	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.14	0.03	0.18
41	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.14	0.03	0.18
42	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.14	0.03	0.18
43	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.15	0.03	0.19
44	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.15	0.03	0.19
45	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.06	0.15	0.03	0.19
46	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.15	0.03	0.19
47	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.15	0.03	0.20
48	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.16	0.03	0.20
49	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.16	0.03	0.20
50	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.16	0.03	0.21
51	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.16	0.03	0.21
52	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.17	0.03	0.22
53	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.17	0.03	0.22
54	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.17	0.03	0.23
55	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.18	0.03	0.23
56	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.18	0.03	0.23
57	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.18	0.03	0.24
58	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.19	0.04	0.24
59	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.19	0.04	0.25
60	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.19	0.04	0.25
61	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.20	0.04	0.26
62	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.20	0.04	0.27
63	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.20	0.04	0.27

Table C.1-2D. 2035 EMFAC Emission Factors for PM₁₀

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
64	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.21	0.04	0.28
65	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.21	0.04	0.28
66	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.22	0.04	0.29
67	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.22	0.04	0.30
68	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.23	0.04	0.30
69	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.23	0.04	0.31
70	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.23	0.04	0.32
71	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.24	0.04	0.32
72	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.24	0.04	0.33
73	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.25	0.04	0.34
74	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.26	0.04	0.35
75	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.26	0.04	0.35
76	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.27	0.04	0.36
77	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.27	0.04	0.37
78	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.28	0.04	0.38
79	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.28	0.04	0.39
80	0.03	0.03	0.05	0.05	0.03	0.04	0.03	0.06	0.29	0.04	0.40

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

⁵ Port Truck emissions are HHD emission factors adjusted by the projected fleet mix due to the Ports Clean Truck Program enacted in 2008 which bans certain model year engines from operating within the Ports. EMFAC2007 does not account for this rule.

Table C.1-2E. 2035 EMFAC Emission Factors for Diesel Particulate Matter

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD ⁴	HHD ⁴	Autos ⁵	Port Truck ⁶
0	0.00	0.00	0.00	0.00	0.80	0.80	0.19	0.34	0.12	0.00	0.11
1	0.10	0.10	0.11	0.09	0.06	0.06	0.01	0.15	0.09	0.00	0.13
2	0.10	0.10	0.11	0.09	0.06	0.06	0.01	0.15	0.09	0.00	0.13
3	0.10	0.10	0.11	0.09	0.06	0.06	0.01	0.15	0.09	0.00	0.13
4	0.10	0.10	0.11	0.09	0.06	0.06	0.01	0.15	0.09	0.00	0.13
5	0.10	0.10	0.11	0.09	0.06	0.06	0.01	0.15	0.09	0.00	0.13
6	0.09	0.09	0.10	0.09	0.06	0.05	0.01	0.14	0.09	0.00	0.13
7	0.09	0.09	0.10	0.09	0.06	0.05	0.01	0.13	0.09	0.00	0.13
8	0.09	0.09	0.09	0.08	0.05	0.05	0.01	0.13	0.09	0.00	0.12
9	0.08	0.08	0.09	0.08	0.05	0.05	0.01	0.12	0.09	0.00	0.12
10	0.08	0.08	0.09	0.07	0.05	0.04	0.01	0.11	0.08	0.00	0.12
11	0.07	0.07	0.08	0.07	0.05	0.04	0.01	0.11	0.08	0.00	0.12
12	0.07	0.07	0.08	0.07	0.04	0.04	0.01	0.11	0.08	0.00	0.12
13	0.07	0.07	0.07	0.07	0.04	0.04	0.01	0.10	0.08	0.00	0.11
14	0.07	0.07	0.07	0.06	0.04	0.04	0.01	0.10	0.08	0.00	0.11
15	0.06	0.06	0.07	0.06	0.04	0.04	0.01	0.09	0.08	0.00	0.11
16	0.06	0.06	0.07	0.06	0.04	0.03	0.01	0.09	0.07	0.00	0.11
17	0.06	0.06	0.06	0.06	0.04	0.03	0.01	0.08	0.07	0.00	0.11
18	0.06	0.06	0.06	0.05	0.03	0.03	0.01	0.08	0.07	0.00	0.10
19	0.05	0.05	0.06	0.05	0.03	0.03	0.01	0.08	0.07	0.00	0.10
20	0.05	0.05	0.06	0.05	0.03	0.03	0.01	0.07	0.07	0.00	0.10
21	0.05	0.05	0.05	0.05	0.03	0.03	0.01	0.07	0.07	0.00	0.10
22	0.05	0.05	0.05	0.05	0.03	0.03	0.01	0.07	0.07	0.00	0.10
23	0.05	0.05	0.05	0.04	0.03	0.03	0.01	0.07	0.07	0.00	0.10
24	0.04	0.04	0.05	0.04	0.03	0.03	0.01	0.07	0.07	0.00	0.10
25	0.04	0.04	0.05	0.04	0.03	0.03	0.01	0.06	0.07	0.00	0.10
26	0.04	0.04	0.05	0.04	0.03	0.02	0.01	0.06	0.07	0.00	0.10
27	0.04	0.04	0.04	0.04	0.02	0.02	0.01	0.06	0.07	0.00	0.10
28	0.04	0.04	0.04	0.04	0.02	0.02	0.01	0.06	0.07	0.00	0.10
29	0.04	0.04	0.04	0.04	0.02	0.02	0.01	0.06	0.07	0.00	0.10
30	0.04	0.04	0.04	0.04	0.02	0.02	0.01	0.05	0.07	0.00	0.10
31	0.04	0.04	0.04	0.03	0.02	0.02	0.01	0.05	0.07	0.00	0.10
32	0.03	0.03	0.04	0.03	0.02	0.02	0.00	0.05	0.07	0.00	0.10

Table C.1-2E. 2035 EMFAC Emission Factors for Diesel Particulate Matter

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD ⁴	HHD ⁴	Autos ⁵	Port Truck ⁶
33	0.03	0.03	0.04	0.03	0.02	0.02	0.00	0.05	0.07	0.00	0.10
34	0.03	0.03	0.04	0.03	0.02	0.02	0.00	0.05	0.07	0.00	0.10
35	0.03	0.03	0.04	0.03	0.02	0.02	0.00	0.05	0.07	0.00	0.10
36	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.05	0.07	0.00	0.11
37	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.05	0.07	0.00	0.11
38	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.04	0.07	0.00	0.11
39	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.04	0.08	0.00	0.11
40	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.04	0.08	0.00	0.11
41	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.04	0.08	0.00	0.12
42	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.04	0.08	0.00	0.12
43	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.04	0.08	0.00	0.12
44	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.04	0.08	0.00	0.12
45	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.04	0.09	0.00	0.13
46	0.03	0.03	0.03	0.02	0.02	0.01	0.00	0.04	0.09	0.00	0.13
47	0.03	0.03	0.03	0.02	0.02	0.01	0.00	0.04	0.09	0.00	0.13
48	0.02	0.03	0.03	0.02	0.02	0.01	0.00	0.04	0.09	0.00	0.14
49	0.02	0.03	0.03	0.02	0.02	0.01	0.00	0.04	0.10	0.00	0.14
50	0.02	0.03	0.03	0.02	0.02	0.01	0.00	0.04	0.10	0.00	0.14
51	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.04	0.10	0.00	0.15
52	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.04	0.10	0.00	0.15
53	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.04	0.11	0.00	0.16
54	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.04	0.11	0.00	0.16
55	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.03	0.11	0.00	0.17
56	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.12	0.00	0.17
57	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.12	0.00	0.18
58	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.12	0.00	0.18
59	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.13	0.00	0.19
60	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.13	0.00	0.19
61	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.13	0.00	0.20
62	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.14	0.00	0.20
63	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.14	0.00	0.21
64	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.15	0.00	0.21
65	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.15	0.00	0.22

Table C.1-2E. 2035 EMFAC Emission Factors for Diesel Particulate Matter

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD ⁴	HHD ⁴	Autos ⁵	Port Truck ⁶
66	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.15	0.00	0.23
67	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.16	0.00	0.23
68	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.16	0.00	0.24
69	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.03	0.17	0.00	0.25
70	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.03	0.17	0.00	0.25
71	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.04	0.18	0.00	0.26
72	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.04	0.18	0.00	0.27
73	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.04	0.19	0.00	0.28
74	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.04	0.19	0.00	0.28
75	0.02	0.03	0.03	0.02	0.02	0.01	0.00	0.04	0.20	0.00	0.29
76	0.02	0.03	0.03	0.02	0.02	0.01	0.00	0.04	0.20	0.00	0.30
77	0.02	0.03	0.03	0.02	0.02	0.01	0.00	0.04	0.21	0.00	0.31
78	0.03	0.03	0.03	0.02	0.02	0.01	0.00	0.04	0.22	0.00	0.32
79	0.03	0.03	0.03	0.02	0.02	0.01	0.00	0.04	0.22	0.00	0.32
80	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.04	0.23	0.00	0.33

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ HHD and MHD emission factors area adjusted to account for the recently promulgated Statewide Public Fleet and Bus rule which mandates that fleets meet certain NOX and DPM emission factor targets on a yearly schedule. EMFAC2007 does not account for this recent rule, thus emission factors are adjusted to reflect the projected 2035 NO_x and DPM emission factor targets.

⁵ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

⁶ Port Truck emissions are HHD emission factors adjusted by the projected fleet mix due to the Ports Clean Truck Program enacted in 2008 which bans certain model year engines from operating within the Ports. EMFAC2007 does not account for this rule.

Table C.1-2F. 2035 EMFAC Emission Factors for Exhaust Total Organic Gases: Vehicle Technology Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
0	0.00	0.00	0.00	0.00	22.10	22.20	16.95	3.91	0.00	0.00	0.00
1	0.08	0.09	0.17	0.21	0.09	0.07	0.07	0.02	0.00	0.12	0.00
2	0.08	0.09	0.17	0.21	0.09	0.07	0.07	0.02	0.00	0.12	0.00
3	0.08	0.09	0.16	0.20	0.09	0.07	0.07	0.02	0.00	0.12	0.00
4	0.07	0.08	0.15	0.18	0.09	0.07	0.07	0.02	0.00	0.10	0.00
5	0.06	0.07	0.13	0.16	0.09	0.07	0.07	0.02	0.00	0.10	0.00
6	0.06	0.07	0.12	0.15	0.08	0.06	0.06	0.02	0.00	0.09	0.00
7	0.05	0.06	0.12	0.14	0.08	0.06	0.06	0.02	0.00	0.08	0.00
8	0.05	0.06	0.11	0.13	0.07	0.05	0.05	0.02	0.00	0.08	0.00
9	0.05	0.05	0.10	0.12	0.07	0.05	0.05	0.02	0.00	0.07	0.00
10	0.04	0.05	0.09	0.11	0.06	0.04	0.04	0.01	0.00	0.06	0.00
11	0.04	0.05	0.08	0.10	0.06	0.04	0.04	0.01	0.00	0.06	0.00
12	0.04	0.04	0.08	0.09	0.05	0.04	0.04	0.01	0.00	0.05	0.00
13	0.03	0.04	0.07	0.09	0.05	0.03	0.03	0.01	0.00	0.05	0.00
14	0.03	0.04	0.07	0.08	0.04	0.03	0.03	0.01	0.00	0.05	0.00
15	0.03	0.03	0.06	0.07	0.04	0.03	0.03	0.01	0.00	0.04	0.00
16	0.03	0.03	0.06	0.07	0.04	0.03	0.03	0.01	0.00	0.04	0.00
17	0.02	0.03	0.05	0.07	0.04	0.03	0.03	0.01	0.00	0.04	0.00
18	0.02	0.03	0.05	0.06	0.03	0.02	0.02	0.01	0.00	0.04	0.00
19	0.02	0.03	0.05	0.06	0.03	0.02	0.02	0.01	0.00	0.03	0.00
20	0.02	0.02	0.04	0.05	0.03	0.02	0.02	0.01	0.00	0.03	0.00
21	0.02	0.02	0.04	0.05	0.03	0.02	0.02	0.01	0.00	0.03	0.00
22	0.02	0.02	0.04	0.05	0.03	0.02	0.02	0.01	0.00	0.03	0.00
23	0.02	0.02	0.04	0.05	0.02	0.02	0.02	0.01	0.00	0.03	0.00
24	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.01	0.00	0.02	0.00
25	0.02	0.02	0.03	0.04	0.02	0.02	0.02	0.01	0.00	0.02	0.00
26	0.01	0.02	0.03	0.04	0.02	0.02	0.01	0.01	0.00	0.02	0.00
27	0.01	0.02	0.03	0.04	0.02	0.01	0.01	0.00	0.00	0.02	0.00
28	0.01	0.02	0.03	0.04	0.02	0.01	0.01	0.00	0.00	0.02	0.00
29	0.01	0.02	0.03	0.03	0.02	0.01	0.01	0.00	0.00	0.02	0.00
30	0.01	0.02	0.03	0.03	0.02	0.01	0.01	0.00	0.00	0.02	0.00
31	0.01	0.01	0.03	0.03	0.02	0.01	0.01	0.00	0.00	0.02	0.00
32	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00

Table C.1-2F. 2035 EMFAC Emission Factors for Exhaust Total Organic Gases: Vehicle Technology Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
33	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
34	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
35	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
36	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
37	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.01	0.00
38	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.01	0.00
39	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
40	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
41	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
42	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
43	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
44	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
45	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
46	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
47	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
48	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
49	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
50	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
51	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
52	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
53	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
54	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
55	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
56	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
57	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00
58	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.01	0.00
59	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.01	0.00
60	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
61	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
62	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
63	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
64	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
65	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00

Table C.1-2F. 2035 EMFAC Emission Factors for Exhaust Total Organic Gases: Vehicle Technology Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
66	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
67	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
68	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
69	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
70	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
71	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
72	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
73	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
74	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
75	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
76	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
77	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
78	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
79	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00
80	0.01	0.01	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.00

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

⁵ Port Truck emissions are HHD emission factors adjusted by the projected fleet mix due to the Ports Clean Truck Program enacted in 2008 which bans certain model year engines from operating within the Ports. EMFAC2007 does not account for this rule.

Table C.1-2G. 2035 EMFAC Emission Factors for Evaporative Total Organic Gases: Vehicle Technology Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
0	0.84	1.20	1.62	1.68	1.74	1.50	1.30	0.29	0.00	1.21	0.00
1	0.84	1.20	1.62	1.68	1.74	1.50	1.30	0.29	0.00	1.21	0.00
2	0.42	0.60	0.81	0.84	0.87	0.75	0.65	0.14	0.00	0.60	0.00
3	0.28	0.40	0.54	0.56	0.58	0.50	0.43	0.10	0.00	0.40	0.00
4	0.21	0.30	0.41	0.42	0.44	0.38	0.33	0.07	0.00	0.30	0.00
5	0.17	0.24	0.32	0.34	0.35	0.30	0.26	0.06	0.00	0.24	0.00
6	0.15	0.22	0.29	0.30	0.31	0.27	0.23	0.05	0.00	0.22	0.00
7	0.13	0.19	0.26	0.27	0.28	0.24	0.21	0.05	0.00	0.19	0.00
8	0.12	0.17	0.23	0.24	0.24	0.21	0.18	0.04	0.00	0.17	0.00
9	0.10	0.14	0.19	0.20	0.21	0.18	0.16	0.03	0.00	0.15	0.00
10	0.08	0.12	0.16	0.17	0.17	0.15	0.13	0.03	0.00	0.12	0.00
11	0.08	0.11	0.15	0.16	0.16	0.14	0.12	0.03	0.00	0.11	0.00
12	0.07	0.10	0.14	0.15	0.15	0.13	0.11	0.02	0.00	0.10	0.00
13	0.07	0.10	0.13	0.13	0.14	0.12	0.10	0.02	0.00	0.10	0.00
14	0.06	0.09	0.12	0.12	0.13	0.11	0.10	0.02	0.00	0.09	0.00
15	0.06	0.08	0.11	0.11	0.12	0.10	0.09	0.02	0.00	0.08	0.00
16	0.05	0.08	0.10	0.11	0.11	0.10	0.08	0.02	0.00	0.08	0.00
17	0.05	0.07	0.10	0.10	0.10	0.09	0.08	0.02	0.00	0.07	0.00
18	0.05	0.07	0.09	0.10	0.10	0.09	0.07	0.02	0.00	0.07	0.00
19	0.04	0.06	0.09	0.09	0.09	0.08	0.07	0.02	0.00	0.06	0.00
20	0.04	0.06	0.08	0.08	0.09	0.08	0.07	0.01	0.00	0.06	0.00
21	0.04	0.06	0.08	0.08	0.08	0.07	0.06	0.01	0.00	0.06	0.00
22	0.04	0.06	0.07	0.08	0.08	0.07	0.06	0.01	0.00	0.06	0.00
23	0.04	0.05	0.07	0.07	0.08	0.07	0.06	0.01	0.00	0.05	0.00
24	0.04	0.05	0.07	0.07	0.07	0.06	0.05	0.01	0.00	0.05	0.00
25	0.03	0.05	0.06	0.07	0.07	0.06	0.05	0.01	0.00	0.05	0.00
26	0.03	0.05	0.06	0.06	0.07	0.06	0.05	0.01	0.00	0.05	0.00
27	0.03	0.04	0.06	0.06	0.06	0.06	0.05	0.01	0.00	0.05	0.00
28	0.03	0.04	0.06	0.06	0.06	0.05	0.05	0.01	0.00	0.04	0.00
29	0.03	0.04	0.06	0.06	0.06	0.05	0.05	0.01	0.00	0.04	0.00
30	0.03	0.04	0.05	0.06	0.06	0.05	0.04	0.01	0.00	0.04	0.00
31	0.03	0.04	0.05	0.05	0.06	0.05	0.04	0.01	0.00	0.04	0.00
32	0.03	0.04	0.05	0.05	0.05	0.05	0.04	0.01	0.00	0.04	0.00

Table C.1-2G. 2035 EMFAC Emission Factors for Evaporative Total Organic Gases: Vehicle Technology Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
33	0.03	0.04	0.05	0.05	0.05	0.05	0.04	0.01	0.00	0.04	0.00
34	0.02	0.04	0.05	0.05	0.05	0.04	0.04	0.01	0.00	0.04	0.00
35	0.02	0.03	0.05	0.05	0.05	0.04	0.04	0.01	0.00	0.03	0.00
36	0.02	0.03	0.05	0.05	0.05	0.04	0.04	0.01	0.00	0.03	0.00
37	0.02	0.03	0.04	0.05	0.05	0.04	0.04	0.01	0.00	0.03	0.00
38	0.02	0.03	0.04	0.04	0.05	0.04	0.03	0.01	0.00	0.03	0.00
39	0.02	0.03	0.04	0.04	0.04	0.04	0.03	0.01	0.00	0.03	0.00
40	0.02	0.03	0.04	0.04	0.04	0.04	0.03	0.01	0.00	0.03	0.00
41	0.02	0.03	0.04	0.04	0.04	0.04	0.03	0.01	0.00	0.03	0.00
42	0.02	0.03	0.04	0.04	0.04	0.04	0.03	0.01	0.00	0.03	0.00
43	0.02	0.03	0.04	0.04	0.04	0.04	0.03	0.01	0.00	0.03	0.00
44	0.02	0.03	0.04	0.04	0.04	0.03	0.03	0.01	0.00	0.03	0.00
45	0.02	0.03	0.04	0.04	0.04	0.03	0.03	0.01	0.00	0.03	0.00
46	0.02	0.03	0.04	0.04	0.04	0.03	0.03	0.01	0.00	0.03	0.00
47	0.02	0.03	0.03	0.04	0.04	0.03	0.03	0.01	0.00	0.03	0.00
48	0.02	0.03	0.03	0.04	0.04	0.03	0.03	0.01	0.00	0.03	0.00
49	0.02	0.02	0.03	0.03	0.04	0.03	0.03	0.01	0.00	0.02	0.00
50	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.01	0.00	0.02	0.00
51	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.01	0.00	0.02	0.00
52	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.01	0.00	0.02	0.00
53	0.02	0.02	0.03	0.03	0.03	0.03	0.02	0.01	0.00	0.02	0.00
54	0.02	0.02	0.03	0.03	0.03	0.03	0.02	0.01	0.00	0.02	0.00
55	0.02	0.02	0.03	0.03	0.03	0.03	0.02	0.01	0.00	0.02	0.00
56	0.02	0.02	0.03	0.03	0.03	0.03	0.02	0.01	0.00	0.02	0.00
57	0.01	0.02	0.03	0.03	0.03	0.03	0.02	0.01	0.00	0.02	0.00
58	0.01	0.02	0.03	0.03	0.03	0.03	0.02	0.00	0.00	0.02	0.00
59	0.01	0.02	0.03	0.03	0.03	0.03	0.02	0.00	0.00	0.02	0.00
60	0.01	0.02	0.03	0.03	0.03	0.03	0.02	0.00	0.00	0.02	0.00
61	0.01	0.02	0.03	0.03	0.03	0.02	0.02	0.00	0.00	0.02	0.00
62	0.01	0.02	0.03	0.03	0.03	0.02	0.02	0.00	0.00	0.02	0.00
63	0.01	0.02	0.03	0.03	0.03	0.02	0.02	0.00	0.00	0.02	0.00
64	0.01	0.02	0.03	0.03	0.03	0.02	0.02	0.00	0.00	0.02	0.00
65	0.01	0.02	0.02	0.03	0.03	0.02	0.02	0.00	0.00	0.02	0.00

Table C.1-2G. 2035 EMFAC Emission Factors for Evaporative Total Organic Gases: Vehicle Technology Catalytic

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
66	0.01	0.02	0.02	0.03	0.03	0.02	0.02	0.00	0.00	0.02	0.00
67	0.01	0.02	0.02	0.03	0.03	0.02	0.02	0.00	0.00	0.02	0.00
68	0.01	0.02	0.02	0.02	0.03	0.02	0.02	0.00	0.00	0.02	0.00
69	0.01	0.02	0.02	0.02	0.03	0.02	0.02	0.00	0.00	0.02	0.00
70	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00
71	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00
72	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00
73	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00
74	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00
75	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00
76	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00
77	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00
78	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00
79	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00
80	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.00

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

⁵ Port Truck emissions are HHD emission factors adjusted by the projected fleet mix due to the Ports Clean Truck Program enacted in 2008 which bans certain model year engines from operating within the Ports. EMFAC2007 does not account for this rule.

Table C.1-2H. 2035 EMFAC Emission Factors for Combined Evaporative and Exhaust Reactive Organic Gases

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
0	0.84	1.20	1.62	1.68	19.00	14.32	17.90	6.64	7.60	1.19	7.63
1	0.89	1.26	1.73	1.82	1.53	0.95	1.39	0.55	2.44	1.26	3.26
2	0.47	0.66	0.92	0.98	0.81	0.53	0.74	0.40	2.44	0.67	3.26
3	0.33	0.46	0.64	0.69	0.57	0.39	0.53	0.35	2.44	0.47	3.26
4	0.25	0.35	0.50	0.54	0.45	0.32	0.42	0.33	2.44	0.36	3.26
5	0.21	0.29	0.41	0.44	0.38	0.28	0.35	0.31	2.44	0.30	3.26
6	0.19	0.25	0.36	0.39	0.33	0.24	0.31	0.27	1.98	0.26	2.97
7	0.17	0.22	0.31	0.34	0.29	0.21	0.27	0.22	1.53	0.23	2.67
8	0.15	0.19	0.27	0.29	0.25	0.17	0.23	0.18	1.07	0.20	2.37
9	0.13	0.16	0.22	0.23	0.20	0.14	0.19	0.13	0.61	0.17	2.08
10	0.11	0.13	0.17	0.18	0.16	0.11	0.15	0.09	0.16	0.14	1.78
11	0.10	0.12	0.17	0.18	0.15	0.11	0.14	0.11	0.25	0.13	1.59
12	0.09	0.12	0.16	0.17	0.15	0.11	0.14	0.12	0.35	0.12	1.41
13	0.09	0.11	0.15	0.17	0.15	0.11	0.14	0.14	0.45	0.12	1.22
14	0.08	0.10	0.15	0.16	0.15	0.12	0.14	0.16	0.55	0.11	1.04
15	0.07	0.10	0.14	0.16	0.14	0.12	0.14	0.18	0.64	0.10	0.85
16	0.07	0.09	0.13	0.15	0.14	0.11	0.13	0.17	0.59	0.10	0.78
17	0.06	0.09	0.13	0.14	0.13	0.11	0.12	0.16	0.54	0.09	0.71
18	0.06	0.08	0.12	0.13	0.12	0.10	0.12	0.16	0.49	0.09	0.64
19	0.06	0.08	0.11	0.12	0.11	0.10	0.11	0.15	0.43	0.08	0.57
20	0.05	0.07	0.11	0.12	0.11	0.09	0.10	0.14	0.38	0.08	0.50
21	0.05	0.07	0.10	0.11	0.10	0.09	0.10	0.14	0.37	0.07	0.49
22	0.05	0.07	0.10	0.11	0.10	0.09	0.10	0.13	0.36	0.07	0.48
23	0.05	0.06	0.09	0.10	0.09	0.08	0.09	0.13	0.35	0.07	0.46
24	0.04	0.06	0.09	0.10	0.09	0.08	0.09	0.12	0.34	0.06	0.45
25	0.04	0.06	0.08	0.09	0.09	0.08	0.08	0.12	0.33	0.06	0.44
26	0.04	0.06	0.08	0.09	0.08	0.07	0.08	0.12	0.32	0.06	0.43
27	0.04	0.05	0.08	0.08	0.08	0.07	0.08	0.11	0.31	0.06	0.41
28	0.04	0.05	0.07	0.08	0.08	0.07	0.07	0.11	0.30	0.05	0.40
29	0.04	0.05	0.07	0.08	0.07	0.07	0.07	0.11	0.29	0.05	0.39
30	0.04	0.05	0.07	0.07	0.07	0.06	0.07	0.10	0.29	0.05	0.38
31	0.03	0.05	0.07	0.07	0.07	0.06	0.07	0.10	0.28	0.05	0.37
32	0.03	0.05	0.06	0.07	0.07	0.06	0.07	0.10	0.27	0.05	0.36

Table C.1-2H. 2035 EMFAC Emission Factors for Combined Evaporative and Exhaust Reactive Organic Gases

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
33	0.03	0.04	0.06	0.07	0.07	0.06	0.06	0.09	0.26	0.05	0.35
34	0.03	0.04	0.06	0.07	0.06	0.06	0.06	0.09	0.26	0.04	0.34
35	0.03	0.04	0.06	0.06	0.06	0.06	0.06	0.09	0.25	0.04	0.33
36	0.03	0.04	0.06	0.06	0.06	0.05	0.06	0.09	0.24	0.04	0.32
37	0.03	0.04	0.06	0.06	0.06	0.05	0.06	0.08	0.24	0.04	0.32
38	0.03	0.04	0.05	0.06	0.06	0.05	0.06	0.08	0.23	0.04	0.31
39	0.03	0.04	0.05	0.06	0.05	0.05	0.05	0.08	0.23	0.04	0.30
40	0.03	0.04	0.05	0.06	0.05	0.05	0.05	0.08	0.22	0.04	0.29
41	0.03	0.04	0.05	0.05	0.05	0.05	0.05	0.08	0.21	0.04	0.29
42	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.08	0.21	0.04	0.28
43	0.02	0.03	0.05	0.05	0.05	0.05	0.05	0.08	0.20	0.04	0.27
44	0.02	0.03	0.05	0.05	0.05	0.04	0.05	0.07	0.20	0.03	0.27
45	0.02	0.03	0.05	0.05	0.05	0.04	0.05	0.07	0.19	0.03	0.26
46	0.02	0.03	0.05	0.05	0.05	0.04	0.05	0.07	0.19	0.03	0.25
47	0.02	0.03	0.04	0.05	0.05	0.04	0.05	0.07	0.19	0.03	0.25
48	0.02	0.03	0.04	0.05	0.05	0.04	0.04	0.07	0.18	0.03	0.24
49	0.02	0.03	0.04	0.05	0.04	0.04	0.04	0.07	0.18	0.03	0.24
50	0.02	0.03	0.04	0.05	0.04	0.04	0.04	0.07	0.18	0.03	0.23
51	0.02	0.03	0.04	0.05	0.04	0.04	0.04	0.07	0.17	0.03	0.23
52	0.02	0.03	0.04	0.05	0.04	0.04	0.04	0.07	0.17	0.03	0.23
53	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.07	0.17	0.03	0.22
54	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.17	0.03	0.22
55	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.16	0.03	0.22
56	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.16	0.03	0.22
57	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.16	0.03	0.21
58	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.16	0.03	0.21
59	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.16	0.03	0.21
60	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.16	0.03	0.21
61	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.16	0.03	0.21
62	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.16	0.03	0.21
63	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.16	0.03	0.21
64	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.16	0.03	0.21
65	0.02	0.03	0.04	0.04	0.04	0.03	0.04	0.06	0.16	0.03	0.21

Table C.1-2H. 2035 EMFAC Emission Factors for Combined Evaporative and Exhaust Reactive Organic Gases

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
66	0.02	0.03	0.04	0.04	0.04	0.03	0.04	0.06	0.16	0.03	0.21
67	0.02	0.02	0.04	0.04	0.04	0.03	0.04	0.06	0.16	0.03	0.21
68	0.02	0.02	0.04	0.04	0.04	0.03	0.04	0.06	0.16	0.03	0.21
69	0.02	0.02	0.04	0.04	0.03	0.03	0.03	0.06	0.16	0.03	0.21
70	0.02	0.02	0.04	0.04	0.03	0.04	0.03	0.06	0.16	0.03	0.21
71	0.02	0.02	0.04	0.04	0.03	0.04	0.03	0.06	0.16	0.03	0.21
72	0.02	0.02	0.04	0.04	0.03	0.04	0.03	0.06	0.17	0.03	0.22
73	0.02	0.02	0.04	0.04	0.03	0.04	0.03	0.06	0.17	0.03	0.22
74	0.02	0.02	0.03	0.04	0.03	0.04	0.03	0.07	0.17	0.03	0.22
75	0.02	0.02	0.03	0.04	0.03	0.04	0.03	0.07	0.17	0.03	0.23
76	0.02	0.02	0.03	0.04	0.03	0.04	0.03	0.07	0.18	0.02	0.23
77	0.02	0.02	0.03	0.04	0.03	0.04	0.03	0.07	0.18	0.02	0.23
78	0.02	0.02	0.03	0.04	0.03	0.04	0.03	0.07	0.18	0.02	0.24
79	0.02	0.02	0.03	0.04	0.03	0.04	0.04	0.07	0.19	0.02	0.24
80	0.02	0.02	0.03	0.04	0.04	0.04	0.04	0.07	0.19	0.02	0.25

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

² EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

³ LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

⁴ Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

⁵ Port Truck emissions are HHD emission factors adjusted by the projected fleet mix due to the Ports Clean Truck Program enacted in 2008 which bans certain model year engines from operating within the Ports. EMFAC2007 does not account for this rule.

Table C.2-1A. EMFAC2007 Burden Run for the 2035 Calendar Year for MHD and HHD Vehicle Classes.

Title : SCAB Avg Annual CYr 2035 (HHD and MHD)
 # Version : Emfac2007 V2.3 Nov 1 2006
 # Run Date : 6/9/2009 16:46
 # Scen Year: 2035 -- All model years in the range 1995 to 2035 selected
 # Season : Annual
 # Area : South Coast
 # I/M Stat : Enhanced Interim (2005)
 # Emissions: Tons Per Period

RecType	ScenNum	Calendar Year	Area	Vehicle Class	Model Year	Vehicle Technology	Period	Pop	Vehicle Miles Traveled	Trips
Vh	1	2035	South Coast Air Basin	MHD	AlIMYr	GAS	Day	28,396	1.38E+06	1,296,794
Vh	1	2035	South Coast Air Basin	MHD	AlIMYr	DSL	Day	108,326	6.37E+06	3,037,450
Vh	1	2035	South Coast Air Basin	MHD	AlIMYr	TOT	Day	136,722	7.76E+06	4,334,244
Vh	1	2035	South Coast Air Basin	HHD	AlIMYr	GAS	Day	1,443	1.55E+05	65,896
Vh	1	2035	South Coast Air Basin	HHD	AlIMYr	DSL	Day	72,317	1.53E+07	365,959
Vh	1	2035	South Coast Air Basin	HHD	AlIMYr	TOT	Day	73,760	1.55E+07	431,855

Table C.2-1B. NO_x and PM₁₀ Emission Factors for HHD and MHD in 2035

Pollutant	Vehicle Class	Mass Emissions (ton/day) ¹	Mass Emission (g/day)	Vehicle Miles Traveled (mi/day)	Emission Factor (g/mi) ²
NO _x	HHD	58.09	52,698,086	1.5E+07	3.44
	MHD	10.62	9,634,252	6.4E+06	1.51
PM ₁₀	HHD	1.96	1,778,073	1.5E+07	0.12
	MHD	0.8	725,744	6.4E+06	0.11

Notes:

¹ Reflects the summation of running and idle mass emissions

² Emission factor is based on the burden performed for the 2035 calendar year and is a default emission factor based on vehicular activity and mass emissions within the South Coast Air Basin

**Table C.2-1C. CARBs Statewide Public Fleet and Bus
Rule Target Emission Factors per
Compliance Year ^{1,2}**

Compliance Deadline (as of Jan 1)	Fleet NO _x Targets (g/mi)		Fleet PM ₁₀ Targets (g/mi)	
	MHD	HHD	MHD	HHD
2013	8.5	14.4	0.38	0.71
2014	5.8	9.8	0.29	0.53
2015	5.8	9.8	0.17	0.32
2016	4.6	7.8	0.06	0.11
2017	4	6	0.06	0.11
2018	4	6	0.06	0.11
2019	4	6	0.06	0.11
2020	3.2	4.4	0.06	0.11
2021	3.2	4.4	0.06	0.11
2022	1.6	3	0.06	0.11
2023	0.8	1.6	0.06	0.11
2035	0.8	1.6	0.06	0.11

Notes:

¹ Fleet NO_x and PM₁₀ targets for medium- and heavy-heavy duty vehicles per compliance year. Source: CARB, 2010. *Truck and Bus Regulation*. <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm> [accessed March 2010].

² The last compliance year is 2023, it is assumed that emission factor levels reached that year will be the same in 2035.

Table C.2-1D. Control Factors Used to Adjust EMFAC2007 2035 Emission Factors

Vehicle Class	2035 Control Factors					
	NO _x			PM ₁₀		
	EMFAC Default (g/mi)	Target (g/mi)	NO _x Control Factor	EMFAC Default (g/mi)	Target (g/mi)	PM ₁₀ Control Factor
HHD	3.44	1.6	0.47	0.11	0.11	0.97
MHD	1.51	0.8	0.53	0.12	0.06	0.52

Table C.2-2A. 2035 Fleet Age Distribution

Model Year	Fraction of Model Year in 2035 ¹	Model Year	Fraction of Model Year in 2035 ¹
2035	0.00462	2014	0.03734
2034	0.00479	2013	0.03202
2033	0.00570	2012	0.02801
2032	0.00615	2011	0.02262
2031	0.00886	2010	0.01909
2030	0.01622	2009	0.00000
2029	0.02584	2008	0.00000
2028	0.03591	2007	0.00000
2027	0.04590	2006	0.00000
2026	0.05637	2005	0.00000
2025	0.06577	2004	0.00000
2024	0.07173	2003	0.00000
2023	0.07324	2002	0.00000
2022	0.06870	2001	0.00000
2021	0.06440	2000	0.00000
2020	0.06046	1999	0.00000
2019	0.05756	1998	0.00000
2018	0.05263	1997	0.00000
2017	0.04815	1996	0.00000
2016	0.04411	1995	0.00000
2015	0.04101		

Notes:

¹ Distribution is based on a survey conducted by Starcrest in 2007 in which engine model years were recorded. Based on accrual rates the 2035 heavy-heavy duty fleet age distribution was projected.

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
1995	0	1.85	49.53	110.27	6.30E-02	1.85	1.70	12.41	14.13	0	0	0	0	0	0	0	0
1995	1	6.53	43.05	70.19	3.70E-02	6.59	6.03	29.47	33.55	0	0	0	0	0	0	0	0
1995	2	6.53	43.05	70.19	3.70E-02	6.59	6.03	29.47	33.55	0	0	0	0	0	0	0	0
1995	3	6.53	43.05	70.19	3.70E-02	6.59	6.03	29.47	33.55	0	0	0	0	0	0	0	0
1995	4	6.53	43.05	70.19	3.70E-02	6.59	6.03	29.47	33.55	0	0	0	0	0	0	0	0
1995	5	6.53	43.05	70.19	3.70E-02	6.59	6.03	29.47	33.55	0	0	0	0	0	0	0	0
1995	10	4.19	32.28	45.79	3.00E-02	4.25	3.87	16.18	18.42	0	0	0	0	0	0	0	0
1995	15	2.50	23.60	31.68	2.50E-02	2.56	2.32	7.54	8.58	0	0	0	0	0	0	0	0
1995	20	1.55	17.44	27.70	2.10E-02	1.62	1.45	3.88	4.42	0	0	0	0	0	0	0	0
1995	25	1.21	14.36	27.45	2.00E-02	1.27	1.13	3.00	3.42	0	0	0	0	0	0	0	0
1995	30	0.95	11.75	27.32	1.80E-02	1.01	0.89	2.32	2.64	0	0	0	0	0	0	0	0
1995	35	0.76	9.61	27.33	1.70E-02	0.83	0.72	1.84	2.09	0	0	0	0	0	0	0	0
1995	40	0.67	7.95	27.46	1.70E-02	0.73	0.63	1.56	1.77	0	0	0	0	0	0	0	0
1995	45	0.65	6.76	27.73	1.60E-02	0.71	0.62	1.47	1.68	0	0	0	0	0	0	0	0
1995	50	0.71	6.04	28.12	1.60E-02	0.78	0.68	1.59	1.81	0	0	0	0	0	0	0	0
1995	55	0.86	5.80	28.64	1.60E-02	0.93	0.81	1.91	2.17	0	0	0	0	0	0	0	0
1995	60	1.09	6.03	29.30	1.60E-02	1.15	1.02	2.42	2.76	0	0	0	0	0	0	0	0
1995	65	1.40	6.73	30.08	1.60E-02	1.47	1.31	3.14	3.57	0	0	0	0	0	0	0	0
1995	70	1.79	7.90	30.99	1.70E-02	1.86	1.67	4.05	4.61	0	0	0	0	0	0	0	0
1995	75	2.27	9.55	32.03	1.80E-02	2.33	2.11	5.17	5.88	0	0	0	0	0	0	0	0
1995	80	2.83	11.67	33.19	1.90E-02	2.89	2.62	6.48	7.38	0	0	0	0	0	0	0	0
1996	0	1.85	49.53	110.27	6.30E-02	1.85	1.70	12.41	14.13	0	0	0	0	0	0	0	0
1996	1	6.52	42.94	70.14	3.70E-02	6.58	6.02	29.40	33.47	0	0	0	0	0	0	0	0
1996	2	6.52	42.94	70.14	3.70E-02	6.58	6.02	29.40	33.47	0	0	0	0	0	0	0	0
1996	3	6.52	42.94	70.14	3.70E-02	6.58	6.02	29.40	33.47	0	0	0	0	0	0	0	0
1996	4	6.52	42.94	70.14	3.70E-02	6.58	6.02	29.40	33.47	0	0	0	0	0	0	0	0
1996	5	6.52	42.94	70.14	3.70E-02	6.58	6.02	29.40	33.47	0	0	0	0	0	0	0	0
1996	10	4.18	32.20	45.76	3.00E-02	4.24	3.86	16.14	18.37	0	0	0	0	0	0	0	0
1996	15	2.49	23.54	31.66	2.50E-02	2.56	2.31	7.52	8.56	0	0	0	0	0	0	0	0
1996	20	1.55	17.40	27.68	2.10E-02	1.61	1.45	3.87	4.41	0	0	0	0	0	0	0	0
1996	25	1.21	14.32	27.42	2.00E-02	1.27	1.13	2.99	3.41	0	0	0	0	0	0	0	0
1996	30	0.94	11.72	27.30	1.80E-02	1.01	0.89	2.31	2.63	0	0	0	0	0	0	0	0
1996	35	0.76	9.59	27.31	1.70E-02	0.83	0.72	1.83	2.09	0	0	0	0	0	0	0	0
1996	40	0.66	7.93	27.44	1.70E-02	0.73	0.63	1.55	1.77	0	0	0	0	0	0	0	0
1996	45	0.65	6.74	27.71	1.60E-02	0.71	0.62	1.47	1.67	0	0	0	0	0	0	0	0
1996	50	0.71	6.03	28.10	1.60E-02	0.78	0.68	1.59	1.81	0	0	0	0	0	0	0	0
1996	55	0.86	5.78	28.62	1.60E-02	0.92	0.81	1.90	2.17	0	0	0	0	0	0	0	0
1996	60	1.09	6.01	29.27	1.60E-02	1.15	1.02	2.42	2.75	0	0	0	0	0	0	0	0
1996	65	1.40	6.71	30.05	1.60E-02	1.46	1.31	3.13	3.56	0	0	0	0	0	0	0	0
1996	70	1.79	7.88	30.96	1.70E-02	1.85	1.67	4.04	4.60	0	0	0	0	0	0	0	0
1996	75	2.26	9.52	32.00	1.80E-02	2.33	2.10	5.16	5.87	0	0	0	0	0	0	0	0
1996	80	2.82	11.64	33.17	1.90E-02	2.88	2.62	6.47	7.36	0	0	0	0	0	0	0	0

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
1997	0	1.85	49.53	110.27	6.30E-02	1.85	1.70	12.41	14.13	0	0	0	0	0	0	0	0
1997	1	6.50	42.84	70.09	3.70E-02	6.57	6.00	29.32	33.38	0	0	0	0	0	0	0	0
1997	2	6.50	42.84	70.09	3.70E-02	6.57	6.00	29.32	33.38	0	0	0	0	0	0	0	0
1997	3	6.50	42.84	70.09	3.70E-02	6.57	6.00	29.32	33.38	0	0	0	0	0	0	0	0
1997	4	6.50	42.84	70.09	3.70E-02	6.57	6.00	29.32	33.38	0	0	0	0	0	0	0	0
1997	5	6.50	42.84	70.09	3.70E-02	6.57	6.00	29.32	33.38	0	0	0	0	0	0	0	0
1997	10	4.17	32.12	45.72	3.00E-02	4.23	3.86	16.10	18.33	0	0	0	0	0	0	0	0
1997	15	2.49	23.48	31.64	2.50E-02	2.55	2.31	7.50	8.54	0	0	0	0	0	0	0	0
1997	20	1.55	17.36	27.66	2.10E-02	1.61	1.44	3.86	4.40	0	0	0	0	0	0	0	0
1997	25	1.20	14.29	27.40	2.00E-02	1.27	1.13	2.99	3.40	0	0	0	0	0	0	0	0
1997	30	0.94	11.69	27.28	1.80E-02	1.01	0.89	2.31	2.63	0	0	0	0	0	0	0	0
1997	35	0.76	9.57	27.29	1.70E-02	0.83	0.72	1.83	2.08	0	0	0	0	0	0	0	0
1997	40	0.66	7.91	27.42	1.70E-02	0.73	0.63	1.55	1.76	0	0	0	0	0	0	0	0
1997	45	0.65	6.73	27.69	1.60E-02	0.71	0.62	1.47	1.67	0	0	0	0	0	0	0	0
1997	50	0.71	6.01	28.08	1.60E-02	0.78	0.68	1.58	1.80	0	0	0	0	0	0	0	0
1997	55	0.86	5.77	28.60	1.60E-02	0.92	0.81	1.90	2.16	0	0	0	0	0	0	0	0
1997	60	1.09	6.00	29.25	1.60E-02	1.15	1.02	2.41	2.74	0	0	0	0	0	0	0	0
1997	65	1.40	6.69	30.03	1.60E-02	1.46	1.30	3.12	3.56	0	0	0	0	0	0	0	0
1997	70	1.79	7.86	30.94	1.70E-02	1.85	1.66	4.03	4.59	0	0	0	0	0	0	0	0
1997	75	2.26	9.50	31.98	1.80E-02	2.32	2.10	5.14	5.85	0	0	0	0	0	0	0	0
1997	80	2.81	11.61	33.14	1.90E-02	2.88	2.61	6.45	7.34	0	0	0	0	0	0	0	0
1998	0	1.28	44.51	119.08	6.30E-02	1.28	1.18	9.31	10.60	0	0	0	0	0	0	0	0
1998	1	6.18	42.53	71.93	3.70E-02	6.24	5.70	29.10	33.13	0	0	0	0	0	0	0	0
1998	2	6.18	42.53	71.93	3.70E-02	6.24	5.70	29.10	33.13	0	0	0	0	0	0	0	0
1998	3	6.18	42.53	71.93	3.70E-02	6.24	5.70	29.10	33.13	0	0	0	0	0	0	0	0
1998	4	6.18	42.53	71.93	3.70E-02	6.24	5.70	29.10	33.13	0	0	0	0	0	0	0	0
1998	5	6.18	42.53	71.93	3.70E-02	6.24	5.70	29.10	33.13	0	0	0	0	0	0	0	0
1998	10	3.96	31.89	46.92	3.00E-02	4.03	3.67	15.98	18.19	0	0	0	0	0	0	0	0
1998	15	2.36	23.32	32.47	2.50E-02	2.43	2.19	7.45	8.48	0	0	0	0	0	0	0	0
1998	20	1.47	17.23	28.38	2.10E-02	1.53	1.37	3.83	4.36	0	0	0	0	0	0	0	0
1998	25	1.14	14.19	28.12	2.00E-02	1.21	1.07	2.96	3.37	0	0	0	0	0	0	0	0
1998	30	0.89	11.61	28.00	1.80E-02	0.96	0.84	2.29	2.61	0	0	0	0	0	0	0	0
1998	35	0.72	9.50	28.01	1.70E-02	0.79	0.69	1.82	2.07	0	0	0	0	0	0	0	0
1998	40	0.63	7.86	28.14	1.70E-02	0.69	0.60	1.54	1.75	0	0	0	0	0	0	0	0
1998	45	0.61	6.68	28.41	1.60E-02	0.68	0.59	1.46	1.66	0	0	0	0	0	0	0	0
1998	50	0.68	5.97	28.82	1.60E-02	0.74	0.64	1.57	1.79	0	0	0	0	0	0	0	0
1998	55	0.81	5.73	29.35	1.60E-02	0.88	0.77	1.88	2.14	0	0	0	0	0	0	0	0
1998	60	1.03	5.95	30.02	1.60E-02	1.10	0.97	2.39	2.72	0	0	0	0	0	0	0	0
1998	65	1.33	6.65	30.82	1.60E-02	1.39	1.24	3.10	3.53	0	0	0	0	0	0	0	0
1998	70	1.70	7.81	31.75	1.70E-02	1.76	1.58	4.00	4.56	0	0	0	0	0	0	0	0
1998	75	2.15	9.43	32.82	1.80E-02	2.21	2.00	5.10	5.81	0	0	0	0	0	0	0	0
1998	80	2.67	11.53	34.02	1.90E-02	2.74	2.48	6.40	7.29	0	0	0	0	0	0	0	0

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
1999	0	1.28	44.51	119.08	6.30E-02	1.28	1.18	9.31	10.60	0	0	0	0	0	0	0	0
1999	1	6.17	42.43	71.87	3.70E-02	6.23	5.69	29.03	33.05	0	0	0	0	0	0	0	0
1999	2	6.17	42.43	71.87	3.70E-02	6.23	5.69	29.03	33.05	0	0	0	0	0	0	0	0
1999	3	6.17	42.43	71.87	3.70E-02	6.23	5.69	29.03	33.05	0	0	0	0	0	0	0	0
1999	4	6.17	42.43	71.87	3.70E-02	6.23	5.69	29.03	33.05	0	0	0	0	0	0	0	0
1999	5	6.17	42.43	71.87	3.70E-02	6.23	5.69	29.03	33.05	0	0	0	0	0	0	0	0
1999	10	3.95	31.82	46.88	3.00E-02	4.02	3.66	15.94	18.15	0	0	0	0	0	0	0	0
1999	15	2.36	23.26	32.44	2.50E-02	2.42	2.19	7.43	8.46	0	0	0	0	0	0	0	0
1999	20	1.47	17.19	28.36	2.10E-02	1.53	1.37	3.82	4.35	0	0	0	0	0	0	0	0
1999	25	1.14	14.15	28.10	2.00E-02	1.21	1.07	2.96	3.36	0	0	0	0	0	0	0	0
1999	30	0.89	11.58	27.98	1.80E-02	0.96	0.84	2.28	2.60	0	0	0	0	0	0	0	0
1999	35	0.72	9.48	27.98	1.70E-02	0.79	0.69	1.81	2.06	0	0	0	0	0	0	0	0
1999	40	0.63	7.84	28.12	1.70E-02	0.69	0.60	1.53	1.75	0	0	0	0	0	0	0	0
1999	45	0.61	6.66	28.39	1.60E-02	0.68	0.59	1.45	1.65	0	0	0	0	0	0	0	0
1999	50	0.67	5.96	28.79	1.60E-02	0.74	0.64	1.57	1.78	0	0	0	0	0	0	0	0
1999	55	0.81	5.71	29.33	1.60E-02	0.88	0.77	1.88	2.14	0	0	0	0	0	0	0	0
1999	60	1.03	5.94	30.00	1.60E-02	1.09	0.97	2.39	2.72	0	0	0	0	0	0	0	0
1999	65	1.32	6.63	30.80	1.60E-02	1.39	1.24	3.09	3.52	0	0	0	0	0	0	0	0
1999	70	1.69	7.79	31.73	1.70E-02	1.76	1.58	3.99	4.55	0	0	0	0	0	0	0	0
1999	75	2.14	9.41	32.79	1.80E-02	2.21	1.99	5.09	5.80	0	0	0	0	0	0	0	0
1999	80	2.67	11.50	33.99	1.90E-02	2.73	2.48	6.39	7.27	0	0	0	0	0	0	0	0
2000	0	1.28	44.51	119.08	6.30E-02	1.28	1.18	9.31	10.60	0	0	0	0	0	0	0	0
2000	1	6.15	42.32	71.81	3.70E-02	6.22	5.68	28.96	32.97	0	0	0	0	0	0	0	0
2000	2	6.15	42.32	71.81	3.70E-02	6.22	5.68	28.96	32.97	0	0	0	0	0	0	0	0
2000	3	6.15	42.32	71.81	3.70E-02	6.22	5.68	28.96	32.97	0	0	0	0	0	0	0	0
2000	4	6.15	42.32	71.81	3.70E-02	6.22	5.68	28.96	32.97	0	0	0	0	0	0	0	0
2000	5	6.15	42.32	71.81	3.70E-02	6.22	5.68	28.96	32.97	0	0	0	0	0	0	0	0
2000	10	3.95	31.74	46.84	3.00E-02	4.01	3.65	15.90	18.10	0	0	0	0	0	0	0	0
2000	15	2.35	23.20	32.41	2.50E-02	2.42	2.19	7.41	8.43	0	0	0	0	0	0	0	0
2000	20	1.46	17.15	28.33	2.10E-02	1.53	1.37	3.81	4.34	0	0	0	0	0	0	0	0
2000	25	1.14	14.12	28.08	2.00E-02	1.20	1.07	2.95	3.36	0	0	0	0	0	0	0	0
2000	30	0.89	11.55	27.95	1.80E-02	0.96	0.84	2.28	2.59	0	0	0	0	0	0	0	0
2000	35	0.72	9.45	27.96	1.70E-02	0.78	0.68	1.81	2.06	0	0	0	0	0	0	0	0
2000	40	0.63	7.82	28.10	1.70E-02	0.69	0.60	1.53	1.74	0	0	0	0	0	0	0	0
2000	45	0.61	6.65	28.37	1.60E-02	0.68	0.58	1.45	1.65	0	0	0	0	0	0	0	0
2000	50	0.67	5.94	28.77	1.60E-02	0.74	0.64	1.56	1.78	0	0	0	0	0	0	0	0
2000	55	0.81	5.70	29.30	1.60E-02	0.88	0.77	1.87	2.13	0	0	0	0	0	0	0	0
2000	60	1.03	5.92	29.97	1.60E-02	1.09	0.97	2.38	2.71	0	0	0	0	0	0	0	0
2000	65	1.32	6.61	30.77	1.60E-02	1.38	1.24	3.08	3.51	0	0	0	0	0	0	0	0
2000	70	1.69	7.77	31.70	1.70E-02	1.75	1.58	3.98	4.53	0	0	0	0	0	0	0	0
2000	75	2.14	9.39	32.76	1.80E-02	2.20	1.99	5.08	5.78	0	0	0	0	0	0	0	0
2000	80	2.66	11.47	33.96	1.90E-02	2.73	2.47	6.37	7.25	0	0	0	0	0	0	0	0

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2001	0	1.28	44.51	119.08	6.30E-02	1.28	1.18	9.31	10.60	0	0	0	0	0	0	0	0
2001	1	6.14	42.22	71.75	3.70E-02	6.20	5.67	28.89	32.89	0	0	0	0	0	0	0	0
2001	2	6.14	42.22	71.75	3.70E-02	6.20	5.67	28.89	32.89	0	0	0	0	0	0	0	0
2001	3	6.14	42.22	71.75	3.70E-02	6.20	5.67	28.89	32.89	0	0	0	0	0	0	0	0
2001	4	6.14	42.22	71.75	3.70E-02	6.20	5.67	28.89	32.89	0	0	0	0	0	0	0	0
2001	5	6.14	42.22	71.75	3.70E-02	6.20	5.67	28.89	32.89	0	0	0	0	0	0	0	0
2001	10	3.94	31.66	46.81	3.00E-02	4.00	3.64	15.86	18.06	0	0	0	0	0	0	0	0
2001	15	2.35	23.15	32.39	2.50E-02	2.41	2.18	7.39	8.41	0	0	0	0	0	0	0	0
2001	20	1.46	17.11	28.31	2.10E-02	1.52	1.36	3.80	4.33	0	0	0	0	0	0	0	0
2001	25	1.14	14.08	28.05	2.00E-02	1.20	1.07	2.94	3.35	0	0	0	0	0	0	0	0
2001	30	0.89	11.52	27.93	1.80E-02	0.95	0.84	2.27	2.59	0	0	0	0	0	0	0	0
2001	35	0.72	9.43	27.93	1.70E-02	0.78	0.68	1.80	2.05	0	0	0	0	0	0	0	0
2001	40	0.63	7.80	28.07	1.70E-02	0.69	0.60	1.53	1.74	0	0	0	0	0	0	0	0
2001	45	0.61	6.63	28.34	1.60E-02	0.67	0.58	1.44	1.64	0	0	0	0	0	0	0	0
2001	50	0.67	5.93	28.75	1.60E-02	0.74	0.64	1.56	1.78	0	0	0	0	0	0	0	0
2001	55	0.81	5.69	29.28	1.60E-02	0.87	0.77	1.87	2.13	0	0	0	0	0	0	0	0
2001	60	1.03	5.91	29.95	1.60E-02	1.09	0.96	2.38	2.70	0	0	0	0	0	0	0	0
2001	65	1.32	6.60	30.74	1.60E-02	1.38	1.23	3.08	3.50	0	0	0	0	0	0	0	0
2001	70	1.69	7.75	31.67	1.70E-02	1.75	1.57	3.97	4.52	0	0	0	0	0	0	0	0
2001	75	2.13	9.36	32.74	1.80E-02	2.20	1.98	5.07	5.77	0	0	0	0	0	0	0	0
2001	80	2.66	11.44	33.93	1.90E-02	2.72	2.47	6.35	7.23	0	0	0	0	0	0	0	0
2002	0	1.28	44.51	119.08	6.30E-02	1.28	1.18	9.31	10.60	0	0	0	0	0	0	0	0
2002	1	6.13	42.12	71.69	3.70E-02	6.19	5.66	28.82	32.81	0	0	0	0	0	0	0	0
2002	2	6.13	42.12	71.69	3.70E-02	6.19	5.66	28.82	32.81	0	0	0	0	0	0	0	0
2002	3	6.13	42.12	71.69	3.70E-02	6.19	5.66	28.82	32.81	0	0	0	0	0	0	0	0
2002	4	6.13	42.12	71.69	3.70E-02	6.19	5.66	28.82	32.81	0	0	0	0	0	0	0	0
2002	5	6.13	42.12	71.69	3.70E-02	6.19	5.66	28.82	32.81	0	0	0	0	0	0	0	0
2002	10	3.93	31.58	46.77	3.00E-02	3.99	3.64	15.82	18.01	0	0	0	0	0	0	0	0
2002	15	2.34	23.09	32.36	2.50E-02	2.41	2.18	7.37	8.39	0	0	0	0	0	0	0	0
2002	20	1.46	17.06	28.29	2.10E-02	1.52	1.36	3.79	4.32	0	0	0	0	0	0	0	0
2002	25	1.13	14.05	28.03	2.00E-02	1.20	1.06	2.93	3.34	0	0	0	0	0	0	0	0
2002	30	0.89	11.50	27.90	1.80E-02	0.95	0.84	2.27	2.58	0	0	0	0	0	0	0	0
2002	35	0.72	9.41	27.91	1.70E-02	0.78	0.68	1.80	2.05	0	0	0	0	0	0	0	0
2002	40	0.63	7.78	28.05	1.70E-02	0.69	0.60	1.52	1.73	0	0	0	0	0	0	0	0
2002	45	0.61	6.61	28.32	1.60E-02	0.67	0.58	1.44	1.64	0	0	0	0	0	0	0	0
2002	50	0.67	5.91	28.72	1.60E-02	0.73	0.64	1.56	1.77	0	0	0	0	0	0	0	0
2002	55	0.81	5.67	29.25	1.60E-02	0.87	0.76	1.86	2.12	0	0	0	0	0	0	0	0
2002	60	1.02	5.90	29.92	1.60E-02	1.09	0.96	2.37	2.70	0	0	0	0	0	0	0	0
2002	65	1.32	6.58	30.72	1.60E-02	1.38	1.23	3.07	3.49	0	0	0	0	0	0	0	0
2002	70	1.68	7.73	31.65	1.70E-02	1.75	1.57	3.96	4.51	0	0	0	0	0	0	0	0
2002	75	2.13	9.34	32.71	1.80E-02	2.19	1.98	5.05	5.75	0	0	0	0	0	0	0	0
2002	80	2.65	11.41	33.90	1.90E-02	2.72	2.46	6.34	7.22	0	0	0	0	0	0	0	0

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2003	0	0.99	41.43	123.52	6.30E-02	0.99	0.91	7.65	8.71	0	0	0	0	0	0	0	0
2003	1	1.14	23.38	44.71	3.70E-02	1.21	1.07	11.89	13.54	0	0	0	0	0	0	0	0
2003	2	1.14	23.38	44.71	3.70E-02	1.21	1.07	11.89	13.54	0	0	0	0	0	0	0	0
2003	3	1.14	23.38	44.71	3.70E-02	1.21	1.07	11.89	13.54	0	0	0	0	0	0	0	0
2003	4	1.14	23.38	44.71	3.70E-02	1.21	1.07	11.89	13.54	0	0	0	0	0	0	0	0
2003	5	1.14	23.38	44.71	3.70E-02	1.21	1.07	11.89	13.54	0	0	0	0	0	0	0	0
2003	10	1.05	14.01	33.53	3.00E-02	1.11	0.98	6.48	7.38	0	0	0	0	0	0	0	0
2003	15	0.95	8.03	25.54	2.50E-02	1.02	0.90	3.10	3.53	0	0	0	0	0	0	0	0
2003	20	0.87	5.58	20.84	2.10E-02	0.94	0.82	1.83	2.08	0	0	0	0	0	0	0	0
2003	25	0.85	5.30	18.73	2.00E-02	0.91	0.80	1.59	1.81	0	0	0	0	0	0	0	0
2003	30	0.86	5.12	16.96	1.80E-02	0.92	0.81	1.39	1.58	0	0	0	0	0	0	0	0
2003	35	0.91	5.04	15.52	1.70E-02	0.97	0.86	1.21	1.38	0	0	0	0	0	0	0	0
2003	40	0.99	5.06	14.42	1.70E-02	1.05	0.93	1.07	1.21	0	0	0	0	0	0	0	0
2003	45	1.10	5.17	13.66	1.60E-02	1.17	1.04	0.95	1.08	0	0	0	0	0	0	0	0
2003	50	1.26	5.38	13.23	1.60E-02	1.32	1.18	0.85	0.97	0	0	0	0	0	0	0	0
2003	55	1.44	5.69	13.14	1.60E-02	1.51	1.35	0.79	0.90	0	0	0	0	0	0	0	0
2003	60	1.66	6.09	13.39	1.60E-02	1.73	1.55	0.76	0.86	0	0	0	0	0	0	0	0
2003	65	1.92	6.59	13.97	1.60E-02	1.98	1.79	0.75	0.85	0	0	0	0	0	0	0	0
2003	70	2.21	7.19	14.89	1.70E-02	2.27	2.05	0.77	0.88	0	0	0	0	0	0	0	0
2003	75	2.53	7.88	16.15	1.80E-02	2.60	2.35	0.82	0.94	0	0	0	0	0	0	0	0
2003	80	2.89	8.67	17.75	1.90E-02	2.96	2.68	0.90	1.03	0	0	0	0	0	0	0	0
2004	0	0.99	41.43	123.52	6.30E-02	0.99	0.91	7.65	8.71	0	0	0	0	0	0	0	0
2004	1	1.14	23.30	44.64	3.70E-02	1.20	1.07	11.85	13.49	0	0	0	0	0	0	0	0
2004	2	1.14	23.30	44.64	3.70E-02	1.20	1.07	11.85	13.49	0	0	0	0	0	0	0	0
2004	3	1.14	23.30	44.64	3.70E-02	1.20	1.07	11.85	13.49	0	0	0	0	0	0	0	0
2004	4	1.14	23.30	44.64	3.70E-02	1.20	1.07	11.85	13.49	0	0	0	0	0	0	0	0
2004	5	1.14	23.30	44.64	3.70E-02	1.20	1.07	11.85	13.49	0	0	0	0	0	0	0	0
2004	10	1.04	13.97	33.47	3.00E-02	1.11	0.98	6.46	7.35	0	0	0	0	0	0	0	0
2004	15	0.95	8.01	25.49	2.50E-02	1.01	0.89	3.09	3.52	0	0	0	0	0	0	0	0
2004	20	0.87	5.56	20.81	2.10E-02	0.93	0.82	1.82	2.07	0	0	0	0	0	0	0	0
2004	25	0.85	5.28	18.70	2.00E-02	0.91	0.80	1.59	1.81	0	0	0	0	0	0	0	0
2004	30	0.86	5.11	16.93	1.80E-02	0.92	0.81	1.38	1.58	0	0	0	0	0	0	0	0
2004	35	0.90	5.03	15.50	1.70E-02	0.97	0.85	1.21	1.38	0	0	0	0	0	0	0	0
2004	40	0.99	5.04	14.40	1.70E-02	1.05	0.93	1.06	1.21	0	0	0	0	0	0	0	0
2004	45	1.10	5.16	13.64	1.60E-02	1.17	1.03	0.94	1.07	0	0	0	0	0	0	0	0
2004	50	1.25	5.36	13.21	1.60E-02	1.32	1.17	0.85	0.97	0	0	0	0	0	0	0	0
2004	55	1.44	5.67	13.12	1.60E-02	1.50	1.34	0.79	0.90	0	0	0	0	0	0	0	0
2004	60	1.66	6.07	13.37	1.60E-02	1.72	1.55	0.75	0.86	0	0	0	0	0	0	0	0
2004	65	1.91	6.57	13.95	1.60E-02	1.98	1.78	0.75	0.85	0	0	0	0	0	0	0	0
2004	70	2.20	7.16	14.87	1.70E-02	2.27	2.05	0.77	0.88	0	0	0	0	0	0	0	0
2004	75	2.53	7.85	16.13	1.80E-02	2.59	2.34	0.82	0.93	0	0	0	0	0	0	0	0
2004	80	2.88	8.64	17.72	1.90E-02	2.95	2.67	0.90	1.02	0	0	0	0	0	0	0	0

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2005	0	0.99	41.43	123.52	6.30E-02	0.99	0.91	7.65	8.71	0	0	0	0	0	0	0	0
2005	1	1.14	23.20	44.55	3.70E-02	1.20	1.07	11.80	13.43	0	0	0	0	0	0	0	0
2005	2	1.14	23.20	44.55	3.70E-02	1.20	1.07	11.80	13.43	0	0	0	0	0	0	0	0
2005	3	1.14	23.20	44.55	3.70E-02	1.20	1.07	11.80	13.43	0	0	0	0	0	0	0	0
2005	4	1.14	23.20	44.55	3.70E-02	1.20	1.07	11.80	13.43	0	0	0	0	0	0	0	0
2005	5	1.14	23.20	44.55	3.70E-02	1.20	1.07	11.80	13.43	0	0	0	0	0	0	0	0
2005	10	1.04	13.91	33.41	3.00E-02	1.10	0.98	6.43	7.32	0	0	0	0	0	0	0	0
2005	15	0.95	7.97	25.44	2.50E-02	1.01	0.89	3.08	3.51	0	0	0	0	0	0	0	0
2005	20	0.87	5.53	20.76	2.10E-02	0.93	0.82	1.81	2.06	0	0	0	0	0	0	0	0
2005	25	0.84	5.26	18.66	2.00E-02	0.91	0.80	1.58	1.80	0	0	0	0	0	0	0	0
2005	30	0.86	5.09	16.90	1.80E-02	0.92	0.81	1.38	1.57	0	0	0	0	0	0	0	0
2005	35	0.90	5.01	15.46	1.70E-02	0.97	0.85	1.20	1.37	0	0	0	0	0	0	0	0
2005	40	0.98	5.02	14.37	1.70E-02	1.05	0.92	1.06	1.20	0	0	0	0	0	0	0	0
2005	45	1.10	5.13	13.61	1.60E-02	1.16	1.03	0.94	1.07	0	0	0	0	0	0	0	0
2005	50	1.25	5.34	13.18	1.60E-02	1.31	1.17	0.85	0.97	0	0	0	0	0	0	0	0
2005	55	1.43	5.65	13.10	1.60E-02	1.50	1.34	0.79	0.89	0	0	0	0	0	0	0	0
2005	60	1.65	6.05	13.34	1.60E-02	1.72	1.54	0.75	0.86	0	0	0	0	0	0	0	0
2005	65	1.91	6.54	13.92	1.60E-02	1.97	1.77	0.74	0.85	0	0	0	0	0	0	0	0
2005	70	2.19	7.13	14.84	1.70E-02	2.26	2.04	0.77	0.87	0	0	0	0	0	0	0	0
2005	75	2.52	7.82	16.09	1.80E-02	2.58	2.34	0.82	0.93	0	0	0	0	0	0	0	0
2005	80	2.87	8.60	17.68	1.90E-02	2.94	2.67	0.89	1.02	0	0	0	0	0	0	0	0
2006	0	0.99	41.43	123.52	6.30E-02	0.99	0.91	7.65	8.71	0	0	0	0	0	0	0	0
2006	1	1.13	23.08	44.45	3.70E-02	1.20	1.06	11.74	13.36	0	0	0	0	0	0	0	0
2006	2	1.13	23.08	44.45	3.70E-02	1.20	1.06	11.74	13.36	0	0	0	0	0	0	0	0
2006	3	1.13	23.08	44.45	3.70E-02	1.20	1.06	11.74	13.36	0	0	0	0	0	0	0	0
2006	4	1.13	23.08	44.45	3.70E-02	1.20	1.06	11.74	13.36	0	0	0	0	0	0	0	0
2006	5	1.13	23.08	44.45	3.70E-02	1.20	1.06	11.74	13.36	0	0	0	0	0	0	0	0
2006	10	1.04	13.84	33.33	3.00E-02	1.10	0.97	6.40	7.29	0	0	0	0	0	0	0	0
2006	15	0.94	7.93	25.38	2.50E-02	1.01	0.89	3.06	3.49	0	0	0	0	0	0	0	0
2006	20	0.86	5.50	20.72	2.10E-02	0.93	0.82	1.80	2.05	0	0	0	0	0	0	0	0
2006	25	0.84	5.23	18.62	2.00E-02	0.90	0.79	1.57	1.79	0	0	0	0	0	0	0	0
2006	30	0.85	5.06	16.86	1.80E-02	0.92	0.80	1.37	1.56	0	0	0	0	0	0	0	0
2006	35	0.90	4.98	15.43	1.70E-02	0.96	0.85	1.20	1.36	0	0	0	0	0	0	0	0
2006	40	0.98	5.00	14.34	1.70E-02	1.04	0.92	1.05	1.20	0	0	0	0	0	0	0	0
2006	45	1.09	5.11	13.58	1.60E-02	1.16	1.03	0.93	1.06	0	0	0	0	0	0	0	0
2006	50	1.24	5.31	13.15	1.60E-02	1.31	1.16	0.84	0.96	0	0	0	0	0	0	0	0
2006	55	1.43	5.62	13.06	1.60E-02	1.49	1.33	0.78	0.89	0	0	0	0	0	0	0	0
2006	60	1.64	6.02	13.31	1.60E-02	1.71	1.53	0.75	0.85	0	0	0	0	0	0	0	0
2006	65	1.90	6.51	13.89	1.60E-02	1.96	1.77	0.74	0.84	0	0	0	0	0	0	0	0
2006	70	2.18	7.10	14.81	1.70E-02	2.25	2.03	0.76	0.87	0	0	0	0	0	0	0	0
2006	75	2.51	7.78	16.06	1.80E-02	2.57	2.33	0.81	0.92	0	0	0	0	0	0	0	0
2006	80	2.86	8.56	17.64	1.90E-02	2.93	2.65	0.89	1.01	0	0	0	0	0	0	0	0

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2007	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	0	0	0	0	0	0	0	0
2007	1	0.20	16.29	30.12	3.70E-02	0.26	0.20	8.32	9.47	0	0	0	0	0	0	0	0
2007	2	0.20	16.29	30.12	3.70E-02	0.26	0.20	8.32	9.47	0	0	0	0	0	0	0	0
2007	3	0.20	16.29	30.12	3.70E-02	0.26	0.20	8.32	9.47	0	0	0	0	0	0	0	0
2007	4	0.20	16.29	30.12	3.70E-02	0.26	0.20	8.32	9.47	0	0	0	0	0	0	0	0
2007	5	0.20	16.29	30.12	3.70E-02	0.26	0.20	8.32	9.47	0	0	0	0	0	0	0	0
2007	10	0.18	9.77	22.58	3.00E-02	0.25	0.19	4.53	5.16	0	0	0	0	0	0	0	0
2007	15	0.17	5.60	17.20	2.50E-02	0.23	0.17	2.17	2.47	0	0	0	0	0	0	0	0
2007	20	0.15	3.89	14.04	2.10E-02	0.22	0.16	1.28	1.45	0	0	0	0	0	0	0	0
2007	25	0.15	3.69	12.61	2.00E-02	0.21	0.16	1.11	1.27	0	0	0	0	0	0	0	0
2007	30	0.15	3.57	11.42	1.80E-02	0.21	0.16	0.97	1.11	0	0	0	0	0	0	0	0
2007	35	0.16	3.52	10.45	1.70E-02	0.22	0.17	0.85	0.97	0	0	0	0	0	0	0	0
2007	40	0.17	3.53	9.71	1.70E-02	0.24	0.18	0.75	0.85	0	0	0	0	0	0	0	0
2007	45	0.19	3.61	9.20	1.60E-02	0.26	0.20	0.66	0.75	0	0	0	0	0	0	0	0
2007	50	0.22	3.75	8.91	1.60E-02	0.28	0.22	0.60	0.68	0	0	0	0	0	0	0	0
2007	55	0.25	3.97	8.85	1.60E-02	0.32	0.25	0.55	0.63	0	0	0	0	0	0	0	0
2007	60	0.29	4.25	9.02	1.60E-02	0.35	0.29	0.53	0.60	0	0	0	0	0	0	0	0
2007	65	0.33	4.59	9.41	1.60E-02	0.40	0.33	0.53	0.60	0	0	0	0	0	0	0	0
2007	70	0.38	5.01	10.03	1.70E-02	0.45	0.38	0.54	0.62	0	0	0	0	0	0	0	0
2007	75	0.44	5.49	10.88	1.80E-02	0.51	0.43	0.58	0.66	0	0	0	0	0	0	0	0
2007	80	0.50	6.04	11.95	1.90E-02	0.57	0.48	0.63	0.72	0	0	0	0	0	0	0	0
2008	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	0	0	0	0	0	0	0	0
2008	1	0.20	16.18	29.99	3.70E-02	0.26	0.20	8.26	9.40	0	0	0	0	0	0	0	0
2008	2	0.20	16.18	29.99	3.70E-02	0.26	0.20	8.26	9.40	0	0	0	0	0	0	0	0
2008	3	0.20	16.18	29.99	3.70E-02	0.26	0.20	8.26	9.40	0	0	0	0	0	0	0	0
2008	4	0.20	16.18	29.99	3.70E-02	0.26	0.20	8.26	9.40	0	0	0	0	0	0	0	0
2008	5	0.20	16.18	29.99	3.70E-02	0.26	0.20	8.26	9.40	0	0	0	0	0	0	0	0
2008	10	0.18	9.70	22.49	3.00E-02	0.25	0.19	4.50	5.13	0	0	0	0	0	0	0	0
2008	15	0.17	5.56	17.13	2.50E-02	0.23	0.17	2.16	2.45	0	0	0	0	0	0	0	0
2008	20	0.15	3.86	13.98	2.10E-02	0.22	0.16	1.27	1.44	0	0	0	0	0	0	0	0
2008	25	0.15	3.67	12.56	2.00E-02	0.21	0.16	1.11	1.26	0	0	0	0	0	0	0	0
2008	30	0.15	3.55	11.37	1.80E-02	0.21	0.16	0.97	1.10	0	0	0	0	0	0	0	0
2008	35	0.16	3.49	10.41	1.70E-02	0.22	0.17	0.84	0.96	0	0	0	0	0	0	0	0
2008	40	0.17	3.50	9.67	1.70E-02	0.24	0.18	0.74	0.84	0	0	0	0	0	0	0	0
2008	45	0.19	3.58	9.16	1.60E-02	0.26	0.20	0.66	0.75	0	0	0	0	0	0	0	0
2008	50	0.22	3.73	8.87	1.60E-02	0.28	0.22	0.59	0.68	0	0	0	0	0	0	0	0
2008	55	0.25	3.94	8.81	1.60E-02	0.31	0.25	0.55	0.63	0	0	0	0	0	0	0	0
2008	60	0.29	4.22	8.98	1.60E-02	0.35	0.29	0.53	0.60	0	0	0	0	0	0	0	0
2008	65	0.33	4.56	9.37	1.60E-02	0.40	0.33	0.52	0.59	0	0	0	0	0	0	0	0
2008	70	0.38	4.98	9.99	1.70E-02	0.45	0.37	0.54	0.61	0	0	0	0	0	0	0	0
2008	75	0.44	5.46	10.83	1.80E-02	0.50	0.42	0.57	0.65	0	0	0	0	0	0	0	0
2008	80	0.50	6.00	11.90	1.90E-02	0.56	0.48	0.63	0.71	0	0	0	0	0	0	0	0

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2009	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	0	0	0	0	0	0	0	0
2009	1	0.20	16.06	29.84	3.70E-02	0.26	0.20	8.20	9.33	0	0	0	0	0	0	0	0
2009	2	0.20	16.06	29.84	3.70E-02	0.26	0.20	8.20	9.33	0	0	0	0	0	0	0	0
2009	3	0.20	16.06	29.84	3.70E-02	0.26	0.20	8.20	9.33	0	0	0	0	0	0	0	0
2009	4	0.20	16.06	29.84	3.70E-02	0.26	0.20	8.20	9.33	0	0	0	0	0	0	0	0
2009	5	0.20	16.06	29.84	3.70E-02	0.26	0.20	8.20	9.33	0	0	0	0	0	0	0	0
2009	10	0.18	9.62	22.38	3.00E-02	0.24	0.19	4.47	5.09	0	0	0	0	0	0	0	0
2009	15	0.16	5.52	17.04	2.50E-02	0.23	0.17	2.14	2.44	0	0	0	0	0	0	0	0
2009	20	0.15	3.83	13.91	2.10E-02	0.21	0.16	1.26	1.43	0	0	0	0	0	0	0	0
2009	25	0.15	3.64	12.50	2.00E-02	0.21	0.16	1.10	1.25	0	0	0	0	0	0	0	0
2009	30	0.15	3.52	11.32	1.80E-02	0.21	0.16	0.96	1.09	0	0	0	0	0	0	0	0
2009	35	0.16	3.46	10.36	1.70E-02	0.22	0.16	0.84	0.95	0	0	0	0	0	0	0	0
2009	40	0.17	3.48	9.62	1.70E-02	0.23	0.18	0.73	0.84	0	0	0	0	0	0	0	0
2009	45	0.19	3.55	9.12	1.60E-02	0.25	0.20	0.65	0.74	0	0	0	0	0	0	0	0
2009	50	0.22	3.70	8.83	1.60E-02	0.28	0.22	0.59	0.67	0	0	0	0	0	0	0	0
2009	55	0.25	3.91	8.77	1.60E-02	0.31	0.25	0.55	0.62	0	0	0	0	0	0	0	0
2009	60	0.29	4.18	8.94	1.60E-02	0.35	0.28	0.52	0.59	0	0	0	0	0	0	0	0
2009	65	0.33	4.53	9.33	1.60E-02	0.39	0.32	0.52	0.59	0	0	0	0	0	0	0	0
2009	70	0.38	4.94	9.94	1.70E-02	0.44	0.37	0.53	0.61	0	0	0	0	0	0	0	0
2009	75	0.44	5.41	10.78	1.80E-02	0.50	0.42	0.57	0.65	0	0	0	0	0	0	0	0
2009	80	0.50	5.95	11.84	1.90E-02	0.56	0.48	0.62	0.71	0	0	0	0	0	0	0	0
2010	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	2.10E-03	7.91E-01	2.36E+00	1.20E-03	2.10E-03	1.93E-03	1.46E-01	1.66E-01
2010	1	0.19	9.40	15.38	3.70E-02	0.26	0.20	4.73	5.38	3.68E-03	1.79E-01	2.94E-01	7.06E-04	4.90E-03	3.78E-03	9.02E-02	1.03E-01
2010	2	0.19	9.40	15.38	3.70E-02	0.26	0.20	4.73	5.38	3.68E-03	1.79E-01	2.94E-01	7.06E-04	4.90E-03	3.78E-03	9.02E-02	1.03E-01
2010	3	0.19	9.40	15.38	3.70E-02	0.26	0.20	4.73	5.38	3.68E-03	1.79E-01	2.94E-01	7.06E-04	4.90E-03	3.78E-03	9.02E-02	1.03E-01
2010	4	0.19	9.40	15.38	3.70E-02	0.26	0.20	4.73	5.38	3.68E-03	1.79E-01	2.94E-01	7.06E-04	4.90E-03	3.78E-03	9.02E-02	1.03E-01
2010	5	0.19	9.40	15.38	3.70E-02	0.26	0.20	4.73	5.38	3.68E-03	1.79E-01	2.94E-01	7.06E-04	4.90E-03	3.78E-03	9.02E-02	1.03E-01
2010	10	0.18	5.64	11.53	3.00E-02	0.24	0.18	2.58	2.93	3.36E-03	1.08E-01	2.20E-01	5.73E-04	4.58E-03	3.49E-03	4.92E-02	5.60E-02
2010	15	0.16	3.23	8.78	2.50E-02	0.22	0.17	1.23	1.40	3.05E-03	6.17E-02	1.68E-01	4.77E-04	4.28E-03	3.23E-03	2.35E-02	2.68E-02
2010	20	0.15	2.24	7.17	2.10E-02	0.21	0.16	0.73	0.83	2.81E-03	4.28E-02	1.37E-01	4.01E-04	4.03E-03	2.98E-03	1.38E-02	1.58E-02
2010	25	0.14	2.13	6.44	2.00E-02	0.21	0.15	0.63	0.72	2.73E-03	4.07E-02	1.23E-01	3.82E-04	3.95E-03	2.92E-03	1.21E-02	1.38E-02
2010	30	0.15	2.06	5.83	1.80E-02	0.21	0.15	0.55	0.63	2.77E-03	3.93E-02	1.11E-01	3.44E-04	3.99E-03	2.94E-03	1.05E-02	1.20E-02
2010	35	0.15	2.03	5.34	1.70E-02	0.22	0.16	0.48	0.55	2.92E-03	3.87E-02	1.02E-01	3.24E-04	4.14E-03	3.09E-03	9.20E-03	1.05E-02
2010	40	0.17	2.04	4.96	1.70E-02	0.23	0.17	0.42	0.48	3.19E-03	3.88E-02	9.47E-02	3.24E-04	4.41E-03	3.32E-03	8.07E-03	9.20E-03
2010	45	0.19	2.08	4.70	1.60E-02	0.25	0.19	0.38	0.43	3.55E-03	3.97E-02	8.96E-02	3.05E-04	4.77E-03	3.66E-03	7.18E-03	8.17E-03
2010	50	0.21	2.17	4.55	1.60E-02	0.28	0.22	0.34	0.39	4.05E-03	4.13E-02	8.69E-02	3.05E-04	5.27E-03	4.12E-03	6.49E-03	7.39E-03
2010	55	0.24	2.29	4.52	1.60E-02	0.31	0.24	0.32	0.36	4.64E-03	4.37E-02	8.63E-02	3.05E-04	5.86E-03	4.66E-03	6.01E-03	6.83E-03
2010	60	0.28	2.45	4.61	1.60E-02	0.34	0.28	0.30	0.34	5.34E-03	4.68E-02	8.79E-02	3.05E-04	6.57E-03	5.32E-03	5.74E-03	6.53E-03
2010	65	0.32	2.65	4.81	1.60E-02	0.39	0.32	0.30	0.34	6.16E-03	5.06E-02	9.17E-02	3.05E-04	7.39E-03	6.07E-03	5.69E-03	6.49E-03
2010	70	0.37	2.89	5.12	1.70E-02	0.44	0.36	0.31	0.35	7.10E-03	5.52E-02	9.78E-02	3.24E-04	8.32E-03	6.93E-03	5.86E-03	6.66E-03
2010	75	0.43	3.17	5.56	1.80E-02	0.49	0.41	0.33	0.37	8.15E-03	6.05E-02	1.06E-01	3.44E-04	9.37E-03	7.90E-03	6.24E-03	7.10E-03
2010	80	0.49	3.49	6.10	1.90E-02	0.55	0.47	0.36	0.41	9.29E-03	6.66E-02	1.16E-01	3.63E-04	1.05E-02	8.95E-03	6.83E-03	7.77E-03

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2011	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	2.49E-03	9.37E-01	2.79E+00	1.43E-03	2.49E-03	2.28E-03	1.73E-01	1.97E-01
2011	1	0.19	9.32	15.22	3.70E-02	0.26	0.20	4.68	5.33	4.32E-03	2.11E-01	3.44E-01	8.37E-04	5.77E-03	4.46E-03	1.06E-01	1.21E-01
2011	2	0.19	9.32	15.22	3.70E-02	0.26	0.20	4.68	5.33	4.32E-03	2.11E-01	3.44E-01	8.37E-04	5.77E-03	4.46E-03	1.06E-01	1.21E-01
2011	3	0.19	9.32	15.22	3.70E-02	0.26	0.20	4.68	5.33	4.32E-03	2.11E-01	3.44E-01	8.37E-04	5.77E-03	4.46E-03	1.06E-01	1.21E-01
2011	4	0.19	9.32	15.22	3.70E-02	0.26	0.20	4.68	5.33	4.32E-03	2.11E-01	3.44E-01	8.37E-04	5.77E-03	4.46E-03	1.06E-01	1.21E-01
2011	5	0.19	9.32	15.22	3.70E-02	0.26	0.20	4.68	5.33	4.32E-03	2.11E-01	3.44E-01	8.37E-04	5.77E-03	4.46E-03	1.06E-01	1.21E-01
2011	10	0.18	5.59	11.41	3.00E-02	0.24	0.18	2.55	2.91	3.96E-03	1.26E-01	2.58E-01	6.79E-04	5.41E-03	4.12E-03	5.78E-02	6.58E-02
2011	15	0.16	3.20	8.69	2.50E-02	0.22	0.17	1.22	1.39	3.60E-03	7.24E-02	1.97E-01	5.66E-04	5.04E-03	3.78E-03	2.76E-02	3.15E-02
2011	20	0.15	2.22	7.09	2.10E-02	0.21	0.16	0.72	0.82	3.30E-03	5.03E-02	1.60E-01	4.75E-04	4.75E-03	3.51E-03	1.63E-02	1.85E-02
2011	25	0.14	2.11	6.38	2.00E-02	0.21	0.15	0.63	0.71	3.21E-03	4.78E-02	1.44E-01	4.52E-04	4.66E-03	3.42E-03	1.42E-02	1.62E-02
2011	30	0.14	2.04	5.77	1.80E-02	0.21	0.15	0.55	0.62	3.26E-03	4.62E-02	1.31E-01	4.07E-04	4.71E-03	3.46E-03	1.24E-02	1.41E-02
2011	35	0.15	2.01	5.28	1.70E-02	0.22	0.16	0.48	0.54	3.42E-03	4.55E-02	1.20E-01	3.85E-04	4.86E-03	3.62E-03	1.08E-02	1.23E-02
2011	40	0.17	2.02	4.91	1.70E-02	0.23	0.17	0.42	0.48	3.73E-03	4.56E-02	1.11E-01	3.85E-04	5.18E-03	3.91E-03	9.50E-03	1.08E-02
2011	45	0.18	2.06	4.65	1.60E-02	0.25	0.19	0.37	0.42	4.16E-03	4.66E-02	1.05E-01	3.62E-04	5.61E-03	4.32E-03	8.44E-03	9.59E-03
2011	50	0.21	2.15	4.50	1.60E-02	0.27	0.21	0.34	0.38	4.73E-03	4.85E-02	1.02E-01	3.62E-04	6.18E-03	4.84E-03	7.62E-03	8.66E-03
2011	55	0.24	2.27	4.47	1.60E-02	0.30	0.24	0.31	0.36	5.43E-03	5.13E-02	1.01E-01	3.62E-04	6.88E-03	5.47E-03	7.06E-03	8.03E-03
2011	60	0.28	2.43	4.56	1.60E-02	0.34	0.28	0.30	0.34	6.27E-03	5.49E-02	1.03E-01	3.62E-04	7.71E-03	6.24E-03	6.74E-03	7.67E-03
2011	65	0.32	2.63	4.76	1.60E-02	0.38	0.32	0.30	0.34	7.24E-03	5.94E-02	1.08E-01	3.62E-04	8.69E-03	7.13E-03	6.70E-03	7.60E-03
2011	70	0.37	2.87	5.07	1.70E-02	0.43	0.36	0.30	0.35	8.32E-03	6.48E-02	1.15E-01	3.85E-04	9.77E-03	8.14E-03	6.88E-03	7.83E-03
2011	75	0.42	3.14	5.50	1.80E-02	0.49	0.41	0.32	0.37	9.57E-03	7.11E-02	1.24E-01	4.07E-04	1.10E-02	9.27E-03	7.33E-03	8.35E-03
2011	80	0.48	3.46	6.04	1.90E-02	0.55	0.47	0.36	0.40	1.09E-02	7.82E-02	1.37E-01	4.30E-04	1.24E-02	1.05E-02	8.03E-03	9.14E-03
2012	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	3.08E-03	1.16E+00	3.46E+00	1.76E-03	3.08E-03	2.83E-03	2.14E-01	2.44E-01
2012	1	0.19	9.23	15.05	3.70E-02	0.25	0.20	4.64	5.28	5.29E-03	2.58E-01	4.22E-01	1.04E-03	7.09E-03	5.46E-03	1.30E-01	1.48E-01
2012	2	0.19	9.23	15.05	3.70E-02	0.25	0.20	4.64	5.28	5.29E-03	2.58E-01	4.22E-01	1.04E-03	7.09E-03	5.46E-03	1.30E-01	1.48E-01
2012	3	0.19	9.23	15.05	3.70E-02	0.25	0.20	4.64	5.28	5.29E-03	2.58E-01	4.22E-01	1.04E-03	7.09E-03	5.46E-03	1.30E-01	1.48E-01
2012	4	0.19	9.23	15.05	3.70E-02	0.25	0.20	4.64	5.28	5.29E-03	2.58E-01	4.22E-01	1.04E-03	7.09E-03	5.46E-03	1.30E-01	1.48E-01
2012	5	0.19	9.23	15.05	3.70E-02	0.25	0.20	4.64	5.28	5.29E-03	2.58E-01	4.22E-01	1.04E-03	7.09E-03	5.46E-03	1.30E-01	1.48E-01
2012	10	0.17	5.53	11.28	3.00E-02	0.24	0.18	2.53	2.88	4.85E-03	1.55E-01	3.16E-01	8.40E-04	6.64E-03	5.04E-03	7.08E-02	8.06E-02
2012	15	0.16	3.17	8.59	2.50E-02	0.22	0.17	1.21	1.38	4.40E-03	8.88E-02	2.41E-01	7.00E-04	6.19E-03	4.65E-03	3.39E-02	3.86E-02
2012	20	0.14	2.20	7.01	2.10E-02	0.21	0.15	0.71	0.81	4.03E-03	6.16E-02	1.96E-01	5.88E-04	5.83E-03	4.29E-03	1.99E-02	2.27E-02
2012	25	0.14	2.09	6.30	2.00E-02	0.20	0.15	0.62	0.71	3.92E-03	5.86E-02	1.77E-01	5.60E-04	5.71E-03	4.20E-03	1.74E-02	1.98E-02
2012	30	0.14	2.02	5.71	1.80E-02	0.21	0.15	0.54	0.62	3.98E-03	5.66E-02	1.60E-01	5.04E-04	5.77E-03	4.26E-03	1.52E-02	1.73E-02
2012	35	0.15	1.99	5.22	1.70E-02	0.21	0.16	0.47	0.54	4.20E-03	5.57E-02	1.46E-01	4.76E-04	5.99E-03	4.45E-03	1.32E-02	1.51E-02
2012	40	0.16	2.00	4.85	1.70E-02	0.23	0.17	0.42	0.47	4.57E-03	5.59E-02	1.36E-01	4.76E-04	6.36E-03	4.79E-03	1.16E-02	1.32E-02
2012	45	0.18	2.04	4.60	1.60E-02	0.25	0.19	0.37	0.42	5.10E-03	5.72E-02	1.29E-01	4.48E-04	6.89E-03	5.29E-03	1.03E-02	1.18E-02
2012	50	0.21	2.12	4.45	1.60E-02	0.27	0.21	0.33	0.38	5.80E-03	5.95E-02	1.25E-01	4.48E-04	7.59E-03	5.94E-03	9.33E-03	1.06E-02
2012	55	0.24	2.25	4.42	1.60E-02	0.30	0.24	0.31	0.35	6.67E-03	6.29E-02	1.24E-01	4.48E-04	8.46E-03	6.72E-03	8.66E-03	9.83E-03
2012	60	0.27	2.40	4.51	1.60E-02	0.34	0.27	0.30	0.34	7.68E-03	6.73E-02	1.26E-01	4.48E-04	9.47E-03	7.65E-03	8.26E-03	9.41E-03
2012	65	0.32	2.60	4.70	1.60E-02	0.38	0.31	0.29	0.33	8.85E-03	7.29E-02	1.32E-01	4.48E-04	1.06E-02	8.74E-03	8.21E-03	9.33E-03
2012	70	0.36	2.84	5.01	1.70E-02	0.43	0.36	0.30	0.34	1.02E-02	7.94E-02	1.40E-01	4.76E-04	1.20E-02	9.97E-03	8.43E-03	9.61E-03
2012	75	0.42	3.11	5.44	1.80E-02	0.48	0.41	0.32	0.37	1.17E-02	8.71E-02	1.52E-01	5.04E-04	1.35E-02	1.14E-02	8.99E-03	1.02E-02
2012	80	0.48	3.42	5.97	1.90E-02	0.54	0.46	0.35	0.40	1.34E-02	9.58E-02	1.67E-01	5.32E-04	1.52E-02	1.29E-02	9.83E-03	1.12E-02

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2013	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	3.52E-03	1.33E+00	3.96E+00	2.02E-03	3.52E-03	3.23E-03	2.45E-01	2.79E-01
2013	1	0.15	7.43	12.84	3.70E-02	0.22	0.16	3.74	4.26	4.93E-03	2.38E-01	4.11E-01	1.18E-03	6.98E-03	5.22E-03	1.20E-01	1.36E-01
2013	2	0.15	7.43	12.84	3.70E-02	0.22	0.16	3.74	4.26	4.93E-03	2.38E-01	4.11E-01	1.18E-03	6.98E-03	5.22E-03	1.20E-01	1.36E-01
2013	3	0.15	7.43	12.84	3.70E-02	0.22	0.16	3.74	4.26	4.93E-03	2.38E-01	4.11E-01	1.18E-03	6.98E-03	5.22E-03	1.20E-01	1.36E-01
2013	4	0.15	7.43	12.84	3.70E-02	0.22	0.16	3.74	4.26	4.93E-03	2.38E-01	4.11E-01	1.18E-03	6.98E-03	5.22E-03	1.20E-01	1.36E-01
2013	5	0.15	7.43	12.84	3.70E-02	0.22	0.16	3.74	4.26	4.93E-03	2.38E-01	4.11E-01	1.18E-03	6.98E-03	5.22E-03	1.20E-01	1.36E-01
2013	10	0.14	4.45	9.62	3.00E-02	0.21	0.15	2.04	2.32	4.52E-03	1.43E-01	3.08E-01	9.61E-04	6.56E-03	4.84E-03	6.53E-02	7.43E-02
2013	15	0.13	2.55	7.33	2.50E-02	0.19	0.14	0.98	1.11	4.10E-03	8.18E-02	2.35E-01	8.01E-04	6.15E-03	4.45E-03	3.13E-02	3.56E-02
2013	20	0.12	1.77	5.98	2.10E-02	0.18	0.13	0.57	0.65	3.78E-03	5.67E-02	1.92E-01	6.72E-04	5.83E-03	4.13E-03	1.84E-02	2.09E-02
2013	25	0.11	1.69	5.38	2.00E-02	0.18	0.13	0.50	0.57	3.65E-03	5.40E-02	1.72E-01	6.40E-04	5.70E-03	4.03E-03	1.60E-02	1.83E-02
2013	30	0.12	1.63	4.87	1.80E-02	0.18	0.13	0.44	0.50	3.71E-03	5.22E-02	1.56E-01	5.76E-04	5.76E-03	4.10E-03	1.40E-02	1.59E-02
2013	35	0.12	1.60	4.46	1.70E-02	0.19	0.13	0.38	0.43	3.91E-03	5.13E-02	1.43E-01	5.44E-04	5.96E-03	4.26E-03	1.22E-02	1.39E-02
2013	40	0.13	1.61	4.14	1.70E-02	0.20	0.14	0.34	0.38	4.26E-03	5.15E-02	1.33E-01	5.44E-04	6.31E-03	4.58E-03	1.07E-02	1.22E-02
2013	45	0.15	1.64	3.92	1.60E-02	0.21	0.16	0.30	0.34	4.77E-03	5.26E-02	1.26E-01	5.12E-04	6.82E-03	5.06E-03	9.51E-03	1.09E-02
2013	50	0.17	1.71	3.80	1.60E-02	0.23	0.18	0.27	0.31	5.41E-03	5.48E-02	1.22E-01	5.12E-04	7.46E-03	5.67E-03	8.61E-03	9.80E-03
2013	55	0.19	1.81	3.77	1.60E-02	0.26	0.20	0.25	0.28	6.21E-03	5.79E-02	1.21E-01	5.12E-04	8.26E-03	6.40E-03	7.97E-03	9.06E-03
2013	60	0.22	1.94	3.84	1.60E-02	0.29	0.23	0.24	0.27	7.17E-03	6.20E-02	1.23E-01	5.12E-04	9.22E-03	7.27E-03	7.62E-03	8.68E-03
2013	65	0.26	2.10	4.01	1.60E-02	0.32	0.26	0.24	0.27	8.26E-03	6.71E-02	1.28E-01	5.12E-04	1.03E-02	8.29E-03	7.56E-03	8.61E-03
2013	70	0.30	2.29	4.28	1.70E-02	0.36	0.30	0.24	0.28	9.51E-03	7.32E-02	1.37E-01	5.44E-04	1.16E-02	9.45E-03	7.78E-03	8.84E-03
2013	75	0.34	2.51	4.64	1.80E-02	0.41	0.34	0.26	0.29	1.09E-02	8.02E-02	1.48E-01	5.76E-04	1.30E-02	1.07E-02	8.26E-03	9.41E-03
2013	80	0.39	2.76	5.09	1.90E-02	0.45	0.38	0.28	0.32	1.25E-02	8.83E-02	1.63E-01	6.08E-04	1.45E-02	1.22E-02	9.06E-03	1.03E-02
2014	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	4.11E-03	1.55E+00	4.61E+00	2.35E-03	4.11E-03	3.77E-03	2.86E-01	3.25E-01
2014	1	0.15	7.35	12.66	3.70E-02	0.22	0.16	3.70	4.21	5.68E-03	2.74E-01	4.73E-01	1.38E-03	8.07E-03	6.01E-03	1.38E-01	1.57E-01
2014	2	0.15	7.35	12.66	3.70E-02	0.22	0.16	3.70	4.21	5.68E-03	2.74E-01	4.73E-01	1.38E-03	8.07E-03	6.01E-03	1.38E-01	1.57E-01
2014	3	0.15	7.35	12.66	3.70E-02	0.22	0.16	3.70	4.21	5.68E-03	2.74E-01	4.73E-01	1.38E-03	8.07E-03	6.01E-03	1.38E-01	1.57E-01
2014	4	0.15	7.35	12.66	3.70E-02	0.22	0.16	3.70	4.21	5.68E-03	2.74E-01	4.73E-01	1.38E-03	8.07E-03	6.01E-03	1.38E-01	1.57E-01
2014	5	0.15	7.35	12.66	3.70E-02	0.22	0.16	3.70	4.21	5.68E-03	2.74E-01	4.73E-01	1.38E-03	8.07E-03	6.01E-03	1.38E-01	1.57E-01
2014	10	0.14	4.41	9.50	3.00E-02	0.20	0.15	2.02	2.30	5.19E-03	1.64E-01	3.55E-01	1.12E-03	7.58E-03	5.56E-03	7.53E-02	8.57E-02
2014	15	0.13	2.53	7.23	2.50E-02	0.19	0.14	0.97	1.10	4.74E-03	9.43E-02	2.70E-01	9.34E-04	7.13E-03	5.15E-03	3.60E-02	4.10E-02
2014	20	0.12	1.75	5.90	2.10E-02	0.18	0.13	0.57	0.65	4.33E-03	6.54E-02	2.20E-01	7.84E-04	6.72E-03	4.78E-03	2.12E-02	2.41E-02
2014	25	0.11	1.67	5.31	2.00E-02	0.18	0.13	0.50	0.56	4.22E-03	6.22E-02	1.98E-01	7.47E-04	6.61E-03	4.67E-03	1.85E-02	2.11E-02
2014	30	0.11	1.61	4.80	1.80E-02	0.18	0.13	0.43	0.49	4.26E-03	6.02E-02	1.79E-01	6.72E-04	6.65E-03	4.70E-03	1.61E-02	1.84E-02
2014	35	0.12	1.59	4.40	1.70E-02	0.19	0.13	0.38	0.43	4.52E-03	5.92E-02	1.64E-01	6.35E-04	6.91E-03	4.93E-03	1.41E-02	1.60E-02
2014	40	0.13	1.59	4.08	1.70E-02	0.20	0.14	0.33	0.38	4.89E-03	5.94E-02	1.52E-01	6.35E-04	7.28E-03	5.30E-03	1.24E-02	1.41E-02
2014	45	0.15	1.63	3.87	1.60E-02	0.21	0.16	0.29	0.34	5.49E-03	6.07E-02	1.44E-01	5.97E-04	7.88E-03	5.83E-03	1.10E-02	1.25E-02
2014	50	0.17	1.69	3.75	1.60E-02	0.23	0.18	0.27	0.30	6.24E-03	6.32E-02	1.40E-01	5.97E-04	8.63E-03	6.53E-03	9.93E-03	1.13E-02
2014	55	0.19	1.79	3.72	1.60E-02	0.26	0.20	0.25	0.28	7.17E-03	6.68E-02	1.39E-01	5.97E-04	9.56E-03	7.36E-03	9.19E-03	1.05E-02
2014	60	0.22	1.92	3.79	1.60E-02	0.29	0.22	0.24	0.27	8.25E-03	7.15E-02	1.42E-01	5.97E-04	1.06E-02	8.36E-03	8.78E-03	1.00E-02
2014	65	0.26	2.07	3.96	1.60E-02	0.32	0.26	0.23	0.27	9.52E-03	7.74E-02	1.48E-01	5.97E-04	1.19E-02	9.56E-03	8.70E-03	9.93E-03
2014	70	0.29	2.26	4.22	1.70E-02	0.36	0.29	0.24	0.27	1.10E-02	8.44E-02	1.58E-01	6.35E-04	1.34E-02	1.09E-02	8.96E-03	1.02E-02
2014	75	0.34	2.48	4.58	1.80E-02	0.40	0.33	0.26	0.29	1.26E-02	9.25E-02	1.71E-01	6.72E-04	1.50E-02	1.24E-02	9.56E-03	1.09E-02
2014	80	0.39	2.73	5.03	1.90E-02	0.45	0.38	0.28	0.32	1.44E-02	1.02E-01	1.88E-01	7.09E-04	1.68E-02	1.40E-02	1.05E-02	1.19E-02

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2015	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	4.51E-03	1.70E+00	5.07E+00	2.58E-03	4.51E-03	4.14E-03	3.14E-01	3.57E-01
2015	1	0.15	7.26	12.48	3.70E-02	0.21	0.16	3.65	4.16	6.15E-03	2.98E-01	5.12E-01	1.52E-03	8.78E-03	6.52E-03	1.50E-01	1.71E-01
2015	2	0.15	7.26	12.48	3.70E-02	0.21	0.16	3.65	4.16	6.15E-03	2.98E-01	5.12E-01	1.52E-03	8.78E-03	6.52E-03	1.50E-01	1.71E-01
2015	3	0.15	7.26	12.48	3.70E-02	0.21	0.16	3.65	4.16	6.15E-03	2.98E-01	5.12E-01	1.52E-03	8.78E-03	6.52E-03	1.50E-01	1.71E-01
2015	4	0.15	7.26	12.48	3.70E-02	0.21	0.16	3.65	4.16	6.15E-03	2.98E-01	5.12E-01	1.52E-03	8.78E-03	6.52E-03	1.50E-01	1.71E-01
2015	5	0.15	7.26	12.48	3.70E-02	0.21	0.16	3.65	4.16	6.15E-03	2.98E-01	5.12E-01	1.52E-03	8.78E-03	6.52E-03	1.50E-01	1.71E-01
2015	10	0.14	4.35	9.36	3.00E-02	0.20	0.15	1.99	2.27	5.62E-03	1.78E-01	3.84E-01	1.23E-03	8.24E-03	6.03E-03	8.17E-02	9.30E-02
2015	15	0.13	2.50	7.13	2.50E-02	0.19	0.14	0.95	1.09	5.13E-03	1.02E-01	2.92E-01	1.03E-03	7.75E-03	5.58E-03	3.91E-02	4.45E-02
2015	20	0.11	1.73	5.82	2.10E-02	0.18	0.13	0.56	0.64	4.68E-03	7.10E-02	2.39E-01	8.61E-04	7.30E-03	5.17E-03	2.30E-02	2.62E-02
2015	25	0.11	1.65	5.23	2.00E-02	0.18	0.12	0.49	0.56	4.55E-03	6.75E-02	2.14E-01	8.20E-04	7.18E-03	5.04E-03	2.01E-02	2.28E-02
2015	30	0.11	1.59	4.73	1.80E-02	0.18	0.13	0.43	0.49	4.63E-03	6.53E-02	1.94E-01	7.38E-04	7.26E-03	5.13E-03	1.75E-02	1.99E-02
2015	35	0.12	1.57	4.33	1.70E-02	0.18	0.13	0.37	0.42	4.88E-03	6.42E-02	1.78E-01	6.97E-04	7.51E-03	5.33E-03	1.53E-02	1.74E-02
2015	40	0.13	1.57	4.03	1.70E-02	0.19	0.14	0.33	0.37	5.33E-03	6.45E-02	1.65E-01	6.97E-04	7.96E-03	5.74E-03	1.34E-02	1.53E-02
2015	45	0.15	1.61	3.81	1.60E-02	0.21	0.15	0.29	0.33	5.95E-03	6.59E-02	1.56E-01	6.56E-04	8.57E-03	6.32E-03	1.19E-02	1.36E-02
2015	50	0.17	1.67	3.69	1.60E-02	0.23	0.17	0.26	0.30	6.77E-03	6.86E-02	1.51E-01	6.56E-04	9.39E-03	7.10E-03	1.08E-02	1.23E-02
2015	55	0.19	1.77	3.67	1.60E-02	0.25	0.20	0.24	0.28	7.75E-03	7.25E-02	1.50E-01	6.56E-04	1.04E-02	8.00E-03	9.97E-03	1.14E-02
2015	60	0.22	1.89	3.74	1.60E-02	0.28	0.22	0.23	0.27	8.94E-03	7.76E-02	1.53E-01	6.56E-04	1.16E-02	9.10E-03	9.56E-03	1.09E-02
2015	65	0.25	2.05	3.90	1.60E-02	0.32	0.25	0.23	0.26	1.03E-02	8.40E-02	1.60E-01	6.56E-04	1.30E-02	1.03E-02	9.47E-03	1.07E-02
2015	70	0.29	2.23	4.16	1.70E-02	0.35	0.29	0.24	0.27	1.19E-02	9.15E-02	1.70E-01	6.97E-04	1.45E-02	1.18E-02	9.72E-03	1.11E-02
2015	75	0.33	2.45	4.51	1.80E-02	0.40	0.33	0.25	0.29	1.36E-02	1.00E-01	1.85E-01	7.38E-04	1.62E-02	1.34E-02	1.04E-02	1.18E-02
2015	80	0.38	2.69	4.95	1.90E-02	0.44	0.37	0.28	0.32	1.56E-02	1.10E-01	2.03E-01	7.79E-04	1.82E-02	1.52E-02	1.14E-02	1.29E-02
2016	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	4.85E-03	1.83E+00	5.45E+00	2.78E-03	4.85E-03	4.45E-03	3.38E-01	3.84E-01
2016	1	0.15	7.17	12.28	3.70E-02	0.21	0.16	3.61	4.11	6.53E-03	3.16E-01	5.42E-01	1.63E-03	9.35E-03	6.93E-03	1.59E-01	1.81E-01
2016	2	0.15	7.17	12.28	3.70E-02	0.21	0.16	3.61	4.11	6.53E-03	3.16E-01	5.42E-01	1.63E-03	9.35E-03	6.93E-03	1.59E-01	1.81E-01
2016	3	0.15	7.17	12.28	3.70E-02	0.21	0.16	3.61	4.11	6.53E-03	3.16E-01	5.42E-01	1.63E-03	9.35E-03	6.93E-03	1.59E-01	1.81E-01
2016	4	0.15	7.17	12.28	3.70E-02	0.21	0.16	3.61	4.11	6.53E-03	3.16E-01	5.42E-01	1.63E-03	9.35E-03	6.93E-03	1.59E-01	1.81E-01
2016	5	0.15	7.17	12.28	3.70E-02	0.21	0.16	3.61	4.11	6.53E-03	3.16E-01	5.42E-01	1.63E-03	9.35E-03	6.93E-03	1.59E-01	1.81E-01
2016	10	0.14	4.30	9.21	3.00E-02	0.20	0.15	1.97	2.24	5.95E-03	1.89E-01	4.06E-01	1.32E-03	8.78E-03	6.40E-03	8.67E-02	9.87E-02
2016	15	0.12	2.46	7.01	2.50E-02	0.19	0.13	0.94	1.07	5.43E-03	1.09E-01	3.09E-01	1.10E-03	8.25E-03	5.91E-03	4.15E-02	4.72E-02
2016	20	0.11	1.71	5.72	2.10E-02	0.18	0.13	0.55	0.63	4.98E-03	7.54E-02	2.52E-01	9.26E-04	7.81E-03	5.51E-03	2.44E-02	2.78E-02
2016	25	0.11	1.63	5.15	2.00E-02	0.17	0.12	0.48	0.55	4.85E-03	7.17E-02	2.27E-01	8.82E-04	7.67E-03	5.38E-03	2.13E-02	2.43E-02
2016	30	0.11	1.57	4.66	1.80E-02	0.18	0.12	0.42	0.48	4.90E-03	6.93E-02	2.05E-01	7.94E-04	7.72E-03	5.43E-03	1.86E-02	2.11E-02
2016	35	0.12	1.55	4.26	1.70E-02	0.18	0.13	0.37	0.42	5.16E-03	6.82E-02	1.88E-01	7.50E-04	7.98E-03	5.69E-03	1.62E-02	1.85E-02
2016	40	0.13	1.55	3.96	1.70E-02	0.19	0.14	0.32	0.37	5.65E-03	6.84E-02	1.75E-01	7.50E-04	8.47E-03	6.13E-03	1.42E-02	1.62E-02
2016	45	0.14	1.59	3.75	1.60E-02	0.21	0.15	0.29	0.33	6.31E-03	7.00E-02	1.65E-01	7.06E-04	9.13E-03	6.70E-03	1.27E-02	1.44E-02
2016	50	0.16	1.65	3.63	1.60E-02	0.23	0.17	0.26	0.30	7.15E-03	7.28E-02	1.60E-01	7.06E-04	9.97E-03	7.50E-03	1.14E-02	1.30E-02
2016	55	0.19	1.74	3.61	1.60E-02	0.25	0.19	0.24	0.27	8.20E-03	7.69E-02	1.59E-01	7.06E-04	1.10E-02	8.47E-03	1.06E-02	1.20E-02
2016	60	0.22	1.87	3.68	1.60E-02	0.28	0.22	0.23	0.26	9.48E-03	8.24E-02	1.62E-01	7.06E-04	1.23E-02	9.66E-03	1.01E-02	1.15E-02
2016	65	0.25	2.02	3.84	1.60E-02	0.31	0.25	0.23	0.26	1.09E-02	8.91E-02	1.69E-01	7.06E-04	1.38E-02	1.10E-02	1.01E-02	1.14E-02
2016	70	0.29	2.20	4.09	1.70E-02	0.35	0.28	0.23	0.27	1.26E-02	9.72E-02	1.80E-01	7.50E-04	1.54E-02	1.25E-02	1.03E-02	1.18E-02
2016	75	0.33	2.42	4.44	1.80E-02	0.39	0.32	0.25	0.28	1.44E-02	1.07E-01	1.96E-01	7.94E-04	1.72E-02	1.42E-02	1.10E-02	1.25E-02
2016	80	0.37	2.66	4.88	1.90E-02	0.44	0.37	0.27	0.31	1.65E-02	1.17E-01	2.15E-01	8.38E-04	1.93E-02	1.61E-02	1.20E-02	1.37E-02

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2017	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	5.30E-03	1.99E+00	5.95E+00	3.03E-03	5.30E-03	4.86E-03	3.68E-01	4.19E-01
2017	1	0.15	7.06	12.07	3.70E-02	0.21	0.16	3.56	4.05	6.98E-03	3.40E-01	5.81E-01	1.78E-03	1.01E-02	7.46E-03	1.71E-01	1.95E-01
2017	2	0.15	7.06	12.07	3.70E-02	0.21	0.16	3.56	4.05	6.98E-03	3.40E-01	5.81E-01	1.78E-03	1.01E-02	7.46E-03	1.71E-01	1.95E-01
2017	3	0.15	7.06	12.07	3.70E-02	0.21	0.16	3.56	4.05	6.98E-03	3.40E-01	5.81E-01	1.78E-03	1.01E-02	7.46E-03	1.71E-01	1.95E-01
2017	4	0.15	7.06	12.07	3.70E-02	0.21	0.16	3.56	4.05	6.98E-03	3.40E-01	5.81E-01	1.78E-03	1.01E-02	7.46E-03	1.71E-01	1.95E-01
2017	5	0.15	7.06	12.07	3.70E-02	0.21	0.16	3.56	4.05	6.98E-03	3.40E-01	5.81E-01	1.78E-03	1.01E-02	7.46E-03	1.71E-01	1.95E-01
2017	10	0.13	4.23	9.05	3.00E-02	0.20	0.14	1.94	2.21	6.40E-03	2.04E-01	4.36E-01	1.44E-03	9.49E-03	6.89E-03	9.33E-02	1.06E-01
2017	15	0.12	2.43	6.89	2.50E-02	0.19	0.13	0.93	1.06	5.83E-03	1.17E-01	3.32E-01	1.20E-03	8.91E-03	6.36E-03	4.47E-02	5.08E-02
2017	20	0.11	1.68	5.63	2.10E-02	0.18	0.12	0.55	0.62	5.34E-03	8.11E-02	2.71E-01	1.01E-03	8.43E-03	5.92E-03	2.63E-02	2.99E-02
2017	25	0.11	1.60	5.06	2.00E-02	0.17	0.12	0.48	0.54	5.20E-03	7.71E-02	2.43E-01	9.63E-04	8.28E-03	5.78E-03	2.29E-02	2.61E-02
2017	30	0.11	1.55	4.58	1.80E-02	0.17	0.12	0.42	0.47	5.25E-03	7.45E-02	2.20E-01	8.67E-04	8.33E-03	5.87E-03	2.00E-02	2.28E-02
2017	35	0.12	1.52	4.19	1.70E-02	0.18	0.13	0.36	0.41	5.54E-03	7.34E-02	2.02E-01	8.19E-04	8.62E-03	6.12E-03	1.75E-02	1.99E-02
2017	40	0.13	1.53	3.89	1.70E-02	0.19	0.14	0.32	0.36	6.07E-03	7.36E-02	1.87E-01	8.19E-04	9.15E-03	6.60E-03	1.53E-02	1.75E-02
2017	45	0.14	1.56	3.69	1.60E-02	0.20	0.15	0.28	0.32	6.74E-03	7.53E-02	1.77E-01	7.70E-04	9.82E-03	7.22E-03	1.36E-02	1.55E-02
2017	50	0.16	1.63	3.57	1.60E-02	0.22	0.17	0.26	0.29	7.70E-03	7.83E-02	1.72E-01	7.70E-04	1.08E-02	8.09E-03	1.23E-02	1.40E-02
2017	55	0.18	1.72	3.55	1.60E-02	0.25	0.19	0.24	0.27	8.81E-03	8.28E-02	1.71E-01	7.70E-04	1.19E-02	9.15E-03	1.14E-02	1.30E-02
2017	60	0.21	1.84	3.61	1.60E-02	0.28	0.22	0.23	0.26	1.02E-02	8.86E-02	1.74E-01	7.70E-04	1.32E-02	1.04E-02	1.09E-02	1.24E-02
2017	65	0.24	1.99	3.77	1.60E-02	0.31	0.25	0.22	0.26	1.17E-02	9.59E-02	1.82E-01	7.70E-04	1.48E-02	1.18E-02	1.08E-02	1.23E-02
2017	70	0.28	2.17	4.02	1.70E-02	0.35	0.28	0.23	0.26	1.35E-02	1.05E-01	1.94E-01	8.19E-04	1.66E-02	1.34E-02	1.11E-02	1.27E-02
2017	75	0.32	2.38	4.36	1.80E-02	0.39	0.32	0.25	0.28	1.55E-02	1.15E-01	2.10E-01	8.67E-04	1.86E-02	1.53E-02	1.18E-02	1.35E-02
2017	80	0.37	2.62	4.79	1.90E-02	0.43	0.36	0.27	0.31	1.77E-02	1.26E-01	2.31E-01	9.15E-04	2.08E-02	1.73E-02	1.30E-02	1.47E-02
2018	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	5.79E-03	2.18E+00	6.50E+00	3.32E-03	5.79E-03	5.32E-03	4.03E-01	4.58E-01
2018	1	0.14	6.95	11.84	3.70E-02	0.21	0.15	3.50	3.99	7.53E-03	3.66E-01	6.23E-01	1.95E-03	1.09E-02	8.00E-03	1.84E-01	2.10E-01
2018	2	0.14	6.95	11.84	3.70E-02	0.21	0.15	3.50	3.99	7.53E-03	3.66E-01	6.23E-01	1.95E-03	1.09E-02	8.00E-03	1.84E-01	2.10E-01
2018	3	0.14	6.95	11.84	3.70E-02	0.21	0.15	3.50	3.99	7.53E-03	3.66E-01	6.23E-01	1.95E-03	1.09E-02	8.00E-03	1.84E-01	2.10E-01
2018	4	0.14	6.95	11.84	3.70E-02	0.21	0.15	3.50	3.99	7.53E-03	3.66E-01	6.23E-01	1.95E-03	1.09E-02	8.00E-03	1.84E-01	2.10E-01
2018	5	0.14	6.95	11.84	3.70E-02	0.21	0.15	3.50	3.99	7.53E-03	3.66E-01	6.23E-01	1.95E-03	1.09E-02	8.00E-03	1.84E-01	2.10E-01
2018	10	0.13	4.17	8.88	3.00E-02	0.20	0.14	1.91	2.17	6.89E-03	2.19E-01	4.67E-01	1.58E-03	1.03E-02	7.42E-03	1.00E-01	1.14E-01
2018	15	0.12	2.39	6.76	2.50E-02	0.18	0.13	0.91	1.04	6.26E-03	1.26E-01	3.56E-01	1.32E-03	9.63E-03	6.84E-03	4.80E-02	5.47E-02
2018	20	0.11	1.66	5.52	2.10E-02	0.17	0.12	0.54	0.61	5.74E-03	8.73E-02	2.90E-01	1.11E-03	9.10E-03	6.37E-03	2.83E-02	3.22E-02
2018	25	0.11	1.58	4.96	2.00E-02	0.17	0.12	0.47	0.53	5.58E-03	8.30E-02	2.61E-01	1.05E-03	8.95E-03	6.26E-03	2.47E-02	2.81E-02
2018	30	0.11	1.52	4.49	1.80E-02	0.17	0.12	0.41	0.47	5.68E-03	8.02E-02	2.36E-01	9.47E-04	9.05E-03	6.32E-03	2.15E-02	2.45E-02
2018	35	0.11	1.50	4.11	1.70E-02	0.18	0.13	0.36	0.41	5.95E-03	7.89E-02	2.16E-01	8.95E-04	9.31E-03	6.58E-03	1.88E-02	2.14E-02
2018	40	0.12	1.51	3.82	1.70E-02	0.19	0.14	0.31	0.36	6.47E-03	7.92E-02	2.01E-01	8.95E-04	9.84E-03	7.10E-03	1.65E-02	1.88E-02
2018	45	0.14	1.54	3.62	1.60E-02	0.20	0.15	0.28	0.32	7.26E-03	8.10E-02	1.90E-01	8.42E-04	1.06E-02	7.79E-03	1.46E-02	1.67E-02
2018	50	0.16	1.60	3.50	1.60E-02	0.22	0.17	0.25	0.29	8.26E-03	8.43E-02	1.84E-01	8.42E-04	1.16E-02	8.68E-03	1.33E-02	1.51E-02
2018	55	0.18	1.69	3.48	1.60E-02	0.24	0.19	0.23	0.27	9.47E-03	8.90E-02	1.83E-01	8.42E-04	1.28E-02	9.84E-03	1.23E-02	1.39E-02
2018	60	0.21	1.81	3.55	1.60E-02	0.27	0.21	0.22	0.25	1.09E-02	9.54E-02	1.87E-01	8.42E-04	1.43E-02	1.12E-02	1.17E-02	1.34E-02
2018	65	0.24	1.96	3.70	1.60E-02	0.30	0.24	0.22	0.25	1.26E-02	1.03E-01	1.95E-01	8.42E-04	1.60E-02	1.27E-02	1.16E-02	1.32E-02
2018	70	0.28	2.14	3.94	1.70E-02	0.34	0.28	0.23	0.26	1.45E-02	1.13E-01	2.08E-01	8.95E-04	1.79E-02	1.45E-02	1.19E-02	1.36E-02
2018	75	0.32	2.34	4.28	1.80E-02	0.38	0.31	0.24	0.28	1.66E-02	1.23E-01	2.25E-01	9.47E-04	2.00E-02	1.64E-02	1.27E-02	1.45E-02
2018	80	0.36	2.58	4.70	1.90E-02	0.43	0.35	0.27	0.30	1.90E-02	1.36E-01	2.47E-01	1.00E-03	2.24E-02	1.86E-02	1.39E-02	1.59E-02

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2019	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	6.33E-03	2.38E+00	7.11E+00	3.63E-03	6.33E-03	5.81E-03	4.40E-01	5.01E-01
2019	1	0.14	6.84	11.59	3.70E-02	0.20	0.15	3.44	3.92	8.06E-03	3.93E-01	6.67E-01	2.13E-03	1.17E-02	8.63E-03	1.98E-01	2.25E-01
2019	2	0.14	6.84	11.59	3.70E-02	0.20	0.15	3.44	3.92	8.06E-03	3.93E-01	6.67E-01	2.13E-03	1.17E-02	8.63E-03	1.98E-01	2.25E-01
2019	3	0.14	6.84	11.59	3.70E-02	0.20	0.15	3.44	3.92	8.06E-03	3.93E-01	6.67E-01	2.13E-03	1.17E-02	8.63E-03	1.98E-01	2.25E-01
2019	4	0.14	6.84	11.59	3.70E-02	0.20	0.15	3.44	3.92	8.06E-03	3.93E-01	6.67E-01	2.13E-03	1.17E-02	8.63E-03	1.98E-01	2.25E-01
2019	5	0.14	6.84	11.59	3.70E-02	0.20	0.15	3.44	3.92	8.06E-03	3.93E-01	6.67E-01	2.13E-03	1.17E-02	8.63E-03	1.98E-01	2.25E-01
2019	10	0.13	4.10	8.69	3.00E-02	0.19	0.14	1.88	2.14	7.37E-03	2.36E-01	5.00E-01	1.73E-03	1.11E-02	8.00E-03	1.08E-01	1.23E-01
2019	15	0.12	2.35	6.62	2.50E-02	0.18	0.13	0.90	1.02	6.73E-03	1.35E-01	3.81E-01	1.44E-03	1.04E-02	7.37E-03	5.17E-02	5.88E-02
2019	20	0.11	1.63	5.40	2.10E-02	0.17	0.12	0.53	0.60	6.16E-03	9.38E-02	3.11E-01	1.21E-03	9.84E-03	6.85E-03	3.04E-02	3.46E-02
2019	25	0.10	1.55	4.86	2.00E-02	0.17	0.12	0.46	0.53	5.99E-03	8.92E-02	2.80E-01	1.15E-03	9.67E-03	6.73E-03	2.65E-02	3.02E-02
2019	30	0.11	1.50	4.40	1.80E-02	0.17	0.12	0.40	0.46	6.04E-03	8.62E-02	2.53E-01	1.04E-03	9.73E-03	6.79E-03	2.31E-02	2.63E-02
2019	35	0.11	1.48	4.02	1.70E-02	0.18	0.12	0.35	0.40	6.39E-03	8.49E-02	2.32E-01	9.79E-04	1.01E-02	7.08E-03	2.02E-02	2.30E-02
2019	40	0.12	1.48	3.74	1.70E-02	0.19	0.13	0.31	0.35	6.96E-03	8.52E-02	2.15E-01	9.79E-04	1.06E-02	7.60E-03	1.77E-02	2.02E-02
2019	45	0.14	1.51	3.54	1.60E-02	0.20	0.15	0.27	0.31	7.77E-03	8.71E-02	2.04E-01	9.21E-04	1.15E-02	8.35E-03	1.58E-02	1.80E-02
2019	50	0.15	1.57	3.43	1.60E-02	0.22	0.16	0.25	0.28	8.86E-03	9.06E-02	1.97E-01	9.21E-04	1.25E-02	9.32E-03	1.42E-02	1.62E-02
2019	55	0.18	1.66	3.41	1.60E-02	0.24	0.18	0.23	0.26	1.02E-02	9.57E-02	1.96E-01	9.21E-04	1.39E-02	1.05E-02	1.32E-02	1.50E-02
2019	60	0.20	1.78	3.47	1.60E-02	0.27	0.21	0.22	0.25	1.17E-02	1.03E-01	2.00E-01	9.21E-04	1.54E-02	1.20E-02	1.26E-02	1.43E-02
2019	65	0.24	1.93	3.62	1.60E-02	0.30	0.24	0.22	0.25	1.35E-02	1.11E-01	2.09E-01	9.21E-04	1.72E-02	1.36E-02	1.25E-02	1.42E-02
2019	70	0.27	2.10	3.86	1.70E-02	0.33	0.27	0.22	0.25	1.55E-02	1.21E-01	2.22E-01	9.79E-04	1.92E-02	1.55E-02	1.28E-02	1.46E-02
2019	75	0.31	2.30	4.19	1.80E-02	0.37	0.31	0.24	0.27	1.78E-02	1.33E-01	2.41E-01	1.04E-03	2.15E-02	1.76E-02	1.37E-02	1.56E-02
2019	80	0.35	2.54	4.60	1.90E-02	0.42	0.35	0.26	0.30	2.04E-02	1.46E-01	2.65E-01	1.09E-03	2.41E-02	2.00E-02	1.50E-02	1.71E-02
2020	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	6.65E-03	2.50E+00	7.47E+00	3.81E-03	6.65E-03	6.11E-03	4.63E-01	5.27E-01
2020	1	0.14	6.71	11.32	3.70E-02	0.20	0.15	3.38	3.84	8.28E-03	4.06E-01	6.85E-01	2.24E-03	1.22E-02	8.89E-03	2.04E-01	2.32E-01
2020	2	0.14	6.71	11.32	3.70E-02	0.20	0.15	3.38	3.84	8.28E-03	4.06E-01	6.85E-01	2.24E-03	1.22E-02	8.89E-03	2.04E-01	2.32E-01
2020	3	0.14	6.71	11.32	3.70E-02	0.20	0.15	3.38	3.84	8.28E-03	4.06E-01	6.85E-01	2.24E-03	1.22E-02	8.89E-03	2.04E-01	2.32E-01
2020	4	0.14	6.71	11.32	3.70E-02	0.20	0.15	3.38	3.84	8.28E-03	4.06E-01	6.85E-01	2.24E-03	1.22E-02	8.89E-03	2.04E-01	2.32E-01
2020	5	0.14	6.71	11.32	3.70E-02	0.20	0.15	3.38	3.84	8.28E-03	4.06E-01	6.85E-01	2.24E-03	1.22E-02	8.89E-03	2.04E-01	2.32E-01
2020	10	0.13	4.02	8.49	3.00E-02	0.19	0.14	1.84	2.10	7.56E-03	2.43E-01	5.13E-01	1.81E-03	1.14E-02	8.22E-03	1.11E-01	1.27E-01
2020	15	0.11	2.31	6.47	2.50E-02	0.18	0.13	0.88	1.00	6.89E-03	1.39E-01	3.91E-01	1.51E-03	1.08E-02	7.62E-03	5.33E-02	6.06E-02
2020	20	0.11	1.60	5.28	2.10E-02	0.17	0.12	0.52	0.59	6.35E-03	9.67E-02	3.19E-01	1.27E-03	1.02E-02	7.07E-03	3.13E-02	3.57E-02
2020	25	0.10	1.52	4.74	2.00E-02	0.17	0.12	0.45	0.52	6.17E-03	9.20E-02	2.87E-01	1.21E-03	1.00E-02	6.95E-03	2.73E-02	3.11E-02
2020	30	0.10	1.47	4.29	1.80E-02	0.17	0.12	0.39	0.45	6.23E-03	8.89E-02	2.60E-01	1.09E-03	1.01E-02	7.01E-03	2.38E-02	2.71E-02
2020	35	0.11	1.45	3.93	1.70E-02	0.17	0.12	0.34	0.39	6.59E-03	8.75E-02	2.38E-01	1.03E-03	1.05E-02	7.32E-03	2.08E-02	2.37E-02
2020	40	0.12	1.45	3.65	1.70E-02	0.18	0.13	0.30	0.34	7.13E-03	8.78E-02	2.21E-01	1.03E-03	1.10E-02	7.86E-03	1.83E-02	2.08E-02
2020	45	0.13	1.48	3.46	1.60E-02	0.20	0.14	0.27	0.31	7.98E-03	8.97E-02	2.09E-01	9.67E-04	1.19E-02	8.65E-03	1.63E-02	1.85E-02
2020	50	0.15	1.54	3.35	1.60E-02	0.21	0.16	0.24	0.28	9.07E-03	9.34E-02	2.03E-01	9.67E-04	1.29E-02	9.61E-03	1.47E-02	1.67E-02
2020	55	0.17	1.63	3.33	1.60E-02	0.24	0.18	0.23	0.26	1.05E-02	9.87E-02	2.01E-01	9.67E-04	1.43E-02	1.09E-02	1.36E-02	1.55E-02
2020	60	0.20	1.75	3.39	1.60E-02	0.26	0.20	0.22	0.25	1.20E-02	1.06E-01	2.05E-01	9.67E-04	1.59E-02	1.23E-02	1.30E-02	1.48E-02
2020	65	0.23	1.89	3.54	1.60E-02	0.29	0.23	0.21	0.24	1.39E-02	1.14E-01	2.14E-01	9.67E-04	1.78E-02	1.40E-02	1.29E-02	1.47E-02
2020	70	0.27	2.06	3.77	1.70E-02	0.33	0.26	0.22	0.25	1.60E-02	1.25E-01	2.28E-01	1.03E-03	1.99E-02	1.60E-02	1.32E-02	1.51E-02
2020	75	0.30	2.26	4.09	1.80E-02	0.37	0.30	0.23	0.27	1.84E-02	1.37E-01	2.47E-01	1.09E-03	2.23E-02	1.81E-02	1.41E-02	1.61E-02
2020	80	0.35	2.49	4.50	1.90E-02	0.41	0.34	0.26	0.29	2.10E-02	1.50E-01	2.72E-01	1.15E-03	2.49E-02	2.06E-02	1.55E-02	1.76E-02

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2021	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	7.08E-03	2.67E+00	7.95E+00	4.06E-03	7.08E-03	6.50E-03	4.93E-01	5.61E-01
2021	1	0.13	6.57	11.03	3.70E-02	0.20	0.14	3.31	3.77	8.63E-03	4.23E-01	7.11E-01	2.38E-03	1.28E-02	9.27E-03	2.13E-01	2.42E-01
2021	2	0.13	6.57	11.03	3.70E-02	0.20	0.14	3.31	3.77	8.63E-03	4.23E-01	7.11E-01	2.38E-03	1.28E-02	9.27E-03	2.13E-01	2.42E-01
2021	3	0.13	6.57	11.03	3.70E-02	0.20	0.14	3.31	3.77	8.63E-03	4.23E-01	7.11E-01	2.38E-03	1.28E-02	9.27E-03	2.13E-01	2.42E-01
2021	4	0.13	6.57	11.03	3.70E-02	0.20	0.14	3.31	3.77	8.63E-03	4.23E-01	7.11E-01	2.38E-03	1.28E-02	9.27E-03	2.13E-01	2.42E-01
2021	5	0.13	6.57	11.03	3.70E-02	0.20	0.14	3.31	3.77	8.63E-03	4.23E-01	7.11E-01	2.38E-03	1.28E-02	9.27E-03	2.13E-01	2.42E-01
2021	10	0.12	3.94	8.27	3.00E-02	0.19	0.13	1.80	2.05	7.86E-03	2.54E-01	5.33E-01	1.93E-03	1.20E-02	8.63E-03	1.16E-01	1.32E-01
2021	15	0.11	2.26	6.30	2.50E-02	0.18	0.12	0.86	0.98	7.15E-03	1.45E-01	4.06E-01	1.61E-03	1.13E-02	7.99E-03	5.56E-02	6.32E-02
2021	20	0.10	1.57	5.14	2.10E-02	0.17	0.12	0.51	0.58	6.57E-03	1.01E-01	3.31E-01	1.35E-03	1.07E-02	7.41E-03	3.27E-02	3.72E-02
2021	25	0.10	1.49	4.62	2.00E-02	0.16	0.11	0.44	0.50	6.38E-03	9.59E-02	2.98E-01	1.29E-03	1.05E-02	7.21E-03	2.85E-02	3.25E-02
2021	30	0.10	1.44	4.18	1.80E-02	0.17	0.11	0.39	0.44	6.50E-03	9.27E-02	2.69E-01	1.16E-03	1.06E-02	7.34E-03	2.49E-02	2.83E-02
2021	35	0.11	1.42	3.83	1.70E-02	0.17	0.12	0.34	0.38	6.83E-03	9.13E-02	2.47E-01	1.09E-03	1.09E-02	7.66E-03	2.17E-02	2.47E-02
2021	40	0.12	1.42	3.56	1.70E-02	0.18	0.13	0.30	0.34	7.47E-03	9.16E-02	2.29E-01	1.09E-03	1.16E-02	8.18E-03	1.91E-02	2.17E-02
2021	45	0.13	1.45	3.37	1.60E-02	0.19	0.14	0.26	0.30	8.31E-03	9.36E-02	2.17E-01	1.03E-03	1.24E-02	9.02E-03	1.69E-02	1.93E-02
2021	50	0.15	1.51	3.27	1.60E-02	0.21	0.16	0.24	0.27	9.47E-03	9.74E-02	2.10E-01	1.03E-03	1.36E-02	1.00E-02	1.53E-02	1.75E-02
2021	55	0.17	1.60	3.24	1.60E-02	0.23	0.18	0.22	0.25	1.09E-02	1.03E-01	2.09E-01	1.03E-03	1.50E-02	1.13E-02	1.42E-02	1.62E-02
2021	60	0.19	1.71	3.30	1.60E-02	0.26	0.20	0.21	0.24	1.25E-02	1.10E-01	2.13E-01	1.03E-03	1.66E-02	1.29E-02	1.35E-02	1.55E-02
2021	65	0.22	1.85	3.45	1.60E-02	0.29	0.23	0.21	0.24	1.44E-02	1.19E-01	2.22E-01	1.03E-03	1.85E-02	1.46E-02	1.35E-02	1.53E-02
2021	70	0.26	2.02	3.68	1.70E-02	0.32	0.26	0.22	0.24	1.66E-02	1.30E-01	2.37E-01	1.09E-03	2.07E-02	1.67E-02	1.38E-02	1.57E-02
2021	75	0.30	2.21	3.99	1.80E-02	0.36	0.29	0.23	0.26	1.91E-02	1.43E-01	2.57E-01	1.16E-03	2.32E-02	1.89E-02	1.47E-02	1.67E-02
2021	80	0.34	2.44	4.38	1.90E-02	0.40	0.33	0.25	0.29	2.18E-02	1.57E-01	2.82E-01	1.22E-03	2.59E-02	2.14E-02	1.61E-02	1.84E-02
2022	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	7.56E-03	2.85E+00	8.49E+00	4.33E-03	7.56E-03	6.94E-03	5.26E-01	5.98E-01
2022	1	0.13	6.42	10.72	3.70E-02	0.19	0.14	3.23	3.68	8.93E-03	4.41E-01	7.36E-01	2.54E-03	1.33E-02	9.69E-03	2.22E-01	2.53E-01
2022	2	0.13	6.42	10.72	3.70E-02	0.19	0.14	3.23	3.68	8.93E-03	4.41E-01	7.36E-01	2.54E-03	1.33E-02	9.69E-03	2.22E-01	2.53E-01
2022	3	0.13	6.42	10.72	3.70E-02	0.19	0.14	3.23	3.68	8.93E-03	4.41E-01	7.36E-01	2.54E-03	1.33E-02	9.69E-03	2.22E-01	2.53E-01
2022	4	0.13	6.42	10.72	3.70E-02	0.19	0.14	3.23	3.68	8.93E-03	4.41E-01	7.36E-01	2.54E-03	1.33E-02	9.69E-03	2.22E-01	2.53E-01
2022	5	0.13	6.42	10.72	3.70E-02	0.19	0.14	3.23	3.68	8.93E-03	4.41E-01	7.36E-01	2.54E-03	1.33E-02	9.69E-03	2.22E-01	2.53E-01
2022	10	0.12	3.85	8.04	3.00E-02	0.18	0.13	1.76	2.01	8.18E-03	2.64E-01	5.52E-01	2.06E-03	1.26E-02	9.00E-03	1.21E-01	1.38E-01
2022	15	0.11	2.21	6.12	2.50E-02	0.17	0.12	0.84	0.96	7.42E-03	1.51E-01	4.20E-01	1.72E-03	1.18E-02	8.31E-03	5.79E-02	6.60E-02
2022	20	0.10	1.53	4.99	2.10E-02	0.16	0.11	0.50	0.56	6.80E-03	1.05E-01	3.43E-01	1.44E-03	1.12E-02	7.69E-03	3.41E-02	3.87E-02
2022	25	0.10	1.46	4.49	2.00E-02	0.16	0.11	0.43	0.49	6.66E-03	1.00E-01	3.08E-01	1.37E-03	1.11E-02	7.56E-03	2.97E-02	3.39E-02
2022	30	0.10	1.41	4.06	1.80E-02	0.16	0.11	0.38	0.43	6.73E-03	9.66E-02	2.79E-01	1.24E-03	1.11E-02	7.63E-03	2.59E-02	2.95E-02
2022	35	0.10	1.38	3.72	1.70E-02	0.17	0.12	0.33	0.38	7.08E-03	9.51E-02	2.56E-01	1.17E-03	1.15E-02	7.97E-03	2.26E-02	2.58E-02
2022	40	0.11	1.39	3.46	1.70E-02	0.18	0.13	0.29	0.33	7.76E-03	9.54E-02	2.37E-01	1.17E-03	1.22E-02	8.59E-03	1.99E-02	2.26E-02
2022	45	0.13	1.42	3.27	1.60E-02	0.19	0.14	0.26	0.29	8.66E-03	9.76E-02	2.25E-01	1.10E-03	1.31E-02	9.41E-03	1.77E-02	2.01E-02
2022	50	0.14	1.48	3.17	1.60E-02	0.21	0.15	0.23	0.26	9.82E-03	1.01E-01	2.18E-01	1.10E-03	1.42E-02	1.04E-02	1.59E-02	1.81E-02
2022	55	0.16	1.56	3.15	1.60E-02	0.23	0.17	0.22	0.25	1.13E-02	1.07E-01	2.16E-01	1.10E-03	1.57E-02	1.18E-02	1.48E-02	1.68E-02
2022	60	0.19	1.67	3.21	1.60E-02	0.25	0.20	0.21	0.23	1.30E-02	1.15E-01	2.20E-01	1.10E-03	1.74E-02	1.34E-02	1.42E-02	1.61E-02
2022	65	0.22	1.81	3.35	1.60E-02	0.28	0.22	0.20	0.23	1.50E-02	1.24E-01	2.30E-01	1.10E-03	1.94E-02	1.53E-02	1.40E-02	1.59E-02
2022	70	0.25	1.97	3.57	1.70E-02	0.32	0.25	0.21	0.24	1.72E-02	1.36E-01	2.45E-01	1.17E-03	2.16E-02	1.73E-02	1.44E-02	1.64E-02
2022	75	0.29	2.16	3.87	1.80E-02	0.35	0.29	0.22	0.25	1.98E-02	1.49E-01	2.66E-01	1.24E-03	2.42E-02	1.96E-02	1.53E-02	1.75E-02
2022	80	0.33	2.38	4.25	1.90E-02	0.39	0.32	0.25	0.28	2.26E-02	1.63E-01	2.92E-01	1.31E-03	2.70E-02	2.23E-02	1.68E-02	1.91E-02

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2023	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	8.06E-03	3.03E+00	9.05E+00	4.61E-03	8.06E-03	7.40E-03	5.60E-01	6.38E-01
2023	1	0.13	6.25	10.37	3.70E-02	0.19	0.14	3.15	3.58	9.23E-03	4.58E-01	7.59E-01	2.71E-03	1.39E-02	1.00E-02	2.30E-01	2.62E-01
2023	2	0.13	6.25	10.37	3.70E-02	0.19	0.14	3.15	3.58	9.23E-03	4.58E-01	7.59E-01	2.71E-03	1.39E-02	1.00E-02	2.30E-01	2.62E-01
2023	3	0.13	6.25	10.37	3.70E-02	0.19	0.14	3.15	3.58	9.23E-03	4.58E-01	7.59E-01	2.71E-03	1.39E-02	1.00E-02	2.30E-01	2.62E-01
2023	4	0.13	6.25	10.37	3.70E-02	0.19	0.14	3.15	3.58	9.23E-03	4.58E-01	7.59E-01	2.71E-03	1.39E-02	1.00E-02	2.30E-01	2.62E-01
2023	5	0.13	6.25	10.37	3.70E-02	0.19	0.14	3.15	3.58	9.23E-03	4.58E-01	7.59E-01	2.71E-03	1.39E-02	1.00E-02	2.30E-01	2.62E-01
2023	10	0.12	3.75	7.77	3.00E-02	0.18	0.13	1.72	1.95	8.50E-03	2.74E-01	5.69E-01	2.20E-03	1.32E-02	9.30E-03	1.26E-01	1.43E-01
2023	15	0.11	2.15	5.92	2.50E-02	0.17	0.12	0.82	0.94	7.69E-03	1.57E-01	4.34E-01	1.83E-03	1.24E-02	8.64E-03	6.01E-02	6.85E-02
2023	20	0.10	1.49	4.83	2.10E-02	0.16	0.11	0.48	0.55	7.03E-03	1.09E-01	3.54E-01	1.54E-03	1.17E-02	8.06E-03	3.54E-02	4.03E-02
2023	25	0.09	1.42	4.34	2.00E-02	0.16	0.11	0.42	0.48	6.88E-03	1.04E-01	3.18E-01	1.46E-03	1.16E-02	7.84E-03	3.08E-02	3.52E-02
2023	30	0.10	1.37	3.93	1.80E-02	0.16	0.11	0.37	0.42	6.96E-03	1.00E-01	2.88E-01	1.32E-03	1.16E-02	7.91E-03	2.69E-02	3.06E-02
2023	35	0.10	1.35	3.60	1.70E-02	0.16	0.11	0.32	0.37	7.32E-03	9.87E-02	2.64E-01	1.25E-03	1.20E-02	8.28E-03	2.35E-02	2.67E-02
2023	40	0.11	1.35	3.34	1.70E-02	0.17	0.12	0.28	0.32	7.98E-03	9.91E-02	2.45E-01	1.25E-03	1.27E-02	8.86E-03	2.07E-02	2.35E-02
2023	45	0.12	1.38	3.17	1.60E-02	0.19	0.13	0.25	0.29	8.94E-03	1.01E-01	2.32E-01	1.17E-03	1.36E-02	9.74E-03	1.83E-02	2.09E-02
2023	50	0.14	1.44	3.07	1.60E-02	0.20	0.15	0.23	0.26	1.02E-02	1.05E-01	2.25E-01	1.17E-03	1.49E-02	1.09E-02	1.66E-02	1.88E-02
2023	55	0.16	1.52	3.05	1.60E-02	0.22	0.17	0.21	0.24	1.16E-02	1.11E-01	2.23E-01	1.17E-03	1.63E-02	1.22E-02	1.53E-02	1.74E-02
2023	60	0.18	1.63	3.10	1.60E-02	0.25	0.19	0.20	0.23	1.35E-02	1.19E-01	2.27E-01	1.17E-03	1.82E-02	1.39E-02	1.46E-02	1.67E-02
2023	65	0.21	1.76	3.24	1.60E-02	0.28	0.22	0.20	0.23	1.55E-02	1.29E-01	2.37E-01	1.17E-03	2.02E-02	1.58E-02	1.46E-02	1.66E-02
2023	70	0.24	1.92	3.45	1.70E-02	0.31	0.25	0.20	0.23	1.79E-02	1.41E-01	2.53E-01	1.25E-03	2.26E-02	1.79E-02	1.49E-02	1.71E-02
2023	75	0.28	2.11	3.75	1.80E-02	0.34	0.28	0.22	0.25	2.05E-02	1.54E-01	2.74E-01	1.32E-03	2.52E-02	2.04E-02	1.60E-02	1.82E-02
2023	80	0.32	2.32	4.12	1.90E-02	0.38	0.32	0.24	0.27	2.34E-02	1.70E-01	3.01E-01	1.39E-03	2.81E-02	2.31E-02	1.74E-02	1.98E-02
2024	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	7.89E-03	2.97E+00	8.86E+00	4.52E-03	7.89E-03	7.24E-03	5.49E-01	6.25E-01
2024	1	0.12	6.07	9.99	3.70E-02	0.19	0.13	3.06	3.48	8.75E-03	4.35E-01	7.16E-01	2.65E-03	1.33E-02	9.54E-03	2.19E-01	2.49E-01
2024	2	0.12	6.07	9.99	3.70E-02	0.19	0.13	3.06	3.48	8.75E-03	4.35E-01	7.16E-01	2.65E-03	1.33E-02	9.54E-03	2.19E-01	2.49E-01
2024	3	0.12	6.07	9.99	3.70E-02	0.19	0.13	3.06	3.48	8.75E-03	4.35E-01	7.16E-01	2.65E-03	1.33E-02	9.54E-03	2.19E-01	2.49E-01
2024	4	0.12	6.07	9.99	3.70E-02	0.19	0.13	3.06	3.48	8.75E-03	4.35E-01	7.16E-01	2.65E-03	1.33E-02	9.54E-03	2.19E-01	2.49E-01
2024	5	0.12	6.07	9.99	3.70E-02	0.19	0.13	3.06	3.48	8.75E-03	4.35E-01	7.16E-01	2.65E-03	1.33E-02	9.54E-03	2.19E-01	2.49E-01
2024	10	0.11	3.64	7.49	3.00E-02	0.18	0.12	1.67	1.90	8.03E-03	2.61E-01	5.37E-01	2.15E-03	1.26E-02	8.89E-03	1.19E-01	1.36E-01
2024	15	0.10	2.09	5.70	2.50E-02	0.17	0.11	0.80	0.91	7.32E-03	1.50E-01	4.09E-01	1.79E-03	1.19E-02	8.18E-03	5.72E-02	6.51E-02
2024	20	0.09	1.45	4.65	2.10E-02	0.16	0.11	0.47	0.53	6.67E-03	1.04E-01	3.34E-01	1.51E-03	1.13E-02	7.67E-03	3.36E-02	3.83E-02
2024	25	0.09	1.38	4.18	2.00E-02	0.16	0.10	0.41	0.47	6.53E-03	9.87E-02	3.00E-01	1.43E-03	1.11E-02	7.46E-03	2.93E-02	3.34E-02
2024	30	0.09	1.33	3.79	1.80E-02	0.16	0.11	0.36	0.41	6.60E-03	9.54E-02	2.72E-01	1.29E-03	1.12E-02	7.53E-03	2.56E-02	2.91E-02
2024	35	0.10	1.31	3.47	1.70E-02	0.16	0.11	0.31	0.36	6.96E-03	9.39E-02	2.49E-01	1.22E-03	1.15E-02	7.89E-03	2.24E-02	2.55E-02
2024	40	0.11	1.31	3.22	1.70E-02	0.17	0.12	0.27	0.31	7.53E-03	9.42E-02	2.31E-01	1.22E-03	1.21E-02	8.46E-03	1.97E-02	2.24E-02
2024	45	0.12	1.34	3.05	1.60E-02	0.18	0.13	0.24	0.28	8.46E-03	9.63E-02	2.19E-01	1.15E-03	1.31E-02	9.25E-03	1.74E-02	1.99E-02
2024	50	0.13	1.40	2.96	1.60E-02	0.20	0.14	0.22	0.25	9.61E-03	1.00E-01	2.12E-01	1.15E-03	1.42E-02	1.03E-02	1.58E-02	1.79E-02
2024	55	0.15	1.48	2.94	1.60E-02	0.22	0.16	0.20	0.23	1.10E-02	1.06E-01	2.11E-01	1.15E-03	1.56E-02	1.16E-02	1.46E-02	1.66E-02
2024	60	0.18	1.58	2.99	1.60E-02	0.24	0.18	0.19	0.22	1.27E-02	1.13E-01	2.14E-01	1.15E-03	1.73E-02	1.32E-02	1.39E-02	1.59E-02
2024	65	0.21	1.71	3.12	1.60E-02	0.27	0.21	0.19	0.22	1.47E-02	1.23E-01	2.24E-01	1.15E-03	1.93E-02	1.50E-02	1.38E-02	1.57E-02
2024	70	0.24	1.87	3.33	1.70E-02	0.30	0.24	0.20	0.23	1.69E-02	1.34E-01	2.39E-01	1.22E-03	2.15E-02	1.71E-02	1.42E-02	1.62E-02
2024	75	0.27	2.05	3.61	1.80E-02	0.33	0.27	0.21	0.24	1.94E-02	1.47E-01	2.59E-01	1.29E-03	2.40E-02	1.94E-02	1.51E-02	1.72E-02
2024	80	0.31	2.25	3.96	1.90E-02	0.37	0.31	0.23	0.26	2.22E-02	1.61E-01	2.84E-01	1.36E-03	2.68E-02	2.19E-02	1.66E-02	1.89E-02

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2025	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	7.23E-03	2.72E+00	8.12E+00	4.14E-03	7.23E-03	6.64E-03	5.03E-01	5.73E-01
2025	1	0.12	5.87	9.57	3.70E-02	0.18	0.13	2.96	3.36	7.69E-03	3.86E-01	6.29E-01	2.43E-03	1.19E-02	8.48E-03	1.94E-01	2.21E-01
2025	2	0.12	5.87	9.57	3.70E-02	0.18	0.13	2.96	3.36	7.69E-03	3.86E-01	6.29E-01	2.43E-03	1.19E-02	8.48E-03	1.94E-01	2.21E-01
2025	3	0.12	5.87	9.57	3.70E-02	0.18	0.13	2.96	3.36	7.69E-03	3.86E-01	6.29E-01	2.43E-03	1.19E-02	8.48E-03	1.94E-01	2.21E-01
2025	4	0.12	5.87	9.57	3.70E-02	0.18	0.13	2.96	3.36	7.69E-03	3.86E-01	6.29E-01	2.43E-03	1.19E-02	8.48E-03	1.94E-01	2.21E-01
2025	5	0.12	5.87	9.57	3.70E-02	0.18	0.13	2.96	3.36	7.69E-03	3.86E-01	6.29E-01	2.43E-03	1.19E-02	8.48E-03	1.94E-01	2.21E-01
2025	10	0.11	3.52	7.17	3.00E-02	0.17	0.12	1.61	1.83	7.04E-03	2.31E-01	4.72E-01	1.97E-03	1.12E-02	7.89E-03	1.06E-01	1.21E-01
2025	15	0.10	2.02	5.46	2.50E-02	0.16	0.11	0.77	0.88	6.45E-03	1.33E-01	3.59E-01	1.64E-03	1.07E-02	7.30E-03	5.07E-02	5.77E-02
2025	20	0.09	1.40	4.46	2.10E-02	0.15	0.10	0.45	0.52	5.85E-03	9.20E-02	2.93E-01	1.38E-03	1.01E-02	6.77E-03	2.98E-02	3.39E-02
2025	25	0.09	1.33	4.01	2.00E-02	0.15	0.10	0.40	0.45	5.72E-03	8.75E-02	2.64E-01	1.32E-03	9.93E-03	6.64E-03	2.60E-02	2.97E-02
2025	30	0.09	1.29	3.63	1.80E-02	0.15	0.10	0.35	0.39	5.79E-03	8.46E-02	2.39E-01	1.18E-03	1.00E-02	6.71E-03	2.27E-02	2.58E-02
2025	35	0.09	1.27	3.32	1.70E-02	0.16	0.11	0.30	0.34	6.12E-03	8.32E-02	2.18E-01	1.12E-03	1.03E-02	7.04E-03	1.98E-02	2.26E-02
2025	40	0.10	1.27	3.09	1.70E-02	0.17	0.11	0.27	0.30	6.64E-03	8.35E-02	2.03E-01	1.12E-03	1.09E-02	7.50E-03	1.74E-02	1.98E-02
2025	45	0.11	1.30	2.92	1.60E-02	0.18	0.13	0.24	0.27	7.43E-03	8.54E-02	1.92E-01	1.05E-03	1.16E-02	8.22E-03	1.55E-02	1.76E-02
2025	50	0.13	1.35	2.83	1.60E-02	0.19	0.14	0.21	0.24	8.48E-03	8.88E-02	1.86E-01	1.05E-03	1.27E-02	9.14E-03	1.39E-02	1.59E-02
2025	55	0.15	1.43	2.81	1.60E-02	0.21	0.16	0.20	0.22	9.73E-03	9.38E-02	1.85E-01	1.05E-03	1.39E-02	1.03E-02	1.30E-02	1.47E-02
2025	60	0.17	1.53	2.87	1.60E-02	0.23	0.18	0.19	0.21	1.12E-02	1.00E-01	1.88E-01	1.05E-03	1.54E-02	1.17E-02	1.24E-02	1.41E-02
2025	65	0.20	1.65	2.99	1.60E-02	0.26	0.20	0.19	0.21	1.30E-02	1.09E-01	1.97E-01	1.05E-03	1.72E-02	1.33E-02	1.22E-02	1.39E-02
2025	70	0.23	1.80	3.19	1.70E-02	0.29	0.23	0.19	0.22	1.49E-02	1.19E-01	2.10E-01	1.12E-03	1.91E-02	1.51E-02	1.26E-02	1.43E-02
2025	75	0.26	1.98	3.46	1.80E-02	0.32	0.26	0.20	0.23	1.71E-02	1.30E-01	2.27E-01	1.18E-03	2.13E-02	1.71E-02	1.34E-02	1.53E-02
2025	80	0.30	2.18	3.80	1.90E-02	0.36	0.29	0.22	0.26	1.95E-02	1.43E-01	2.50E-01	1.25E-03	2.37E-02	1.93E-02	1.47E-02	1.68E-02
2026	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	6.20E-03	2.34E+00	6.96E+00	3.55E-03	6.20E-03	5.69E-03	4.31E-01	4.91E-01
2026	1	0.11	5.65	9.11	3.70E-02	0.18	0.12	2.84	3.24	6.31E-03	3.18E-01	5.13E-01	2.09E-03	9.92E-03	6.99E-03	1.60E-01	1.83E-01
2026	2	0.11	5.65	9.11	3.70E-02	0.18	0.12	2.84	3.24	6.31E-03	3.18E-01	5.13E-01	2.09E-03	9.92E-03	6.99E-03	1.60E-01	1.83E-01
2026	3	0.11	5.65	9.11	3.70E-02	0.18	0.12	2.84	3.24	6.31E-03	3.18E-01	5.13E-01	2.09E-03	9.92E-03	6.99E-03	1.60E-01	1.83E-01
2026	4	0.11	5.65	9.11	3.70E-02	0.18	0.12	2.84	3.24	6.31E-03	3.18E-01	5.13E-01	2.09E-03	9.92E-03	6.99E-03	1.60E-01	1.83E-01
2026	5	0.11	5.65	9.11	3.70E-02	0.18	0.12	2.84	3.24	6.31E-03	3.18E-01	5.13E-01	2.09E-03	9.92E-03	6.99E-03	1.60E-01	1.83E-01
2026	10	0.10	3.38	6.83	3.00E-02	0.17	0.12	1.55	1.77	5.81E-03	1.91E-01	3.85E-01	1.69E-03	9.41E-03	6.48E-03	8.74E-02	9.95E-02
2026	15	0.09	1.94	5.20	2.50E-02	0.16	0.11	0.74	0.85	5.24E-03	1.09E-01	2.93E-01	1.41E-03	8.85E-03	6.03E-03	4.18E-02	4.76E-02
2026	20	0.09	1.35	4.24	2.10E-02	0.15	0.10	0.44	0.50	4.85E-03	7.59E-02	2.39E-01	1.18E-03	8.46E-03	5.64E-03	2.46E-02	2.80E-02
2026	25	0.08	1.28	3.81	2.00E-02	0.15	0.10	0.38	0.43	4.68E-03	7.22E-02	2.15E-01	1.13E-03	8.29E-03	5.52E-03	2.15E-02	2.45E-02
2026	30	0.08	1.24	3.45	1.80E-02	0.15	0.10	0.33	0.38	4.74E-03	6.97E-02	1.95E-01	1.01E-03	8.34E-03	5.58E-03	1.87E-02	2.13E-02
2026	35	0.09	1.22	3.16	1.70E-02	0.15	0.10	0.29	0.33	5.02E-03	6.87E-02	1.78E-01	9.58E-04	8.62E-03	5.81E-03	1.63E-02	1.86E-02
2026	40	0.10	1.22	2.94	1.70E-02	0.16	0.11	0.26	0.29	5.47E-03	6.89E-02	1.66E-01	9.58E-04	9.08E-03	6.20E-03	1.44E-02	1.63E-02
2026	45	0.11	1.25	2.78	1.60E-02	0.17	0.12	0.23	0.26	6.09E-03	7.04E-02	1.57E-01	9.02E-04	9.70E-03	6.82E-03	1.27E-02	1.45E-02
2026	50	0.12	1.30	2.69	1.60E-02	0.19	0.13	0.20	0.23	6.93E-03	7.33E-02	1.52E-01	9.02E-04	1.05E-02	7.55E-03	1.15E-02	1.31E-02
2026	55	0.14	1.37	2.68	1.60E-02	0.21	0.15	0.19	0.22	7.95E-03	7.75E-02	1.51E-01	9.02E-04	1.16E-02	8.51E-03	1.07E-02	1.22E-02
2026	60	0.16	1.47	2.73	1.60E-02	0.23	0.17	0.18	0.21	9.19E-03	8.29E-02	1.54E-01	9.02E-04	1.28E-02	9.64E-03	1.02E-02	1.16E-02
2026	65	0.19	1.59	2.85	1.60E-02	0.25	0.19	0.18	0.20	1.06E-02	8.97E-02	1.60E-01	9.02E-04	1.42E-02	1.09E-02	1.01E-02	1.15E-02
2026	70	0.22	1.74	3.03	1.70E-02	0.28	0.22	0.19	0.21	1.22E-02	9.79E-02	1.71E-01	9.58E-04	1.58E-02	1.24E-02	1.04E-02	1.18E-02
2026	75	0.25	1.90	3.29	1.80E-02	0.31	0.25	0.20	0.22	1.40E-02	1.07E-01	1.85E-01	1.01E-03	1.76E-02	1.40E-02	1.11E-02	1.26E-02
2026	80	0.28	2.09	3.61	1.90E-02	0.35	0.28	0.22	0.25	1.60E-02	1.18E-01	2.04E-01	1.07E-03	1.96E-02	1.59E-02	1.21E-02	1.38E-02

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2027	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	5.05E-03	1.90E+00	5.67E+00	2.89E-03	5.05E-03	4.64E-03	3.51E-01	4.00E-01
2027	1	0.11	5.40	8.60	3.70E-02	0.17	0.12	2.72	3.10	4.86E-03	2.48E-01	3.95E-01	1.70E-03	7.80E-03	5.46E-03	1.25E-01	1.42E-01
2027	2	0.11	5.40	8.60	3.70E-02	0.17	0.12	2.72	3.10	4.86E-03	2.48E-01	3.95E-01	1.70E-03	7.80E-03	5.46E-03	1.25E-01	1.42E-01
2027	3	0.11	5.40	8.60	3.70E-02	0.17	0.12	2.72	3.10	4.86E-03	2.48E-01	3.95E-01	1.70E-03	7.80E-03	5.46E-03	1.25E-01	1.42E-01
2027	4	0.11	5.40	8.60	3.70E-02	0.17	0.12	2.72	3.10	4.86E-03	2.48E-01	3.95E-01	1.70E-03	7.80E-03	5.46E-03	1.25E-01	1.42E-01
2027	5	0.11	5.40	8.60	3.70E-02	0.17	0.12	2.72	3.10	4.86E-03	2.48E-01	3.95E-01	1.70E-03	7.80E-03	5.46E-03	1.25E-01	1.42E-01
2027	10	0.10	3.24	6.45	3.00E-02	0.16	0.11	1.49	1.69	4.45E-03	1.49E-01	2.96E-01	1.38E-03	7.39E-03	5.09E-03	6.82E-02	7.76E-02
2027	15	0.09	1.86	4.91	2.50E-02	0.15	0.10	0.71	0.81	4.08E-03	8.52E-02	2.25E-01	1.15E-03	7.02E-03	4.73E-03	3.26E-02	3.71E-02
2027	20	0.08	1.29	4.01	2.10E-02	0.15	0.10	0.42	0.48	3.72E-03	5.92E-02	1.84E-01	9.64E-04	6.65E-03	4.41E-03	1.92E-02	2.18E-02
2027	25	0.08	1.23	3.60	2.00E-02	0.14	0.09	0.37	0.42	3.63E-03	5.62E-02	1.65E-01	9.18E-04	6.56E-03	4.31E-03	1.68E-02	1.90E-02
2027	30	0.08	1.18	3.26	1.80E-02	0.14	0.10	0.32	0.36	3.67E-03	5.43E-02	1.50E-01	8.26E-04	6.61E-03	4.36E-03	1.46E-02	1.66E-02
2027	35	0.08	1.17	2.99	1.70E-02	0.15	0.10	0.28	0.32	3.86E-03	5.35E-02	1.37E-01	7.80E-04	6.79E-03	4.54E-03	1.28E-02	1.45E-02
2027	40	0.09	1.17	2.77	1.70E-02	0.16	0.11	0.24	0.28	4.22E-03	5.37E-02	1.27E-01	7.80E-04	7.16E-03	4.86E-03	1.12E-02	1.28E-02
2027	45	0.10	1.20	2.63	1.60E-02	0.17	0.12	0.22	0.25	4.73E-03	5.49E-02	1.21E-01	7.34E-04	7.66E-03	5.32E-03	9.96E-03	1.13E-02
2027	50	0.12	1.24	2.55	1.60E-02	0.18	0.13	0.20	0.22	5.37E-03	5.71E-02	1.17E-01	7.34E-04	8.31E-03	5.87E-03	9.00E-03	1.02E-02
2027	55	0.13	1.32	2.53	1.60E-02	0.20	0.14	0.18	0.21	6.15E-03	6.04E-02	1.16E-01	7.34E-04	9.09E-03	6.61E-03	8.31E-03	9.45E-03
2027	60	0.16	1.41	2.58	1.60E-02	0.22	0.16	0.17	0.20	7.11E-03	6.46E-02	1.18E-01	7.34E-04	1.01E-02	7.48E-03	7.94E-03	9.04E-03
2027	65	0.18	1.52	2.69	1.60E-02	0.24	0.19	0.17	0.20	8.17E-03	6.99E-02	1.23E-01	7.34E-04	1.11E-02	8.49E-03	7.89E-03	9.00E-03
2027	70	0.21	1.66	2.87	1.70E-02	0.27	0.21	0.18	0.20	9.41E-03	7.62E-02	1.31E-01	7.80E-04	1.23E-02	9.64E-03	8.12E-03	9.23E-03
2027	75	0.24	1.82	3.11	1.80E-02	0.30	0.24	0.19	0.21	1.08E-02	8.36E-02	1.43E-01	8.26E-04	1.38E-02	1.09E-02	8.63E-03	9.82E-03
2027	80	0.27	2.00	3.41	1.90E-02	0.33	0.27	0.21	0.24	1.23E-02	9.20E-02	1.57E-01	8.72E-04	1.53E-02	1.23E-02	9.45E-03	1.08E-02
2028	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	3.95E-03	1.49E+00	4.44E+00	2.26E-03	3.95E-03	3.63E-03	2.75E-01	3.13E-01
2028	1	0.10	5.14	8.05	3.70E-02	0.16	0.11	2.59	2.95	3.59E-03	1.85E-01	2.89E-01	1.33E-03	5.89E-03	4.06E-03	9.30E-02	1.06E-01
2028	2	0.10	5.14	8.05	3.70E-02	0.16	0.11	2.59	2.95	3.59E-03	1.85E-01	2.89E-01	1.33E-03	5.89E-03	4.06E-03	9.30E-02	1.06E-01
2028	3	0.10	5.14	8.05	3.70E-02	0.16	0.11	2.59	2.95	3.59E-03	1.85E-01	2.89E-01	1.33E-03	5.89E-03	4.06E-03	9.30E-02	1.06E-01
2028	4	0.10	5.14	8.05	3.70E-02	0.16	0.11	2.59	2.95	3.59E-03	1.85E-01	2.89E-01	1.33E-03	5.89E-03	4.06E-03	9.30E-02	1.06E-01
2028	5	0.10	5.14	8.05	3.70E-02	0.16	0.11	2.59	2.95	3.59E-03	1.85E-01	2.89E-01	1.33E-03	5.89E-03	4.06E-03	9.30E-02	1.06E-01
2028	10	0.09	3.08	6.04	3.00E-02	0.16	0.11	1.41	1.61	3.30E-03	1.11E-01	2.17E-01	1.08E-03	5.60E-03	3.77E-03	5.07E-02	5.77E-02
2028	15	0.08	1.77	4.60	2.50E-02	0.15	0.10	0.68	0.77	2.98E-03	6.34E-02	1.65E-01	8.98E-04	5.28E-03	3.52E-03	2.43E-02	2.77E-02
2028	20	0.08	1.23	3.75	2.10E-02	0.14	0.09	0.40	0.45	2.73E-03	4.40E-02	1.35E-01	7.54E-04	5.03E-03	3.27E-03	1.43E-02	1.63E-02
2028	25	0.07	1.17	3.37	2.00E-02	0.14	0.09	0.35	0.40	2.66E-03	4.19E-02	1.21E-01	7.18E-04	4.96E-03	3.20E-03	1.25E-02	1.42E-02
2028	30	0.08	1.13	3.05	1.80E-02	0.14	0.09	0.30	0.34	2.69E-03	4.05E-02	1.10E-01	6.46E-04	4.99E-03	3.23E-03	1.09E-02	1.24E-02
2028	35	0.08	1.11	2.80	1.70E-02	0.14	0.09	0.26	0.30	2.87E-03	3.98E-02	1.00E-01	6.10E-04	5.17E-03	3.38E-03	9.48E-03	1.08E-02
2028	40	0.09	1.11	2.60	1.70E-02	0.15	0.10	0.23	0.26	3.12E-03	4.00E-02	9.33E-02	6.10E-04	5.42E-03	3.63E-03	8.33E-03	9.48E-03
2028	45	0.10	1.14	2.46	1.60E-02	0.16	0.11	0.21	0.24	3.48E-03	4.08E-02	8.83E-02	5.75E-04	5.78E-03	3.95E-03	7.40E-03	8.44E-03
2028	50	0.11	1.18	2.38	1.60E-02	0.17	0.12	0.19	0.21	3.95E-03	4.25E-02	8.55E-02	5.75E-04	6.25E-03	4.38E-03	6.68E-03	7.61E-03
2028	55	0.13	1.25	2.37	1.60E-02	0.19	0.14	0.17	0.20	4.52E-03	4.49E-02	8.50E-02	5.75E-04	6.82E-03	4.92E-03	6.18E-03	7.04E-03
2028	60	0.15	1.34	2.41	1.60E-02	0.21	0.16	0.17	0.19	5.24E-03	4.81E-02	8.66E-02	5.75E-04	7.54E-03	5.57E-03	5.93E-03	6.75E-03
2028	65	0.17	1.45	2.52	1.60E-02	0.23	0.18	0.16	0.19	6.03E-03	5.20E-02	9.04E-02	5.75E-04	8.33E-03	6.32E-03	5.85E-03	6.68E-03
2028	70	0.19	1.58	2.68	1.70E-02	0.26	0.20	0.17	0.19	6.97E-03	5.67E-02	9.63E-02	6.10E-04	9.26E-03	7.15E-03	6.03E-03	6.89E-03
2028	75	0.22	1.73	2.91	1.80E-02	0.29	0.23	0.18	0.20	7.97E-03	6.22E-02	1.04E-01	6.46E-04	1.03E-02	8.08E-03	6.43E-03	7.33E-03
2028	80	0.25	1.91	3.20	1.90E-02	0.32	0.25	0.20	0.22	9.12E-03	6.84E-02	1.15E-01	6.82E-04	1.14E-02	9.12E-03	7.04E-03	8.01E-03

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2029	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	2.84E-03	1.07E+00	3.19E+00	1.63E-03	2.84E-03	2.61E-03	1.98E-01	2.25E-01
2029	1	0.09	4.85	7.45	3.70E-02	0.16	0.11	2.45	2.79	2.43E-03	1.25E-01	1.93E-01	9.56E-04	4.08E-03	2.76E-03	6.33E-02	7.20E-02
2029	2	0.09	4.85	7.45	3.70E-02	0.16	0.11	2.45	2.79	2.43E-03	1.25E-01	1.93E-01	9.56E-04	4.08E-03	2.76E-03	6.33E-02	7.20E-02
2029	3	0.09	4.85	7.45	3.70E-02	0.16	0.11	2.45	2.79	2.43E-03	1.25E-01	1.93E-01	9.56E-04	4.08E-03	2.76E-03	6.33E-02	7.20E-02
2029	4	0.09	4.85	7.45	3.70E-02	0.16	0.11	2.45	2.79	2.43E-03	1.25E-01	1.93E-01	9.56E-04	4.08E-03	2.76E-03	6.33E-02	7.20E-02
2029	5	0.09	4.85	7.45	3.70E-02	0.16	0.11	2.45	2.79	2.43E-03	1.25E-01	1.93E-01	9.56E-04	4.08E-03	2.76E-03	6.33E-02	7.20E-02
2029	10	0.09	2.91	5.59	3.00E-02	0.15	0.10	1.34	1.52	2.22E-03	7.52E-02	1.44E-01	7.75E-04	3.88E-03	2.58E-03	3.45E-02	3.93E-02
2029	15	0.08	1.67	4.26	2.50E-02	0.14	0.09	0.64	0.73	2.02E-03	4.31E-02	1.10E-01	6.46E-04	3.67E-03	2.40E-03	1.65E-02	1.88E-02
2029	20	0.07	1.16	3.47	2.10E-02	0.14	0.09	0.38	0.43	1.83E-03	2.99E-02	8.98E-02	5.43E-04	3.49E-03	2.25E-03	9.72E-03	1.11E-02
2029	25	0.07	1.10	3.12	2.00E-02	0.13	0.09	0.33	0.37	1.78E-03	2.84E-02	8.07E-02	5.17E-04	3.44E-03	2.20E-03	8.48E-03	9.64E-03
2029	30	0.07	1.06	2.83	1.80E-02	0.13	0.09	0.29	0.33	1.81E-03	2.75E-02	7.30E-02	4.65E-04	3.46E-03	2.22E-03	7.39E-03	8.40E-03
2029	35	0.07	1.05	2.59	1.70E-02	0.14	0.09	0.25	0.28	1.91E-03	2.71E-02	6.68E-02	4.39E-04	3.57E-03	2.30E-03	6.46E-03	7.34E-03
2029	40	0.08	1.05	2.40	1.70E-02	0.15	0.10	0.22	0.25	2.09E-03	2.72E-02	6.21E-02	4.39E-04	3.75E-03	2.45E-03	5.66E-03	6.46E-03
2029	45	0.09	1.07	2.28	1.60E-02	0.15	0.10	0.20	0.22	2.33E-03	2.78E-02	5.88E-02	4.13E-04	3.98E-03	2.69E-03	5.04E-03	5.74E-03
2029	50	0.10	1.12	2.21	1.60E-02	0.17	0.12	0.18	0.20	2.66E-03	2.89E-02	5.70E-02	4.13E-04	4.32E-03	2.97E-03	4.55E-03	5.17E-03
2029	55	0.12	1.18	2.19	1.60E-02	0.18	0.13	0.16	0.19	3.05E-03	3.05E-02	5.66E-02	4.13E-04	4.70E-03	3.33E-03	4.21E-03	4.81E-03
2029	60	0.14	1.27	2.23	1.60E-02	0.20	0.15	0.16	0.18	3.51E-03	3.27E-02	5.77E-02	4.13E-04	5.17E-03	3.77E-03	4.03E-03	4.57E-03
2029	65	0.16	1.37	2.33	1.60E-02	0.22	0.17	0.15	0.18	4.06E-03	3.54E-02	6.02E-02	4.13E-04	5.71E-03	4.26E-03	3.98E-03	4.55E-03
2029	70	0.18	1.49	2.48	1.70E-02	0.25	0.19	0.16	0.18	4.68E-03	3.86E-02	6.42E-02	4.39E-04	6.33E-03	4.83E-03	4.11E-03	4.68E-03
2029	75	0.21	1.64	2.69	1.80E-02	0.27	0.21	0.17	0.19	5.35E-03	4.23E-02	6.96E-02	4.65E-04	7.00E-03	5.48E-03	4.37E-03	4.99E-03
2029	80	0.24	1.80	2.96	1.90E-02	0.30	0.24	0.19	0.21	6.12E-03	4.65E-02	7.65E-02	4.91E-04	7.78E-03	6.18E-03	4.78E-03	5.45E-03
2030	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	1.78E-03	6.72E-01	2.00E+00	1.02E-03	1.78E-03	1.64E-03	1.24E-01	1.41E-01
2030	1	0.09	4.55	6.81	3.70E-02	0.15	0.10	2.29	2.61	1.39E-03	7.37E-02	1.10E-01	6.00E-04	2.43E-03	1.62E-03	3.72E-02	4.24E-02
2030	2	0.09	4.55	6.81	3.70E-02	0.15	0.10	2.29	2.61	1.39E-03	7.37E-02	1.10E-01	6.00E-04	2.43E-03	1.62E-03	3.72E-02	4.24E-02
2030	3	0.09	4.55	6.81	3.70E-02	0.15	0.10	2.29	2.61	1.39E-03	7.37E-02	1.10E-01	6.00E-04	2.43E-03	1.62E-03	3.72E-02	4.24E-02
2030	4	0.09	4.55	6.81	3.70E-02	0.15	0.10	2.29	2.61	1.39E-03	7.37E-02	1.10E-01	6.00E-04	2.43E-03	1.62E-03	3.72E-02	4.24E-02
2030	5	0.09	4.55	6.81	3.70E-02	0.15	0.10	2.29	2.61	1.39E-03	7.37E-02	1.10E-01	6.00E-04	2.43E-03	1.62E-03	3.72E-02	4.24E-02
2030	10	0.08	2.73	5.11	3.00E-02	0.14	0.09	1.25	1.42	1.28E-03	4.42E-02	8.28E-02	4.86E-04	2.32E-03	1.52E-03	2.03E-02	2.31E-02
2030	15	0.07	1.56	3.89	2.50E-02	0.14	0.09	0.60	0.68	1.17E-03	2.53E-02	6.31E-02	4.05E-04	2.21E-03	1.41E-03	9.71E-03	1.10E-02
2030	20	0.07	1.08	3.18	2.10E-02	0.13	0.08	0.35	0.40	1.07E-03	1.76E-02	5.15E-02	3.41E-04	2.11E-03	1.33E-03	5.71E-03	6.50E-03
2030	25	0.06	1.03	2.85	2.00E-02	0.13	0.08	0.31	0.35	1.04E-03	1.67E-02	4.63E-02	3.24E-04	2.08E-03	1.30E-03	4.98E-03	5.68E-03
2030	30	0.07	1.00	2.58	1.80E-02	0.13	0.08	0.27	0.31	1.05E-03	1.62E-02	4.19E-02	2.92E-04	2.09E-03	1.31E-03	4.35E-03	4.95E-03
2030	35	0.07	0.98	2.36	1.70E-02	0.13	0.08	0.23	0.27	1.10E-03	1.59E-02	3.83E-02	2.76E-04	2.14E-03	1.36E-03	3.79E-03	4.31E-03
2030	40	0.08	0.98	2.20	1.70E-02	0.14	0.09	0.21	0.23	1.22E-03	1.60E-02	3.56E-02	2.76E-04	2.25E-03	1.46E-03	3.32E-03	3.79E-03
2030	45	0.08	1.01	2.08	1.60E-02	0.15	0.10	0.18	0.21	1.35E-03	1.63E-02	3.37E-02	2.59E-04	2.38E-03	1.59E-03	2.95E-03	3.37E-03
2030	50	0.10	1.05	2.02	1.60E-02	0.16	0.11	0.17	0.19	1.54E-03	1.70E-02	3.27E-02	2.59E-04	2.58E-03	1.75E-03	2.68E-03	3.05E-03
2030	55	0.11	1.11	2.00	1.60E-02	0.17	0.12	0.15	0.17	1.77E-03	1.79E-02	3.25E-02	2.59E-04	2.81E-03	1.96E-03	2.48E-03	2.82E-03
2030	60	0.13	1.19	2.04	1.60E-02	0.19	0.14	0.15	0.17	2.03E-03	1.92E-02	3.31E-02	2.59E-04	3.06E-03	2.21E-03	2.37E-03	2.69E-03
2030	65	0.15	1.28	2.13	1.60E-02	0.21	0.15	0.15	0.17	2.35E-03	2.08E-02	3.45E-02	2.59E-04	3.39E-03	2.50E-03	2.35E-03	2.68E-03
2030	70	0.17	1.40	2.27	1.70E-02	0.23	0.17	0.15	0.17	2.71E-03	2.27E-02	3.68E-02	2.76E-04	3.75E-03	2.82E-03	2.42E-03	2.76E-03
2030	75	0.19	1.53	2.46	1.80E-02	0.26	0.20	0.16	0.18	3.10E-03	2.49E-02	3.99E-02	2.92E-04	4.13E-03	3.19E-03	2.58E-03	2.93E-03
2030	80	0.22	1.69	2.70	1.90E-02	0.28	0.22	0.17	0.20	3.53E-03	2.73E-02	4.38E-02	3.08E-04	4.57E-03	3.60E-03	2.82E-03	3.21E-03

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2031	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	9.75E-04	3.67E-01	1.09E+00	5.58E-04	9.75E-04	8.95E-04	6.78E-02	7.72E-02
2031	1	0.08	4.22	6.13	3.70E-02	0.14	0.09	2.13	2.43	7.00E-04	3.74E-02	5.43E-02	3.28E-04	1.27E-03	8.24E-04	1.89E-02	2.15E-02
2031	2	0.08	4.22	6.13	3.70E-02	0.14	0.09	2.13	2.43	7.00E-04	3.74E-02	5.43E-02	3.28E-04	1.27E-03	8.24E-04	1.89E-02	2.15E-02
2031	3	0.08	4.22	6.13	3.70E-02	0.14	0.09	2.13	2.43	7.00E-04	3.74E-02	5.43E-02	3.28E-04	1.27E-03	8.24E-04	1.89E-02	2.15E-02
2031	4	0.08	4.22	6.13	3.70E-02	0.14	0.09	2.13	2.43	7.00E-04	3.74E-02	5.43E-02	3.28E-04	1.27E-03	8.24E-04	1.89E-02	2.15E-02
2031	5	0.08	4.22	6.13	3.70E-02	0.14	0.09	2.13	2.43	7.00E-04	3.74E-02	5.43E-02	3.28E-04	1.27E-03	8.24E-04	1.89E-02	2.15E-02
2031	10	0.07	2.53	4.60	3.00E-02	0.14	0.09	1.16	1.32	6.38E-04	2.24E-02	4.07E-02	2.66E-04	1.21E-03	7.71E-04	1.03E-02	1.17E-02
2031	15	0.07	1.45	3.50	2.50E-02	0.13	0.08	0.56	0.63	5.76E-04	1.28E-02	3.10E-02	2.22E-04	1.14E-03	7.18E-04	4.93E-03	5.61E-03
2031	20	0.06	1.01	2.86	2.10E-02	0.12	0.08	0.33	0.37	5.32E-04	8.91E-03	2.53E-02	1.86E-04	1.10E-03	6.73E-04	2.90E-03	3.30E-03
2031	25	0.06	0.96	2.57	2.00E-02	0.12	0.08	0.29	0.33	5.14E-04	8.48E-03	2.27E-02	1.77E-04	1.08E-03	6.65E-04	2.53E-03	2.88E-03
2031	30	0.06	0.93	2.32	1.80E-02	0.12	0.08	0.25	0.28	5.23E-04	8.20E-03	2.06E-02	1.60E-04	1.09E-03	6.65E-04	2.21E-03	2.51E-03
2031	35	0.06	0.91	2.13	1.70E-02	0.13	0.08	0.22	0.25	5.49E-04	8.06E-03	1.88E-02	1.51E-04	1.12E-03	6.91E-04	1.92E-03	2.19E-03
2031	40	0.07	0.91	1.98	1.70E-02	0.13	0.08	0.19	0.22	6.03E-04	8.09E-03	1.75E-02	1.51E-04	1.17E-03	7.44E-04	1.69E-03	1.92E-03
2031	45	0.08	0.93	1.87	1.60E-02	0.14	0.09	0.17	0.19	6.73E-04	8.28E-03	1.66E-02	1.42E-04	1.24E-03	8.06E-04	1.50E-03	1.71E-03
2031	50	0.09	0.97	1.81	1.60E-02	0.15	0.10	0.15	0.17	7.62E-04	8.61E-03	1.61E-02	1.42E-04	1.33E-03	8.86E-04	1.36E-03	1.54E-03
2031	55	0.10	1.03	1.80	1.60E-02	0.16	0.11	0.14	0.16	8.77E-04	9.10E-03	1.60E-02	1.42E-04	1.44E-03	9.93E-04	1.26E-03	1.43E-03
2031	60	0.11	1.10	1.84	1.60E-02	0.18	0.13	0.14	0.15	1.01E-03	9.75E-03	1.63E-02	1.42E-04	1.58E-03	1.12E-03	1.21E-03	1.36E-03
2031	65	0.13	1.19	1.92	1.60E-02	0.20	0.14	0.13	0.15	1.17E-03	1.05E-02	1.70E-02	1.42E-04	1.74E-03	1.26E-03	1.19E-03	1.36E-03
2031	70	0.15	1.30	2.04	1.70E-02	0.22	0.16	0.14	0.16	1.35E-03	1.15E-02	1.81E-02	1.51E-04	1.91E-03	1.43E-03	1.22E-03	1.39E-03
2031	75	0.17	1.42	2.21	1.80E-02	0.24	0.18	0.15	0.17	1.54E-03	1.26E-02	1.96E-02	1.60E-04	2.11E-03	1.60E-03	1.30E-03	1.49E-03
2031	80	0.20	1.57	2.43	1.90E-02	0.26	0.20	0.16	0.18	1.76E-03	1.39E-02	2.16E-02	1.68E-04	2.33E-03	1.81E-03	1.43E-03	1.63E-03
2032	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	6.76E-04	2.55E-01	7.60E-01	3.87E-04	6.76E-04	6.21E-04	4.71E-02	5.36E-02
2032	1	0.07	3.88	5.41	3.70E-02	0.14	0.09	1.96	2.23	4.37E-04	2.38E-02	3.33E-02	2.28E-04	8.30E-04	5.29E-04	1.20E-02	1.37E-02
2032	2	0.07	3.88	5.41	3.70E-02	0.14	0.09	1.96	2.23	4.37E-04	2.38E-02	3.33E-02	2.28E-04	8.30E-04	5.29E-04	1.20E-02	1.37E-02
2032	3	0.07	3.88	5.41	3.70E-02	0.14	0.09	1.96	2.23	4.37E-04	2.38E-02	3.33E-02	2.28E-04	8.30E-04	5.29E-04	1.20E-02	1.37E-02
2032	4	0.07	3.88	5.41	3.70E-02	0.14	0.09	1.96	2.23	4.37E-04	2.38E-02	3.33E-02	2.28E-04	8.30E-04	5.29E-04	1.20E-02	1.37E-02
2032	5	0.07	3.88	5.41	3.70E-02	0.14	0.09	1.96	2.23	4.37E-04	2.38E-02	3.33E-02	2.28E-04	8.30E-04	5.29E-04	1.20E-02	1.37E-02
2032	10	0.07	2.32	4.06	3.00E-02	0.13	0.08	1.07	1.22	4.00E-04	1.43E-02	2.49E-02	1.84E-04	7.93E-04	4.92E-04	6.56E-03	7.47E-03
2032	15	0.06	1.33	3.09	2.50E-02	0.12	0.08	0.51	0.58	3.63E-04	8.19E-03	1.90E-02	1.54E-04	7.56E-04	4.61E-04	3.14E-03	3.57E-03
2032	20	0.05	0.92	2.52	2.10E-02	0.12	0.07	0.30	0.34	3.32E-04	5.68E-03	1.55E-02	1.29E-04	7.26E-04	4.37E-04	1.84E-03	2.10E-03
2032	25	0.05	0.88	2.27	2.00E-02	0.12	0.07	0.26	0.30	3.20E-04	5.40E-03	1.39E-02	1.23E-04	7.13E-04	4.24E-04	1.61E-03	1.83E-03
2032	30	0.05	0.85	2.05	1.80E-02	0.12	0.07	0.23	0.26	3.26E-04	5.22E-03	1.26E-02	1.11E-04	7.19E-04	4.30E-04	1.41E-03	1.60E-03
2032	35	0.06	0.84	1.88	1.70E-02	0.12	0.07	0.20	0.23	3.44E-04	5.14E-03	1.15E-02	1.05E-04	7.38E-04	4.43E-04	1.23E-03	1.40E-03
2032	40	0.06	0.84	1.75	1.70E-02	0.13	0.08	0.18	0.20	3.75E-04	5.16E-03	1.07E-02	1.05E-04	7.69E-04	4.73E-04	1.08E-03	1.23E-03
2032	45	0.07	0.86	1.65	1.60E-02	0.13	0.08	0.16	0.18	4.18E-04	5.28E-03	1.02E-02	9.84E-05	8.12E-04	5.17E-04	9.59E-04	1.09E-03
2032	50	0.08	0.89	1.60	1.60E-02	0.14	0.09	0.14	0.16	4.73E-04	5.48E-03	9.84E-03	9.84E-05	8.67E-04	5.66E-04	8.67E-04	9.84E-04
2032	55	0.09	0.94	1.59	1.60E-02	0.15	0.10	0.13	0.15	5.47E-04	5.80E-03	9.78E-03	9.84E-05	9.41E-04	6.33E-04	7.99E-04	9.10E-04
2032	60	0.10	1.01	1.62	1.60E-02	0.17	0.12	0.13	0.14	6.33E-04	6.21E-03	9.96E-03	9.84E-05	1.03E-03	7.07E-04	7.69E-04	8.73E-04
2032	65	0.12	1.09	1.69	1.60E-02	0.18	0.13	0.12	0.14	7.26E-04	6.72E-03	1.04E-02	9.84E-05	1.12E-03	7.99E-04	7.56E-04	8.67E-04
2032	70	0.14	1.19	1.80	1.70E-02	0.20	0.15	0.13	0.15	8.36E-04	7.32E-03	1.11E-02	1.05E-04	1.23E-03	8.98E-04	7.81E-04	8.92E-04
2032	75	0.16	1.31	1.95	1.80E-02	0.22	0.17	0.14	0.15	9.59E-04	8.03E-03	1.20E-02	1.11E-04	1.35E-03	1.01E-03	8.30E-04	9.47E-04
2032	80	0.18	1.44	2.15	1.90E-02	0.24	0.19	0.15	0.17	1.09E-03	8.84E-03	1.32E-02	1.17E-04	1.49E-03	1.14E-03	9.10E-04	1.04E-03

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2033	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	6.27E-04	2.36E-01	7.05E-01	3.59E-04	6.27E-04	5.76E-04	4.36E-02	4.97E-02
2033	1	0.06	3.52	4.67	3.70E-02	0.13	0.08	1.78	2.03	3.54E-04	2.01E-02	2.66E-02	2.11E-04	7.19E-04	4.45E-04	1.01E-02	1.16E-02
2033	2	0.06	3.52	4.67	3.70E-02	0.13	0.08	1.78	2.03	3.54E-04	2.01E-02	2.66E-02	2.11E-04	7.19E-04	4.45E-04	1.01E-02	1.16E-02
2033	3	0.06	3.52	4.67	3.70E-02	0.13	0.08	1.78	2.03	3.54E-04	2.01E-02	2.66E-02	2.11E-04	7.19E-04	4.45E-04	1.01E-02	1.16E-02
2033	4	0.06	3.52	4.67	3.70E-02	0.13	0.08	1.78	2.03	3.54E-04	2.01E-02	2.66E-02	2.11E-04	7.19E-04	4.45E-04	1.01E-02	1.16E-02
2033	5	0.06	3.52	4.67	3.70E-02	0.13	0.08	1.78	2.03	3.54E-04	2.01E-02	2.66E-02	2.11E-04	7.19E-04	4.45E-04	1.01E-02	1.16E-02
2033	10	0.06	2.11	3.50	3.00E-02	0.12	0.07	0.97	1.10	3.25E-04	1.20E-02	2.00E-02	1.71E-04	6.90E-04	4.16E-04	5.53E-03	6.30E-03
2033	15	0.05	1.21	2.67	2.50E-02	0.12	0.07	0.46	0.53	2.97E-04	6.90E-03	1.52E-02	1.43E-04	6.62E-04	3.94E-04	2.65E-03	3.01E-03
2033	20	0.05	0.84	2.18	2.10E-02	0.11	0.07	0.27	0.31	2.68E-04	4.79E-03	1.24E-02	1.20E-04	6.33E-04	3.71E-04	1.56E-03	1.77E-03
2033	25	0.05	0.80	1.96	2.00E-02	0.11	0.06	0.24	0.27	2.62E-04	4.55E-03	1.12E-02	1.14E-04	6.27E-04	3.59E-04	1.36E-03	1.55E-03
2033	30	0.05	0.77	1.77	1.80E-02	0.11	0.06	0.21	0.24	2.68E-04	4.40E-03	1.01E-02	1.03E-04	6.33E-04	3.65E-04	1.19E-03	1.35E-03
2033	35	0.05	0.76	1.62	1.70E-02	0.11	0.07	0.18	0.21	2.79E-04	4.33E-03	9.24E-03	9.70E-05	6.45E-04	3.76E-04	1.03E-03	1.18E-03
2033	40	0.05	0.76	1.51	1.70E-02	0.12	0.07	0.16	0.18	3.08E-04	4.35E-03	8.58E-03	9.70E-05	6.73E-04	3.99E-04	9.07E-04	1.03E-03
2033	45	0.06	0.78	1.43	1.60E-02	0.12	0.08	0.14	0.16	3.42E-04	4.44E-03	8.13E-03	9.13E-05	7.07E-04	4.33E-04	8.04E-04	9.18E-04
2033	50	0.07	0.81	1.38	1.60E-02	0.13	0.08	0.13	0.15	3.88E-04	4.62E-03	7.88E-03	9.13E-05	7.53E-04	4.79E-04	7.30E-04	8.33E-04
2033	55	0.08	0.86	1.37	1.60E-02	0.14	0.09	0.12	0.14	4.45E-04	4.88E-03	7.82E-03	9.13E-05	8.10E-04	5.30E-04	6.73E-04	7.70E-04
2033	60	0.09	0.92	1.40	1.60E-02	0.15	0.10	0.11	0.13	5.13E-04	5.23E-03	7.97E-03	9.13E-05	8.78E-04	5.93E-04	6.45E-04	7.36E-04
2033	65	0.10	0.99	1.46	1.60E-02	0.17	0.12	0.11	0.13	5.93E-04	5.66E-03	8.32E-03	9.13E-05	9.58E-04	6.67E-04	6.39E-04	7.30E-04
2033	70	0.12	1.08	1.55	1.70E-02	0.18	0.13	0.12	0.13	6.84E-04	6.17E-03	8.86E-03	9.70E-05	1.05E-03	7.47E-04	6.56E-04	7.47E-04
2033	75	0.14	1.19	1.69	1.80E-02	0.20	0.15	0.12	0.14	7.87E-04	6.76E-03	9.62E-03	1.03E-04	1.15E-03	8.44E-04	7.02E-04	7.99E-04
2033	80	0.16	1.31	1.85	1.90E-02	0.22	0.17	0.14	0.15	8.96E-04	7.44E-03	1.06E-02	1.08E-04	1.26E-03	9.47E-04	7.70E-04	8.73E-04
2034	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	5.27E-04	1.98E-01	5.91E-01	3.02E-04	5.27E-04	4.83E-04	3.66E-02	4.17E-02
2034	1	0.05	3.16	3.91	3.70E-02	0.12	0.07	1.60	1.82	2.58E-04	1.51E-02	1.87E-02	1.77E-04	5.65E-04	3.35E-04	7.65E-03	8.71E-03
2034	2	0.05	3.16	3.91	3.70E-02	0.12	0.07	1.60	1.82	2.58E-04	1.51E-02	1.87E-02	1.77E-04	5.65E-04	3.35E-04	7.65E-03	8.71E-03
2034	3	0.05	3.16	3.91	3.70E-02	0.12	0.07	1.60	1.82	2.58E-04	1.51E-02	1.87E-02	1.77E-04	5.65E-04	3.35E-04	7.65E-03	8.71E-03
2034	4	0.05	3.16	3.91	3.70E-02	0.12	0.07	1.60	1.82	2.58E-04	1.51E-02	1.87E-02	1.77E-04	5.65E-04	3.35E-04	7.65E-03	8.71E-03
2034	5	0.05	3.16	3.91	3.70E-02	0.12	0.07	1.60	1.82	2.58E-04	1.51E-02	1.87E-02	1.77E-04	5.65E-04	3.35E-04	7.65E-03	8.71E-03
2034	10	0.05	1.89	2.93	3.00E-02	0.11	0.07	0.87	0.99	2.35E-04	9.07E-03	1.40E-02	1.44E-04	5.41E-04	3.16E-04	4.17E-03	4.75E-03
2034	15	0.05	1.09	2.24	2.50E-02	0.11	0.06	0.42	0.48	2.15E-04	5.20E-03	1.07E-02	1.20E-04	5.22E-04	2.97E-04	2.00E-03	2.27E-03
2034	20	0.04	0.75	1.82	2.10E-02	0.11	0.06	0.25	0.28	1.96E-04	3.60E-03	8.73E-03	1.01E-04	5.03E-04	2.82E-04	1.17E-03	1.34E-03
2034	25	0.04	0.72	1.64	2.00E-02	0.10	0.06	0.21	0.24	1.91E-04	3.43E-03	7.85E-03	9.57E-05	4.98E-04	2.78E-04	1.02E-03	1.17E-03
2034	30	0.04	0.69	1.48	1.80E-02	0.10	0.06	0.19	0.21	1.91E-04	3.31E-03	7.10E-03	8.62E-05	4.98E-04	2.78E-04	8.95E-04	1.01E-03
2034	35	0.04	0.68	1.36	1.70E-02	0.11	0.06	0.16	0.19	2.06E-04	3.26E-03	6.50E-03	8.14E-05	5.12E-04	2.87E-04	7.80E-04	8.90E-04
2034	40	0.05	0.68	1.26	1.70E-02	0.11	0.06	0.14	0.16	2.20E-04	3.27E-03	6.04E-03	8.14E-05	5.27E-04	3.06E-04	6.85E-04	7.80E-04
2034	45	0.05	0.70	1.20	1.60E-02	0.12	0.07	0.13	0.15	2.49E-04	3.35E-03	5.72E-03	7.66E-05	5.55E-04	3.30E-04	6.08E-04	6.94E-04
2034	50	0.06	0.73	1.16	1.60E-02	0.12	0.08	0.12	0.13	2.82E-04	3.48E-03	5.54E-03	7.66E-05	5.89E-04	3.59E-04	5.51E-04	6.27E-04
2034	55	0.07	0.77	1.15	1.60E-02	0.13	0.08	0.11	0.12	3.26E-04	3.68E-03	5.51E-03	7.66E-05	6.32E-04	3.97E-04	5.07E-04	5.79E-04
2034	60	0.08	0.82	1.17	1.60E-02	0.14	0.09	0.10	0.12	3.73E-04	3.94E-03	5.61E-03	7.66E-05	6.80E-04	4.45E-04	4.88E-04	5.55E-04
2034	65	0.09	0.89	1.22	1.60E-02	0.15	0.10	0.10	0.12	4.31E-04	4.27E-03	5.85E-03	7.66E-05	7.37E-04	4.98E-04	4.83E-04	5.51E-04
2034	70	0.10	0.97	1.30	1.70E-02	0.17	0.12	0.10	0.12	4.98E-04	4.65E-03	6.24E-03	8.14E-05	8.04E-04	5.55E-04	4.98E-04	5.65E-04
2034	75	0.12	1.07	1.41	1.80E-02	0.18	0.13	0.11	0.13	5.70E-04	5.10E-03	6.77E-03	8.62E-05	8.76E-04	6.22E-04	5.27E-04	6.03E-04
2034	80	0.14	1.17	1.55	1.90E-02	0.20	0.15	0.12	0.14	6.51E-04	5.61E-03	7.43E-03	9.10E-05	9.57E-04	6.99E-04	5.79E-04	6.61E-04

Table C.2-2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG (Running Exhaust)	TOG	DPM	CO	NO _x	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
2035	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	5.09E-04	1.92E-01	5.71E-01	2.91E-04	5.09E-04	4.67E-04	3.54E-02	4.03E-02
2035	1	0.05	2.80	3.17	3.70E-02	0.11	0.06	1.42	1.62	2.08E-04	1.30E-02	1.47E-02	1.71E-04	5.04E-04	2.91E-04	6.56E-03	7.48E-03
2035	2	0.05	2.80	3.17	3.70E-02	0.11	0.06	1.42	1.62	2.08E-04	1.30E-02	1.47E-02	1.71E-04	5.04E-04	2.91E-04	6.56E-03	7.48E-03
2035	3	0.05	2.80	3.17	3.70E-02	0.11	0.06	1.42	1.62	2.08E-04	1.30E-02	1.47E-02	1.71E-04	5.04E-04	2.91E-04	6.56E-03	7.48E-03
2035	4	0.05	2.80	3.17	3.70E-02	0.11	0.06	1.42	1.62	2.08E-04	1.30E-02	1.47E-02	1.71E-04	5.04E-04	2.91E-04	6.56E-03	7.48E-03
2035	5	0.05	2.80	3.17	3.70E-02	0.11	0.06	1.42	1.62	2.08E-04	1.30E-02	1.47E-02	1.71E-04	5.04E-04	2.91E-04	6.56E-03	7.48E-03
2035	10	0.04	1.68	2.38	3.00E-02	0.11	0.06	0.77	0.88	1.94E-04	7.77E-03	1.10E-02	1.39E-04	4.90E-04	2.73E-04	3.58E-03	4.07E-03
2035	15	0.04	0.96	1.81	2.50E-02	0.10	0.06	0.37	0.42	1.76E-04	4.46E-03	8.38E-03	1.16E-04	4.72E-04	2.59E-04	1.72E-03	1.95E-03
2035	20	0.04	0.67	1.48	2.10E-02	0.10	0.05	0.22	0.25	1.62E-04	3.09E-03	6.83E-03	9.71E-05	4.58E-04	2.45E-04	1.01E-03	1.15E-03
2035	25	0.03	0.64	1.33	2.00E-02	0.10	0.05	0.19	0.22	1.57E-04	2.94E-03	6.14E-03	9.25E-05	4.53E-04	2.40E-04	8.78E-04	1.00E-03
2035	30	0.03	0.62	1.20	1.80E-02	0.10	0.05	0.17	0.19	1.57E-04	2.84E-03	5.56E-03	8.32E-05	4.53E-04	2.40E-04	7.67E-04	8.74E-04
2035	35	0.04	0.61	1.10	1.70E-02	0.10	0.05	0.15	0.17	1.66E-04	2.80E-03	5.09E-03	7.86E-05	4.62E-04	2.50E-04	6.70E-04	7.63E-04
2035	40	0.04	0.61	1.02	1.70E-02	0.10	0.06	0.13	0.15	1.80E-04	2.81E-03	4.73E-03	7.86E-05	4.76E-04	2.64E-04	5.87E-04	6.70E-04
2035	45	0.04	0.62	0.97	1.60E-02	0.11	0.06	0.11	0.13	2.03E-04	2.87E-03	4.48E-03	7.40E-05	4.99E-04	2.82E-04	5.22E-04	5.96E-04
2035	50	0.05	0.65	0.94	1.60E-02	0.11	0.07	0.10	0.12	2.31E-04	2.99E-03	4.34E-03	7.40E-05	5.27E-04	3.10E-04	4.72E-04	5.36E-04
2035	55	0.06	0.68	0.93	1.60E-02	0.12	0.07	0.10	0.11	2.64E-04	3.15E-03	4.31E-03	7.40E-05	5.59E-04	3.42E-04	4.39E-04	4.99E-04
2035	60	0.07	0.73	0.95	1.60E-02	0.13	0.08	0.09	0.10	3.05E-04	3.38E-03	4.39E-03	7.40E-05	6.01E-04	3.79E-04	4.16E-04	4.76E-04
2035	65	0.08	0.79	0.99	1.60E-02	0.14	0.09	0.09	0.10	3.51E-04	3.66E-03	4.58E-03	7.40E-05	6.47E-04	4.21E-04	4.16E-04	4.72E-04
2035	70	0.09	0.86	1.06	1.70E-02	0.15	0.10	0.09	0.11	4.07E-04	3.98E-03	4.89E-03	7.86E-05	7.03E-04	4.72E-04	4.25E-04	4.85E-04
2035	75	0.10	0.95	1.15	1.80E-02	0.17	0.11	0.10	0.11	4.67E-04	4.37E-03	5.30E-03	8.32E-05	7.63E-04	5.22E-04	4.53E-04	5.18E-04
2035	80	0.12	1.04	1.26	1.90E-02	0.18	0.13	0.11	0.12	5.32E-04	4.81E-03	5.82E-03	8.78E-05	8.28E-04	5.87E-04	4.99E-04	5.64E-04

Table C.2-2C. Adjusted EMFAC Emission Factors for Port Trucks in 2035

Speed (mph)	Emission Factors (g/mile)							
	DPM	CO	NOx	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
0	0.11	41.31	123.17	0.06	0.11	0.10	7.63	8.69
1	0.13	6.48	10.75	0.04	0.20	0.14	3.26	3.72
2	0.13	6.48	10.75	0.04	0.20	0.14	3.26	3.72
3	0.13	6.48	10.75	0.04	0.20	0.14	3.26	3.72
4	0.13	6.48	10.75	0.04	0.20	0.14	3.26	3.72
5	0.13	6.48	10.75	0.04	0.20	0.14	3.26	3.72
6	0.13	5.96	10.21	0.04	0.19	0.14	2.97	3.38
7	0.13	5.44	9.68	0.03	0.19	0.14	2.67	3.04
8	0.12	4.92	9.14	0.03	0.19	0.14	2.37	2.70
9	0.12	4.40	8.60	0.03	0.19	0.13	2.08	2.36
10	0.12	3.89	8.06	0.03	0.18	0.13	1.78	2.03
11	0.12	3.55	7.68	0.03	0.18	0.13	1.59	1.81
12	0.12	3.22	7.29	0.03	0.18	0.13	1.41	1.60
13	0.11	2.89	6.91	0.03	0.18	0.13	1.22	1.39
14	0.11	2.56	6.52	0.03	0.18	0.12	1.04	1.18
15	0.11	2.23	6.14	0.02	0.17	0.12	0.85	0.97
16	0.11	2.09	5.91	0.02	0.17	0.12	0.78	0.89
17	0.11	1.95	5.69	0.02	0.17	0.12	0.71	0.81
18	0.10	1.82	5.46	0.02	0.17	0.12	0.64	0.73
19	0.10	1.68	5.24	0.02	0.17	0.11	0.57	0.65
20	0.10	1.55	5.01	0.02	0.16	0.11	0.50	0.57
21	0.10	1.53	4.91	0.02	0.16	0.11	0.49	0.56
22	0.10	1.52	4.81	0.02	0.16	0.11	0.48	0.54
23	0.10	1.50	4.71	0.02	0.16	0.11	0.46	0.53
24	0.10	1.48	4.61	0.02	0.16	0.11	0.45	0.51
25	0.10	1.47	4.50	0.02	0.16	0.11	0.44	0.50
26	0.10	1.46	4.42	0.02	0.16	0.11	0.43	0.48
27	0.10	1.45	4.33	0.02	0.16	0.11	0.41	0.47
28	0.10	1.44	4.25	0.02	0.16	0.11	0.40	0.46
29	0.10	1.43	4.16	0.02	0.16	0.11	0.39	0.45
30	0.10	1.42	4.08	0.02	0.16	0.11	0.38	0.43
31	0.10	1.42	4.01	0.02	0.16	0.11	0.37	0.42
32	0.10	1.41	3.94	0.02	0.16	0.11	0.36	0.41
33	0.10	1.41	3.87	0.02	0.17	0.11	0.35	0.40
34	0.10	1.40	3.80	0.02	0.17	0.12	0.34	0.39
35	0.10	1.40	3.73	0.02	0.17	0.12	0.33	0.38
36	0.11	1.40	3.68	0.02	0.17	0.12	0.32	0.37
37	0.11	1.40	3.63	0.02	0.17	0.12	0.32	0.36
38	0.11	1.40	3.57	0.02	0.17	0.12	0.31	0.35
39	0.11	1.40	3.52	0.02	0.18	0.12	0.30	0.34
40	0.11	1.40	3.47	0.02	0.18	0.13	0.29	0.33
41	0.12	1.41	3.43	0.02	0.18	0.13	0.29	0.33
42	0.12	1.42	3.39	0.02	0.18	0.13	0.28	0.32

Table C.2-2C. Adjusted EMFAC Emission Factors for Port Trucks in 2035

Speed (mph)	Emission Factors (g/mile)							
	DPM	CO	NOx	SO _x	PM ₁₀	PM ₂₅	ROG	TOG
43	0.12	1.42	3.36	0.02	0.19	0.13	0.27	0.31
44	0.12	1.43	3.32	0.02	0.19	0.14	0.27	0.30
45	0.13	1.43	3.28	0.02	0.19	0.14	0.26	0.30
46	0.13	1.45	3.26	0.02	0.19	0.14	0.25	0.29
47	0.13	1.46	3.24	0.02	0.20	0.14	0.25	0.28
48	0.14	1.47	3.22	0.02	0.20	0.15	0.24	0.28
49	0.14	1.48	3.20	0.02	0.20	0.15	0.24	0.27
50	0.14	1.49	3.18	0.02	0.21	0.15	0.23	0.27
51	0.15	1.51	3.18	0.02	0.21	0.16	0.23	0.26
52	0.15	1.53	3.17	0.02	0.22	0.16	0.23	0.26
53	0.16	1.54	3.17	0.02	0.22	0.17	0.22	0.26
54	0.16	1.56	3.16	0.02	0.23	0.17	0.22	0.25
55	0.17	1.58	3.16	0.02	0.23	0.17	0.22	0.25
56	0.17	1.60	3.17	0.02	0.23	0.18	0.22	0.25
57	0.18	1.62	3.18	0.02	0.24	0.18	0.21	0.24
58	0.18	1.64	3.20	0.02	0.24	0.19	0.21	0.24
59	0.19	1.67	3.21	0.02	0.25	0.19	0.21	0.24
60	0.19	1.69	3.22	0.02	0.25	0.20	0.21	0.24
61	0.20	1.72	3.25	0.02	0.26	0.20	0.21	0.24
62	0.20	1.74	3.28	0.02	0.27	0.21	0.21	0.24
63	0.21	1.77	3.30	0.02	0.27	0.21	0.21	0.24
64	0.21	1.80	3.33	0.02	0.28	0.22	0.21	0.23
65	0.22	1.83	3.36	0.02	0.28	0.22	0.21	0.23
66	0.23	1.86	3.40	0.02	0.29	0.23	0.21	0.24
67	0.23	1.89	3.45	0.02	0.30	0.24	0.21	0.24
68	0.24	1.93	3.49	0.02	0.30	0.24	0.21	0.24
69	0.25	1.96	3.54	0.02	0.31	0.25	0.21	0.24
70	0.25	1.99	3.58	0.02	0.32	0.25	0.21	0.24
71	0.26	2.03	3.64	0.02	0.32	0.26	0.21	0.24
72	0.27	2.07	3.70	0.02	0.33	0.27	0.22	0.25
73	0.28	2.11	3.76	0.02	0.34	0.27	0.22	0.25
74	0.28	2.15	3.82	0.02	0.35	0.28	0.22	0.25
75	0.29	2.18	3.88	0.02	0.35	0.29	0.23	0.26
76	0.30	2.23	3.96	0.02	0.36	0.30	0.23	0.26
77	0.31	2.27	4.04	0.02	0.37	0.30	0.23	0.27
78	0.32	2.32	4.11	0.02	0.38	0.31	0.24	0.27
79	0.32	2.36	4.19	0.02	0.39	0.32	0.24	0.28
80	0.33	2.40	4.27	0.02	0.40	0.33	0.25	0.28

Table C.3-1A. 2008 Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
1658097	WB Anaheim ON and WB Anaheim OFF	59	0.14	11,363	90	98	211	1,202
1658095	EB Anaheim OFF and Shoreline Dr OFF	48	0.02	11,950	63	68	154	1,691
1658094	WB Anaheim OFF and EB Anaheim ON	59	0.15	11,706	92	100	214	1,203
1657678	WB PCH ON and WB PCH OFF	47	0.13	11,887	100	115	255	1,294
1657672	WB Willow ON and WB Willow OFF	40	0.18	13,534	109	126	272	1,294
1657669	EB Willow OFF and EB Willow ON	36	0.15	13,032	91	107	245	2,257
1657668	WB Willow OFF and EB Willow ON	37	0.15	14,034	109	126	272	1,294
1657665	WB Del Amo OFF and EB Del Amo ON	49	0.19	14,766	129	173	359	1,184
1657662	EB Del Amo ON and EB Del Amo OFF	42	0.15	14,153	117	157	325	1,184
1657654	Del Amo ON and 405 OFF	35	0.17	17,661	104	133	263	2,061
1657653	WB Del Amo ON and WB Del Amo OFF	42	0.24	13,901	125	167	347	1,178
1657648	EB Alondra OFF and Alondra ON	47	0.27	23,653	147	206	400	1,559
1656691	405 OFF and EB 405 ON	48	0.50	6,922	42	47	108	1,872
1643216	Shoreline Dr ON and Anaheim OFF	65	0.08	3,090	21	25	63	955
1643214	Shoreline Dr OFF and EB Anaheim ON	64	0.02	3,118	33	36	94	1,691
1643213	Shoreline Dr OFF	64	0.32	8,832	29	30	63	0
1643212	EB Anaheim ON and Pico OFF	63	0.19	3,874	36	38	97	1,827
127443	Pico ON and Harbor Scenic Drive ON	65	0.46	3,123	22	25	63	858
127435	Anaheim OFF and Pico ON	65	0.16	3,199	22	25	63	1,044
127416	NB LB OFF and SB LB OFF	45	0.08	18,047	108	141	310	1,971
97956	Pico OFF and Harbor Scenic Dr OFF	64	0.43	3,519	36	38	97	1,211
88576	Firestone ON and Wright Rd OFF	45	0.69	20,977	165	226	378	1,325
88575	Firestone OFF and Imperial ON	32	0.78	20,321	171	254	476	975
88574	EB Atlantic ON and Florence OFF	47	1.44	17,157	146	196	326	1,162
88574	EB Atlantic ON and Florence OFF	47	1.44	17,157	146	196	326	1,162
88573	EB Atlantic OFF and Florence ON	23	1.63	22,398	183	266	488	937
88573	EB Atlantic OFF and Florence ON	23	1.63	22,398	183	266	488	937
16266	405 OFF and EB 405 ON	48	0.32	6,922	42	47	108	1,872
16254	EB 405 ON and Wardlow/WB 405 ON	46	0.09	11,951	97	130	257	1,078
16247	EB Del Amo OFF and EB 405 ON	44	0.69	15,094	124	166	334	1,190
16237	PCH OFF and PCH ON	43	0.42	12,431	75	87	198	2,093
16187	PCH ON and WB Anaheim OFF	38	0.13	13,670	85	92	207	2,130
16185	WB PCH OFF and EB PCH ON	45	0.12	12,371	108	119	258	1,294
16174	WB Anaheim ON and EB Anaheim OFF	43	0.10	13,009	72	78	170	1,772
16168	WB Anaheim OFF and WB Anaheim ON	43	0.11	12,341	69	74	163	1,752

Table C.3-1A. 2008 Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16157	EB PCH ON and PCH OFF	51	0.14	11,551	92	101	212	1,196
16152	Shoreline Dr ON	51	0.35	7,947	58	60	116	162
16135	EB Anaheim ON and Shoreline Dr ON	56	0.01	11,036	81	86	177	1,117
16134	PCH OFF and WB Anaheim ON	57	0.09	12,926	97	105	222	1,202
16123	EB Willow OFF and WB PCH ON	41	0.54	13,321	109	126	272	1,294
16121	WB Willow ON and EB Willow OFF	31	0.15	13,692	94	109	246	2,257
16086	EB Willow ON and PCH OFF	34	0.57	14,132	91	107	245	2,257
16073	WB Willow OFF and WB Willow ON	31	0.19	12,826	88	103	233	2,149
16063	EB Willow ON and EB Willow OFF	41	0.19	12,821	109	126	272	1,294
16053	405/Wardlow/Pacific OFF and WB Willow ON	46	0.57	14,631	114	131	277	1,294
16053	405/Wardlow/Pacific OFF and WB Willow ON	46	0.57	14,631	114	131	277	1,294
16050	WB 405 ON and WB Willow OFF	31	0.80	14,317	88	103	233	2,149
16050	WB 405 ON and WB Willow OFF	31	0.80	14,317	88	103	233	2,149
16042	EB 405 ON and WB 405 ON	33	0.17	11,275	70	82	184	2,080
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	54	0.77	7,866	63	74	166	1,078
15954	Del Amo ON and 405 OFF	35	0.81	17,661	104	133	263	2,061
15915	LB Blvd OFF and WB Del Amo ON	46	0.53	14,784	138	188	400	1,178
15785	LB Blvd ON and LB Blvd OFF	50	0.53	13,509	130	177	386	1,173
15782	Del Amo OFF and Del Amo ON	42	0.24	15,032	79	100	212	1,998
15749	LB ON and Del Amo OFF	35	0.56	18,573	110	143	312	1,998
15700	Artesia/EB 91 OFF and LB Blvd ON	51	0.36	15,126	144	195	411	1,173
15696	SB LB OFF and LB ON	37	0.51	17,129	103	136	299	1,971
15655	EB 91 & Artesia ON and NB LB OFF	41	0.18	19,509	116	152	328	1,971
15615	WB 91 OFF and Artesia/EB 91 OFF	52	0.24	12,339	119	166	326	1,099
15591	WB 91 ON and EB 91 & Artesia ON	37	0.17	16,732	102	138	302	1,913
15588	WB 91 OFF and Artesia/EB 91 OFF	52	0.07	12,339	119	166	326	1,099
15586	EB 91 ON and WB 91 OFF	47	0.34	10,418	105	148	294	1,085
15581	WB 91 OFF and WB 91 ON	43	0.54	10,973	58	79	157	1,547
15552	WB 91/Atlantic ON and EB 91 ON	49	0.25	14,508	136	196	377	1,117
15549	EB 91/Atlantic/Artesia OFF and WB 91 OFF	52	0.34	19,562	107	152	303	1,600
15536	Alondra OFF and WB 91/Atlantic ON	56	0.18	18,453	163	233	451	1,117
15497	Alondra ON and EB 91/Atlantic/Artesia OFF	48	0.12	25,334	158	216	417	1,600
15489	Alondra ON and Alondra OFF	56	0.51	16,985	151	224	444	1,114
15433	WB Alondra OFF and EB Alondra OFF	46	0.19	24,430	153	214	416	1,559
15412	Rosecrans OFF and Alondra ON	57	0.44	19,025	165	243	479	1,114

Table C.3-1A. 2008 Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15412	Rosecrans OFF and Alondra ON	57	0.44	19,025	165	243	479	1,114
15393	EB Rosecrans ON and WB Alondra OFF	49	0.27	25,829	165	229	446	1,559
15353	EBnWb 105/Garfield OFF and Rosecrans OFF	59	0.39	16,916	149	223	446	1,083
15352	WB Rosecrans ON and EB Rosecrans ON	52	0.28	23,708	154	218	432	1,517
15352	WB Rosecrans ON and EB Rosecrans ON	52	0.28	23,708	154	218	432	1,517
15290	105 ON and WB Rosecrans ON	52	0.33	22,641	149	211	418	1,509
15209	MLK ON and 105 ON	59	0.23	17,092	105	146	238	1,347
15182	Rosecrans ON and EBnWb 105/Garfield OFF	59	1.01	12,287	103	155	284	974
15102	EBnWb 105 ON and Rosecrans ON	55	0.27	13,555	112	164	298	985
15081	Rosecrans OFF and MLK ON	60	0.88	15,433	97	138	228	1,333
14991	105 OFF and Rosecrans OFF	60	0.24	16,734	104	148	245	1,333
14973	MLK OFF and 105 OFF	54	0.17	22,979	162	230	387	1,333
14970	Imperial ON and MLK OFF	52	0.08	23,773	171	236	393	1,333
14964	Imperial OFF and EBnWb 105 ON	43	0.26	20,304	173	256	474	985
14944	Imperial ON and Imperial OFF	42	0.71	17,690	153	233	443	975
14898	Wright Rd OFF and Imperial OFF	47	0.73	19,936	153	211	354	1,325
14886	WB Atlantic ON and EB Atlantic ON	48	0.19	16,014	142	191	318	1,162
14864	WB Atlantic OFF and EB Atlantic OFF	28	0.31	21,187	176	252	463	792
14858	Atlantic/Bandini ON and WB Atlantic OFF	38	0.20	18,789	159	227	416	254
14828	Bandini/Atlantic OFF and WB Atlantic ON	50	0.43	15,902	134	179	297	287
14817	Washington OFF and Atlantic/Bandini ON	31	0.21	21,181	182	254	475	254
14799	SB i5 Off and Eastern ON	39	0.10	13,996	111	147	265	94
14794	Eastern ON and SB i5 ON	33	0.40	15,331	119	153	270	98
14791	Olympic ON and NB i5 ON	30	0.18	16,397	164	244	503	177
14790	Washington ON and Bandini/Atlantic OFF	47	0.16	21,025	178	236	414	290
14784	Washington ON and Washington OFF	35	0.25	19,917	164	230	431	237
14776	SR60 Off and Olympic ON	35	0.32	17,619	180	262	542	177
14775	EasternWhittierOlympic OFF and SB i5 Off	36	0.31	19,459	168	234	440	94
14772	Washington Off and Washington ON	50	0.30	20,334	162	216	377	180
14768	NB i5 ON and Olympic Off	37	0.26	12,194	123	170	321	177
14765	SB i5 ON and Washington Off	45	0.34	21,894	189	253	453	180
14761	NB i5 Off and Washington ON	23	0.39	21,142	189	265	503	237
14748	Olympic Off and NB i5 Off	30	0.21	13,658	133	178	329	182
14740	SR60 ON and EasternWhittierOlympic OFF	37	0.21	20,978	180	250	477	94
14729	3rd / Ford Off and SR60 Off	40	0.20	11,033	114	166	328	139

Table C.3-1A. 2008 Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
14712	Firestone ON and Firestone OFF	37	0.69	18,353	157	236	444	946
14705	Firestone OFF and Firestone ON	52	0.73	16,687	138	192	322	1,232
14700	Florence OFF and Firestone ON	25	0.61	21,800	183	271	506	946
14698	3rd / Ford ON and 3rd / Ford Off	46	0.02	10,669	110	165	328	139
14620	Third Off and SR60 ON	41	0.36	13,341	106	149	273	62
14610	Florence ON and Firestone OFF	46	0.62	18,883	161	221	375	1,232
14604	Florence ON and Florence OFF	33	0.66	19,388	167	251	471	937
14541	Florence OFF and Florence ON	55	0.74	14,938	126	174	289	1,145

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the digitization of the roadways from the aerial. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-1B. 2008 Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
1658097	WB Anaheim ON and WB Anaheim OFF	55	0.14	10,672	224	247	491	7,026
1658095	EB Anaheim OFF and Shoreline Dr OFF	50	0.02	14,588	198	218	448	4,968
1658094	WB Anaheim OFF and EB Anaheim ON	55	0.15	13,060	247	272	539	7,041
1657678	WB PCH ON and WB PCH OFF	42	0.13	13,397	290	342	699	8,996
1657672	WB Willow ON and WB Willow OFF	37	0.18	15,723	315	375	746	8,991
1657669	EB Willow OFF and EB Willow ON	37	0.15	17,536	309	373	763	7,311
1657668	WB Willow OFF and EB Willow ON	35	0.15	16,722	315	375	746	8,992
1657665	WB Del Amo OFF and EB Del Amo ON	51	0.19	19,747	433	566	1,069	8,739
1657662	EB Del Amo ON and EB Del Amo OFF	45	0.15	17,212	359	469	886	8,739
1657654	Del Amo ON and 405 OFF	44	0.17	21,882	374	471	835	6,731
1657653	WB Del Amo ON and WB Del Amo OFF	45	0.24	18,386	417	545	1,030	8,675
1657648	EB Alondra OFF and Alondra ON	59	0.27	29,097	431	603	1,037	4,563
1656691	405 OFF and EB 405 ON	49	0.50	9,298	158	183	373	6,280
1643216	Shoreline Dr ON and Anaheim OFF	63	0.08	2,539	44	54	133	4,760
1643214	Shoreline Dr OFF and EB Anaheim ON	61	0.02	5,588	75	87	200	4,468
1643213	Shoreline Dr OFF	65	0.32	9,000	120	129	251	500
1643212	EB Anaheim ON and Pico OFF	60	0.19	7,225	85	93	211	5,357
127443	Pico ON and Harbor Scenic Drive ON	65	0.46	2,734	44	54	133	4,205
127435	Anaheim OFF and Pico ON	65	0.16	3,047	44	54	133	5,251
127416	NB LB OFF and SB LB OFF	52	0.08	23,291	410	535	1,050	6,476
97956	Pico OFF and Harbor Scenic Dr OFF	63	0.43	6,598	85	93	211	3,484
88576	Firestone ON and Wright Rd OFF	59	0.69	32,619	551	722	1,050	3,915
88575	Firestone OFF and Imperial ON	44	0.78	30,364	581	844	1,376	5,928
88574	EB Atlantic ON and Florence OFF	59	1.44	29,473	517	660	953	3,246
88574	EB Atlantic ON and Florence OFF	59	1.44	29,473	517	660	953	3,246
88573	EB Atlantic OFF and Florence ON	37	1.63	28,987	589	836	1,378	5,114
88573	EB Atlantic OFF and Florence ON	37	1.63	28,987	589	836	1,378	5,114
16266	405 OFF and EB 405 ON	49	0.32	9,298	158	183	373	6,280
16254	EB 405 ON and Wardlow/WB 405 ON	49	0.09	13,379	267	353	612	7,893
16247	EB Del Amo OFF and EB 405 ON	47	0.69	19,299	392	511	926	8,837
16237	PCH OFF and PCH ON	44	0.42	14,709	236	284	582	6,275
16187	PCH ON and WB Anaheim OFF	39	0.13	17,454	270	307	621	6,467
16185	WB PCH OFF and EB PCH ON	39	0.12	14,798	329	364	727	9,006
16174	WB Anaheim ON and EB Anaheim OFF	44	0.10	16,161	225	251	499	5,282
16168	WB Anaheim OFF and WB Anaheim ON	44	0.11	15,401	223	249	495	5,250

Table C.3-1B. 2008 Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16157	EB PCH ON and PCH OFF	47	0.14	12,365	243	267	522	6,970
16152	Shoreline Dr ON	57	0.35	8,136	129	133	240	813
16135	EB Anaheim ON and Shoreline Dr ON	52	0.01	10,675	179	190	365	5,573
16134	PCH OFF and WB Anaheim ON	54	0.09	12,977	251	276	539	7,026
16123	EB Willow OFF and WB PCH ON	38	0.54	15,636	323	384	765	8,996
16121	WB Willow ON and EB Willow OFF	33	0.15	20,011	320	381	768	7,311
16086	EB Willow ON and PCH OFF	37	0.57	18,347	315	380	778	7,367
16073	WB Willow OFF and WB Willow ON	34	0.19	19,351	318	379	765	7,300
16063	EB Willow ON and EB Willow OFF	38	0.19	15,075	315	375	746	8,992
16053	405/Wardlow/Pacific OFF and WB Willow ON	44	0.57	17,155	333	390	763	8,991
16053	405/Wardlow/Pacific OFF and WB Willow ON	44	0.57	17,155	333	390	763	8,991
16050	WB 405 ON and WB Willow OFF	33	0.80	20,828	321	383	773	7,300
16050	WB 405 ON and WB Willow OFF	33	0.80	20,828	321	383	773	7,300
16042	EB 405 ON and WB 405 ON	36	0.17	14,223	225	269	542	6,847
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	49	0.77	6,470	168	197	405	7,893
15954	Del Amo ON and 405 OFF	44	0.81	21,882	374	471	835	6,731
15915	LB Blvd OFF and WB Del Amo ON	49	0.53	19,350	432	576	1,119	8,675
15785	LB Blvd ON and LB Blvd OFF	51	0.53	18,064	409	552	1,097	8,630
15782	Del Amo OFF and Del Amo ON	50	0.24	18,251	318	398	754	6,569
15749	LB ON and Del Amo OFF	45	0.56	22,766	408	525	1,023	6,569
15700	Artesia/EB 91 OFF and LB Blvd ON	53	0.36	20,985	456	611	1,171	8,630
15696	SB LB OFF and LB ON	47	0.51	21,328	388	507	994	6,476
15655	EB 91 & Artesia ON and NB LB OFF	52	0.18	25,299	436	566	1,099	6,476
15615	WB 91 OFF and Artesia/EB 91 OFF	57	0.24	16,826	396	548	930	7,653
15591	WB 91 ON and EB 91 & Artesia ON	48	0.17	20,922	375	502	997	6,081
15588	WB 91 OFF and Artesia/EB 91 OFF	57	0.07	16,826	396	548	930	7,653
15586	EB 91 ON and WB 91 OFF	52	0.34	13,212	348	485	832	7,476
15581	WB 91 OFF and WB 91 ON	54	0.54	13,092	191	253	430	4,581
15552	WB 91/Atlantic ON and EB 91 ON	55	0.25	22,182	483	687	1,136	7,864
15549	EB 91/Atlantic/Artesia OFF and WB 91 OFF	60	0.34	21,767	338	475	827	4,718
15536	Alondra OFF and WB 91/Atlantic ON	61	0.18	29,677	595	834	1,382	7,864
15497	Alondra ON and EB 91/Atlantic/Artesia OFF	60	0.12	31,828	470	638	1,077	4,718
15489	Alondra ON and Alondra OFF	61	0.51	26,698	542	797	1,360	7,655
15433	WB Alondra OFF and EB Alondra OFF	59	0.19	30,518	454	634	1,092	4,563
15412	Rosecrans OFF and Alondra ON	62	0.44	29,977	595	873	1,485	7,655

Table C.3-1B. 2008 Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15412	Rosecrans OFF and Alondra ON	62	0.44	29,977	595	873	1,485	7,655
15393	EB Rosecrans ON and WB Alondra OFF	60	0.27	32,397	483	671	1,152	4,563
15353	EBnWb 105/Garfield OFF and Rosecrans OFF	63	0.39	26,798	542	816	1,406	7,406
15352	WB Rosecrans ON and EB Rosecrans ON	62	0.28	30,570	448	644	1,136	4,464
15352	WB Rosecrans ON and EB Rosecrans ON	62	0.28	30,570	448	644	1,136	4,464
15290	105 ON and WB Rosecrans ON	62	0.33	30,012	442	636	1,122	4,457
15209	MLK ON and 105 ON	64	0.23	22,211	335	464	695	3,966
15182	Rosecrans ON and EBnWb 105/Garfield OFF	62	1.01	19,283	366	550	859	5,909
15102	EBnWb 105 ON and Rosecrans ON	60	0.27	20,708	399	573	885	5,969
15081	Rosecrans OFF and MLK ON	64	0.88	20,772	317	447	677	3,944
14991	105 OFF and Rosecrans OFF	64	0.24	22,201	332	469	710	3,944
14973	MLK OFF and 105 OFF	62	0.17	33,393	533	723	1,059	3,948
14970	Imperial ON and MLK OFF	62	0.08	35,312	571	749	1,091	3,948
14964	Imperial OFF and EBnWb 105 ON	53	0.26	32,845	601	860	1,361	5,970
14944	Imperial ON and Imperial OFF	51	0.71	26,840	516	758	1,218	5,928
14898	Wright Rd OFF and Imperial OFF	60	0.73	30,673	507	664	961	3,915
14886	WB Atlantic ON and EB Atlantic ON	59	0.19	26,378	492	628	907	3,246
14864	WB Atlantic OFF and EB Atlantic OFF	42	0.31	28,124	572	811	1,333	4,145
14858	Atlantic/Bandini ON and WB Atlantic OFF	51	0.20	26,586	536	759	1,247	2,476
14828	Bandini/Atlantic OFF and WB Atlantic ON	61	0.43	26,199	467	595	854	854
14817	Washington OFF and Atlantic/Bandini ON	47	0.21	32,976	655	906	1,521	2,476
14799	SB i5 Off and Eastern ON	60	0.10	18,503	357	438	670	222
14794	Eastern ON and SB i5 ON	58	0.40	20,750	383	458	684	232
14791	Olympic ON and NB i5 ON	43	0.18	23,617	520	756	1,367	1,984
14790	Washington ON and Bandini/Atlantic OFF	59	0.16	32,174	571	715	1,109	864
14784	Washington ON and Washington OFF	51	0.25	30,891	604	834	1,398	2,242
14776	SR60 Off and Olympic ON	47	0.32	25,939	566	805	1,454	1,984
14775	EasternWhittierOlympic OFF and SB i5 Off	59	0.31	25,493	468	597	909	222
14772	Washington Off and Washington ON	61	0.30	30,511	520	662	1,024	393
14768	NB i5 ON and Olympic Off	53	0.26	16,984	414	550	897	1,984
14765	SB i5 ON and Washington Off	59	0.34	32,610	601	770	1,214	393
14761	NB i5 Off and Washington ON	39	0.39	32,776	672	933	1,594	2,242
14748	Olympic Off and NB i5 Off	48	0.21	19,283	449	575	913	1,999
14740	SR60 ON and EasternWhittierOlympic OFF	58	0.21	28,278	523	652	1,014	222
14729	3rd / Ford Off and SR60 Off	50	0.20	15,095	364	513	872	1,905

Table C.3-1B. 2008 Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
14712	Firestone ON and Firestone OFF	48	0.69	24,851	497	733	1,197	5,315
14705	Firestone OFF and Firestone ON	61	0.73	27,346	470	623	907	3,541
14700	Florence OFF and Firestone ON	39	0.61	30,482	608	889	1,487	5,315
14698	3rd / Ford ON and 3rd / Ford Off	55	0.02	14,386	343	507	874	1,902
14620	Third Off and SR60 ON	58	0.36	17,270	282	357	519	141
14610	Florence ON and Firestone OFF	59	0.62	32,479	565	743	1,107	3,541
14604	Florence ON and Florence OFF	45	0.66	24,085	517	769	1,296	5,114
14541	Florence OFF and Florence ON	63	0.74	25,084	440	581	839	2,981

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the digitization of the roadways from the aerial. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-1C. 2008 Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
1658097	WB Anaheim ON and WB Anaheim OFF	43	0.14	10,504	69	112	220	4,786
1658095	EB Anaheim OFF and Shoreline Dr OFF	48	0.02	12,285	60	96	189	2,265
1658094	WB Anaheim OFF and EB Anaheim ON	40	0.15	11,823	79	124	238	4,790
1657678	WB PCH ON and WB PCH OFF	30	0.13	10,907	82	141	293	5,262
1657672	WB Willow ON and WB Willow OFF	27	0.18	12,847	89	156	318	5,263
1657669	EB Willow OFF and EB Willow ON	34	0.15	14,402	105	182	369	2,874
1657668	WB Willow OFF and EB Willow ON	24	0.15	13,585	90	156	318	5,263
1657665	WB Del Amo OFF and EB Del Amo ON	36	0.19	18,907	138	275	563	5,207
1657662	EB Del Amo ON and EB Del Amo OFF	27	0.15	16,498	121	242	494	5,207
1657654	Del Amo ON and 405 OFF	28	0.17	20,243	118	231	431	2,797
1657653	WB Del Amo ON and WB Del Amo OFF	28	0.24	18,123	132	265	544	5,192
1657648	EB Alondra OFF and Alondra ON	35	0.27	24,832	133	283	516	2,316
1656691	405 OFF and EB 405 ON	47	0.50	7,556	61	105	215	2,661
1643216	Shoreline Dr ON and Anaheim OFF	62	0.08	2,658	20	37	92	4,518
1643214	Shoreline Dr OFF and EB Anaheim ON	64	0.02	2,088	29	50	116	2,265
1643213	Shoreline Dr OFF	63	0.32	10,197	28	44	79	0
1643212	EB Anaheim ON and Pico OFF	64	0.19	3,157	34	54	123	2,678
127443	Pico ON and Harbor Scenic Drive ON	65	0.46	2,709	20	34	85	3,575
127435	Anaheim OFF and Pico ON	64	0.16	3,136	21	37	92	4,641
127416	NB LB OFF and SB LB OFF	41	0.08	20,689	127	255	513	2,725
97956	Pico OFF and Harbor Scenic Dr OFF	65	0.43	2,829	34	54	123	2,061
88576	Firestone ON and Wright Rd OFF	27	0.69	30,739	170	348	568	2,142
88575	Firestone OFF and Imperial ON	26	0.78	22,937	203	447	793	4,315
88574	EB Atlantic ON and Florence OFF	25	1.44	28,852	159	324	520	1,973
88574	EB Atlantic ON and Florence OFF	25	1.44	28,852	159	324	520	1,973
88573	EB Atlantic OFF and Florence ON	20	1.63	21,026	203	433	744	3,993
88573	EB Atlantic OFF and Florence ON	20	1.63	21,026	203	433	744	3,993
16266	405 OFF and EB 405 ON	47	0.32	7,556	61	105	215	2,661
16254	EB 405 ON and Wardlow/WB 405 ON	35	0.09	12,617	92	187	362	4,958
16247	EB Del Amo OFF and EB 405 ON	31	0.69	18,894	137	274	540	5,256
16237	PCH OFF and PCH ON	41	0.42	12,711	71	122	243	2,585
16187	PCH ON and WB Anaheim OFF	37	0.13	14,833	83	134	262	2,620
16185	WB PCH OFF and EB PCH ON	26	0.12	11,528	92	147	295	5,262
16174	WB Anaheim ON and EB Anaheim OFF	42	0.10	13,847	67	107	202	2,274
16168	WB Anaheim OFF and WB Anaheim ON	42	0.11	13,172	64	103	194	2,263

Table C.3-1C. 2008 Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16157	EB PCH ON and PCH OFF	32	0.14	10,292	74	120	233	4,624
16152	Shoreline Dr ON	35	0.35	7,702	42	61	103	23
16135	EB Anaheim ON and Shoreline Dr ON	35	0.01	10,360	67	101	187	4,540
16134	PCH OFF and WB Anaheim ON	42	0.09	11,854	77	124	239	4,800
16123	EB Willow OFF and WB PCH ON	25	0.54	12,310	90	156	318	5,263
16121	WB Willow ON and EB Willow OFF	30	0.15	16,187	109	188	375	2,874
16086	EB Willow ON and PCH OFF	33	0.57	15,802	105	182	369	2,874
16073	WB Willow OFF and WB Willow ON	30	0.19	15,752	108	186	371	2,816
16063	EB Willow ON and EB Willow OFF	25	0.19	11,751	90	156	318	5,263
16053	405/Wardlow/Pacific OFF and WB Willow ON	33	0.57	13,874	91	158	319	5,263
16053	405/Wardlow/Pacific OFF and WB Willow ON	33	0.57	13,874	91	158	319	5,263
16050	WB 405 ON and WB Willow OFF	28	0.80	17,118	108	186	371	2,816
16050	WB 405 ON and WB Willow OFF	28	0.80	17,118	108	186	371	2,816
16042	EB 405 ON and WB 405 ON	31	0.17	13,255	90	155	309	2,788
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	39	0.77	6,409	52	92	195	4,958
15954	Del Amo ON and 405 OFF	28	0.81	20,243	118	231	431	2,797
15915	LB Blvd OFF and WB Del Amo ON	32	0.53	19,061	137	276	574	5,192
15785	LB Blvd ON and LB Blvd OFF	36	0.53	17,814	130	265	560	5,177
15782	Del Amo OFF and Del Amo ON	37	0.24	17,279	104	203	396	2,758
15749	LB ON and Del Amo OFF	30	0.56	20,027	129	257	513	2,762
15700	Artesia/EB 91 OFF and LB Blvd ON	38	0.36	20,265	141	289	595	5,177
15696	SB LB OFF and LB ON	33	0.51	18,522	121	245	495	2,725
15655	EB 91 & Artesia ON and NB LB OFF	38	0.18	21,648	134	270	531	2,725
15615	WB 91 OFF and Artesia/EB 91 OFF	37	0.24	14,996	111	234	455	4,670
15591	WB 91 ON and EB 91 & Artesia ON	37	0.17	18,273	115	234	477	2,691
15588	WB 91 OFF and Artesia/EB 91 OFF	37	0.07	14,996	111	234	455	4,670
15586	EB 91 ON and WB 91 OFF	29	0.34	12,601	100	213	419	4,633
15581	WB 91 OFF and WB 91 ON	38	0.54	12,090	65	132	243	2,309
15552	WB 91/Atlantic ON and EB 91 ON	29	0.25	21,591	152	337	656	4,795
15549	EB 91/Atlantic/Artesia OFF and WB 91 OFF	48	0.34	18,464	93	200	370	2,340
15536	Alondra OFF and WB 91/Atlantic ON	41	0.18	27,245	205	432	834	4,801
15497	Alondra ON and EB 91/Atlantic/Artesia OFF	38	0.12	26,651	143	297	535	2,340
15489	Alondra ON and Alondra OFF	39	0.51	24,144	194	417	817	4,745
15433	WB Alondra OFF and EB Alondra OFF	32	0.19	26,205	140	295	537	2,316
15412	Rosecrans OFF and Alondra ON	42	0.44	26,651	209	447	873	4,745

Table C.3-1C. 2008 Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15412	Rosecrans OFF and Alondra ON	42	0.44	26,651	209	447	873	4,745
15393	EB Rosecrans ON and WB Alondra OFF	36	0.27	27,839	149	314	570	2,316
15353	EBnWb 105/Garfield OFF and Rosecrans OFF	46	0.39	22,675	192	414	818	4,626
15352	WB Rosecrans ON and EB Rosecrans ON	39	0.28	26,298	141	302	555	2,292
15352	WB Rosecrans ON and EB Rosecrans ON	39	0.28	26,298	141	302	555	2,292
15290	105 ON and WB Rosecrans ON	39	0.33	25,669	138	296	546	2,284
15209	MLK ON and 105 ON	48	0.23	19,636	97	205	333	2,191
15182	Rosecrans ON and EBnWb 105/Garfield OFF	50	1.01	14,495	124	278	488	4,340
15102	EBnWb 105 ON and Rosecrans ON	45	0.27	16,224	137	298	515	4,362
15081	Rosecrans OFF and MLK ON	51	0.88	18,385	91	196	323	2,165
14991	105 OFF and Rosecrans OFF	51	0.24	20,712	98	211	347	2,165
14973	MLK OFF and 105 OFF	41	0.17	30,292	167	348	571	2,165
14970	Imperial ON and MLK OFF	37	0.08	32,082	176	360	585	2,165
14964	Imperial OFF and EBnWb 105 ON	33	0.26	25,421	209	458	813	4,362
14944	Imperial ON and Imperial OFF	33	0.71	19,891	184	417	758	4,312
14898	Wright Rd OFF and Imperial OFF	32	0.73	29,104	161	333	547	2,142
14886	WB Atlantic ON and EB Atlantic ON	25	0.19	26,075	147	301	483	1,571
14864	WB Atlantic OFF and EB Atlantic OFF	24	0.31	20,385	189	403	693	3,366
14858	Atlantic/Bandini ON and WB Atlantic OFF	33	0.20	19,570	172	367	631	2,541
14828	Bandini/Atlantic OFF and WB Atlantic ON	28	0.43	25,536	131	268	429	301
14817	Washington OFF and Atlantic/Bandini ON	24	0.21	24,542	215	450	796	2,541
14799	SB i5 Off and Eastern ON	28	0.10	17,132	131	260	438	99
14794	Eastern ON and SB i5 ON	22	0.40	19,034	141	273	450	104
14791	Olympic ON and NB i5 ON	19	0.18	23,037	230	516	1,014	2,357
14790	Washington ON and Bandini/Atlantic OFF	28	0.16	29,680	162	323	536	303
14784	Washington ON and Washington OFF	28	0.25	23,027	180	376	670	2,440
14776	SR60 Off and Olympic ON	23	0.32	24,589	241	535	1,053	2,357
14775	EasternWhittierOlympic OFF and SB i5 Off	25	0.31	26,487	217	461	836	99
14772	Washington Off and Washington ON	32	0.30	27,297	135	272	451	165
14768	NB i5 ON and Olympic Off	23	0.26	15,629	172	356	641	2,357
14765	SB i5 ON and Washington Off	27	0.34	28,293	194	389	656	165
14761	NB i5 Off and Washington ON	16	0.39	25,178	230	483	874	2,440
14748	Olympic Off and NB i5 Off	18	0.21	18,240	185	372	653	2,362
14740	SR60 ON and EasternWhittierOlympic OFF	28	0.21	28,589	236	505	934	99
14729	3rd / Ford Off and SR60 Off	28	0.20	16,075	185	410	789	2,316

Table C.3-1C. 2008 Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
14712	Firestone ON and Firestone OFF	30	0.69	16,708	172	385	687	4,043
14705	Firestone OFF and Firestone ON	33	0.73	25,998	145	302	495	2,028
14700	Florence OFF and Firestone ON	21	0.61	20,842	202	441	770	4,043
14698	3rd / Ford ON and 3rd / Ford Off	34	0.02	14,044	174	398	776	2,311
14620	Third Off and SR60 ON	33	0.36	15,417	106	221	381	56
14610	Florence ON and Firestone OFF	26	0.62	31,318	173	356	583	2,028
14604	Florence ON and Florence OFF	28	0.66	17,512	181	403	709	3,993
14541	Florence OFF and Florence ON	37	0.74	24,607	138	287	469	1,957

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the digitization of the roadways from the aerial. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-1D. 2008 Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
1658097	WB Anaheim ON and WB Anaheim OFF	65	0.14	6,930	72	126	665	1,966
1658095	EB Anaheim OFF and Shoreline Dr OFF	65	0.02	4,363	52	88	493	1,164
1658094	WB Anaheim OFF and EB Anaheim ON	65	0.15	6,930	72	126	665	1,966
1657678	WB PCH ON and WB PCH OFF	65	0.13	8,933	96	180	925	2,951
1657672	WB Willow ON and WB Willow OFF	65	0.18	10,693	105	197	989	2,951
1657669	EB Willow OFF and EB Willow ON	65	0.15	9,022	107	202	1,044	2,596
1657668	WB Willow OFF and EB Willow ON	64	0.15	11,241	105	198	990	2,951
1657665	WB Del Amo OFF and EB Del Amo ON	65	0.19	11,052	110	215	1,073	2,834
1657662	EB Del Amo ON and EB Del Amo OFF	65	0.15	11,052	110	215	1,073	2,834
1657654	Del Amo ON and 405 OFF	65	0.17	11,738	126	240	1,120	2,360
1657653	WB Del Amo ON and WB Del Amo OFF	65	0.24	11,052	110	215	1,073	2,834
1657648	EB Alondra OFF and Alondra ON	65	0.27	8,394	102	234	1,180	1,387
1656691	405 OFF and EB 405 ON	65	0.50	9,579	98	173	889	2,352
1643216	Shoreline Dr ON and Anaheim OFF	65	0.08	1,378	17	33	195	1,562
1643214	Shoreline Dr OFF and EB Anaheim ON	65	0.02	671	13	23	148	1,164
1643213	Shoreline Dr OFF	65	0.32	3,693	39	64	345	0
1643212	EB Anaheim ON and Pico OFF	65	0.19	831	15	25	154	1,388
127443	Pico ON and Harbor Scenic Drive ON	65	0.46	1,502	18	34	195	1,910
127435	Anaheim OFF and Pico ON	65	0.16	1,514	18	34	195	2,075
127416	NB LB OFF and SB LB OFF	65	0.08	10,242	114	229	1,203	2,233
97956	Pico OFF and Harbor Scenic Dr OFF	65	0.43	787	15	25	154	1,107
88576	Firestone ON and Wright Rd OFF	65	0.69	3,900	41	83	309	371
88575	Firestone OFF and Imperial ON	65	0.78	13,291	132	282	1,072	1,290
88574	EB Atlantic ON and Florence OFF	65	1.44	3,340	32	64	214	81
88574	EB Atlantic ON and Florence OFF	65	1.44	3,340	32	64	214	81
88573	EB Atlantic OFF and Florence ON	65	1.63	16,757	161	332	1,240	1,133
88573	EB Atlantic OFF and Florence ON	65	1.63	16,757	161	332	1,240	1,133
16266	405 OFF and EB 405 ON	65	0.32	9,579	98	173	889	2,352
16254	EB 405 ON and Wardlow/WB 405 ON	65	0.09	10,731	104	203	908	2,735
16247	EB Del Amo OFF and EB 405 ON	65	0.69	13,195	134	257	1,185	2,907
16237	PCH OFF and PCH ON	65	0.42	6,141	70	131	710	1,858
16187	PCH ON and WB Anaheim OFF	65	0.13	6,462	78	136	725	1,884
16185	WB PCH OFF and EB PCH ON	65	0.12	9,185	102	183	934	2,951
16174	WB Anaheim ON and EB Anaheim OFF	65	0.10	5,470	63	106	566	1,328
16168	WB Anaheim OFF and WB Anaheim ON	65	0.11	5,470	63	106	566	1,328

Table C.3-1D. 2008 Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16157	EB PCH ON and PCH OFF	65	0.14	7,678	78	137	693	1,965
16152	Shoreline Dr ON	65	0.35	5,213	48	78	380	150
16135	EB Anaheim ON and Shoreline Dr ON	65	0.01	6,591	66	112	575	1,712
16134	PCH OFF and WB Anaheim ON	65	0.09	7,696	78	137	693	1,966
16123	EB Willow OFF and WB PCH ON	65	0.54	10,042	105	198	990	2,951
16121	WB Willow ON and EB Willow OFF	65	0.15	10,720	110	206	1,051	2,596
16086	EB Willow ON and PCH OFF	65	0.57	9,022	107	202	1,044	2,596
16073	WB Willow OFF and WB Willow ON	65	0.19	10,376	109	205	1,049	2,592
16063	EB Willow ON and EB Willow OFF	65	0.19	10,042	105	198	990	2,951
16053	405/Wardlow/Pacific OFF and WB Willow ON	65	0.57	11,186	110	204	1,003	2,951
16053	405/Wardlow/Pacific OFF and WB Willow ON	65	0.57	11,186	110	204	1,003	2,951
16050	WB 405 ON and WB Willow OFF	65	0.80	10,376	109	205	1,049	2,592
16050	WB 405 ON and WB Willow OFF	65	0.80	10,376	109	205	1,049	2,592
16042	EB 405 ON and WB 405 ON	65	0.17	12,373	123	231	1,184	2,505
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	65	0.77	7,010	70	127	668	2,735
15954	Del Amo ON and 405 OFF	65	0.81	11,738	126	240	1,120	2,360
15915	LB Blvd OFF and WB Del Amo ON	65	0.53	12,111	124	249	1,282	2,834
15785	LB Blvd ON and LB Blvd OFF	65	0.53	11,442	118	238	1,248	2,818
15782	Del Amo OFF and Del Amo ON	65	0.24	9,960	107	207	1,030	2,301
15749	LB ON and Del Amo OFF	65	0.56	11,150	123	245	1,252	2,301
15700	Artesia/EB 91 OFF and LB Blvd ON	65	0.36	12,968	132	262	1,318	2,818
15696	SB LB OFF and LB ON	65	0.51	10,242	114	229	1,203	2,233
15655	EB 91 & Artesia ON and NB LB OFF	65	0.18	10,242	114	229	1,203	2,233
15615	WB 91 OFF and Artesia/EB 91 OFF	65	0.24	7,556	73	145	574	1,423
15591	WB 91 ON and EB 91 & Artesia ON	65	0.17	9,740	108	223	1,183	2,212
15588	WB 91 OFF and Artesia/EB 91 OFF	65	0.07	7,556	73	145	574	1,423
15586	EB 91 ON and WB 91 OFF	65	0.34	7,251	70	140	556	1,411
15581	WB 91 OFF and WB 91 ON	65	0.54	5,627	68	141	673	1,448
15552	WB 91/Atlantic ON and EB 91 ON	65	0.25	8,436	81	167	692	1,510
15549	EB 91/Atlantic/Artesia OFF and WB 91 OFF	65	0.34	8,243	102	233	1,163	1,454
15536	Alondra OFF and WB 91/Atlantic ON	65	0.18	8,635	83	169	696	1,510
15497	Alondra ON and EB 91/Atlantic/Artesia OFF	65	0.12	9,353	112	247	1,211	1,454
15489	Alondra ON and Alondra OFF	65	0.51	6,008	59	135	597	1,413
15433	WB Alondra OFF and EB Alondra OFF	65	0.19	8,570	104	239	1,206	1,387
15412	Rosecrans OFF and Alondra ON	65	0.44	6,265	62	140	614	1,413

Table C.3-1D. 2008 Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15412	Rosecrans OFF and Alondra ON	65	0.44	6,265	62	140	614	1,413
15393	EB Rosecrans ON and WB Alondra OFF	65	0.27	9,110	110	251	1,266	1,387
15353	EBnWb 105/Garfield OFF and Rosecrans OFF	65	0.39	2,730	27	63	257	897
15352	WB Rosecrans ON and EB Rosecrans ON	65	0.28	7,842	97	232	1,209	784
15352	WB Rosecrans ON and EB Rosecrans ON	65	0.28	7,842	97	232	1,209	784
15290	105 ON and WB Rosecrans ON	65	0.33	7,842	97	232	1,209	784
15209	MLK ON and 105 ON	65	0.23	1,504	16	33	124	366
15182	Rosecrans ON and EBnWb 105/Garfield OFF	65	1.01	2,696	27	63	256	897
15102	EBnWb 105 ON and Rosecrans ON	65	0.27	5,073	51	111	444	1,290
15081	Rosecrans OFF and MLK ON	65	0.88	1,343	15	31	119	366
14991	105 OFF and Rosecrans OFF	65	0.24	1,343	15	31	119	366
14973	MLK OFF and 105 OFF	65	0.17	3,720	39	81	304	371
14970	Imperial ON and MLK OFF	65	0.08	3,866	41	82	308	371
14964	Imperial OFF and EBnWb 105 ON	65	0.26	12,456	124	271	1,044	1,290
14944	Imperial ON and Imperial OFF	65	0.71	11,977	119	264	1,022	1,290
14898	Wright Rd OFF and Imperial OFF	65	0.73	3,857	40	82	308	371
14886	WB Atlantic ON and EB Atlantic ON	65	0.19	3,340	32	64	214	81
14864	WB Atlantic OFF and EB Atlantic OFF	65	0.31	16,757	161	332	1,240	1,133
14858	Atlantic/Bandini ON and WB Atlantic OFF	65	0.20	16,010	150	307	1,134	181
14828	Bandini/Atlantic OFF and WB Atlantic ON	65	0.43	3,340	32	64	214	81
14817	Washington OFF and Atlantic/Bandini ON	65	0.21	16,505	156	318	1,199	181
14799	SB i5 Off and Eastern ON	65	0.10	7,012	69	132	530	2
14794	Eastern ON and SB i5 ON	65	0.40	7,524	73	136	535	2
14791	Olympic ON and NB i5 ON	65	0.18	11,972	114	220	834	39
14790	Washington ON and Bandini/Atlantic OFF	65	0.16	9,371	100	182	746	98
14784	Washington ON and Washington OFF	65	0.25	16,056	147	302	1,129	67
14776	SR60 Off and Olympic ON	65	0.32	12,972	126	234	907	39
14775	EasternWhittierOlympic OFF and SB i5 Off	65	0.31	7,630	75	148	595	2
14772	Washington Off and Washington ON	65	0.30	9,060	90	174	714	5
14768	NB i5 ON and Olympic Off	65	0.26	8,107	77	142	542	39
14765	SB i5 ON and Washington Off	65	0.34	13,336	138	284	1,234	5
14761	NB i5 Off and Washington ON	65	0.39	19,945	191	403	1,649	67
14748	Olympic Off and NB i5 Off	65	0.21	9,368	88	154	566	39
14740	SR60 ON and EasternWhittierOlympic OFF	65	0.21	9,139	95	172	692	2
14729	3rd / Ford Off and SR60 Off	65	0.20	9,612	91	171	577	37

Table C.3-1D. 2008 Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
14712	Firestone ON and Firestone OFF	65	0.69	11,766	116	253	957	1,159
14705	Firestone OFF and Firestone ON	65	0.73	3,153	33	66	235	328
14700	Florence OFF and Firestone ON	65	0.61	14,889	150	318	1,228	1,159
14698	3rd / Ford ON and 3rd / Ford Off	65	0.02	8,401	80	160	542	34
14620	Third Off and SR60 ON	65	0.36	7,221	73	128	413	2
14610	Florence ON and Firestone OFF	65	0.62	4,527	45	89	319	328
14604	Florence ON and Florence OFF	65	0.66	13,551	134	291	1,116	1,133
14541	Florence OFF and Florence ON	65	0.74	3,340	32	64	214	81

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the digitization of the roadways from the aerial. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-2A. Alternative 1 Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
1658097	WB Anaheim ON and WB Anaheim OFF	48	0.14	11,350	98	103	227	3,607
1658095	EB Anaheim OFF and Shoreline Dr OFF	38	0.02	11,918	65	67	159	4,007
1658094	WB Anaheim OFF and EB Anaheim ON	47	0.15	11,812	101	105	230	3,609
1657678	WB PCH ON and WB PCH OFF	33	0.13	11,316	99	116	277	4,168
1657672	WB Willow ON and WB Willow OFF	29	0.18	12,963	106	127	296	4,175
1657669	EB Willow OFF and EB Willow ON	27	0.15	12,475	83	102	262	5,183
1657668	WB Willow OFF and EB Willow ON	27	0.15	13,463	106	127	296	4,175
1657665	WB Del Amo OFF and EB Del Amo ON	38	0.19	14,628	135	174	377	4,612
1657662	EB Del Amo ON and EB Del Amo OFF	30	0.15	14,015	123	159	344	4,612
1657654	Del Amo ON and 405 OFF	30	0.17	17,728	103	132	280	4,815
1657653	WB Del Amo ON and WB Del Amo OFF	31	0.24	13,676	130	167	365	4,591
1657648	EB Alondra OFF and Alondra ON	45	0.27	23,623	153	209	414	3,234
1656691	405 OFF and EB 405 ON	47	0.50	6,988	37	44	118	4,572
1643216	Shoreline Dr ON and Anaheim OFF	60	0.08	3,196	21	25	63	2,995
1643214	Shoreline Dr OFF and EB Anaheim ON	59	0.02	3,086	31	37	101	4,006
1643213	Shoreline Dr OFF	64	0.32	8,832	30	29	63	0
1643212	EB Anaheim ON and Pico OFF	58	0.19	3,841	34	39	104	4,217
127443	Pico ON and Harbor Scenic Drive ON	64	0.46	3,123	22	25	63	2,770
127435	Anaheim OFF and Pico ON	64	0.16	3,306	22	25	63	3,085
127416	NB LB OFF and SB LB OFF	40	0.08	18,062	106	138	328	4,602
97956	Pico OFF and Harbor Scenic Dr OFF	62	0.43	3,090	34	39	104	3,300
88576	Firestone ON and Wright Rd OFF	42	0.69	21,410	178	238	411	2,080
88575	Firestone OFF and Imperial ON	31	0.78	20,334	202	287	520	1,935
88574	EB Atlantic ON and Florence OFF	44	1.44	17,921	162	218	386	1,582
88574	EB Atlantic ON and Florence OFF	44	1.44	17,921	162	218	386	1,582
88573	EB Atlantic OFF and Florence ON	22	1.63	22,410	224	312	555	1,581
88573	EB Atlantic OFF and Florence ON	22	1.63	22,410	224	312	555	1,581
16266	405 OFF and EB 405 ON	47	0.32	6,988	37	44	118	4,572
16254	EB 405 ON and Wardlow/WB 405 ON	38	0.09	11,813	102	134	269	3,797
16247	EB Del Amo OFF and EB 405 ON	34	0.69	14,957	130	169	354	4,651
16237	PCH OFF and PCH ON	36	0.42	11,933	69	83	209	4,524
16187	PCH ON and WB Anaheim OFF	29	0.13	13,638	84	89	216	4,697
16185	WB PCH OFF and EB PCH ON	28	0.12	12,354	113	123	282	4,183
16174	WB Anaheim ON and EB Anaheim OFF	34	0.10	12,976	72	76	179	4,169

Table C.3-2A. Alternative 1 Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16168	WB Anaheim OFF and WB Anaheim ON	34	0.11	12,309	69	73	172	4,149
16157	EB PCH ON and PCH OFF	35	0.14	11,533	100	105	232	3,660
16152	Shoreline Dr ON	53	0.35	7,947	65	65	135	231
16135	EB Anaheim ON and Shoreline Dr ON	44	0.01	11,143	90	92	193	3,227
16134	PCH OFF and WB Anaheim ON	45	0.09	12,913	105	110	242	3,671
16123	EB Willow OFF and WB PCH ON	29	0.54	12,750	106	127	297	4,175
16121	WB Willow ON and EB Willow OFF	25	0.15	13,135	84	103	264	5,183
16086	EB Willow ON and PCH OFF	27	0.57	13,634	83	102	262	5,183
16073	WB Willow OFF and WB Willow ON	25	0.19	12,269	79	97	249	5,072
16063	EB Willow ON and EB Willow OFF	29	0.19	12,250	106	127	296	4,175
16053	405/Wardlow/Pacific OFF and WB Willow ON	35	0.57	14,494	111	131	303	4,175
16053	405/Wardlow/Pacific OFF and WB Willow ON	35	0.57	14,494	111	131	303	4,175
16050	WB 405 ON and WB Willow OFF	23	0.80	14,384	79	97	249	5,072
16050	WB 405 ON and WB Willow OFF	23	0.80	14,384	79	97	249	5,072
16042	EB 405 ON and WB 405 ON	31	0.17	11,341	63	77	197	4,973
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	40	0.77	7,728	63	75	187	3,797
15954	Del Amo ON and 405 OFF	30	0.81	17,728	103	132	280	4,815
15915	LB Blvd OFF and WB Del Amo ON	36	0.53	14,558	144	188	417	4,591
15785	LB Blvd ON and LB Blvd OFF	40	0.53	13,283	134	176	401	4,546
15782	Del Amo OFF and Del Amo ON	36	0.24	15,099	79	99	228	4,637
15749	LB ON and Del Amo OFF	30	0.56	18,640	109	141	330	4,637
15700	Artesia/EB 91 OFF and LB Blvd ON	43	0.36	14,900	149	193	425	4,546
15696	SB LB OFF and LB ON	32	0.51	17,144	101	133	317	4,602
15655	EB 91 & Artesia ON and NB LB OFF	37	0.18	19,525	114	150	346	4,602
15615	WB 91 OFF and Artesia/EB 91 OFF	47	0.24	12,113	127	167	335	2,847
15591	WB 91 ON and EB 91 & Artesia ON	32	0.17	16,747	101	136	319	4,492
15588	WB 91 OFF and Artesia/EB 91 OFF	47	0.07	12,113	127	167	335	2,847
15586	EB 91 ON and WB 91 OFF	39	0.34	10,192	113	150	302	2,819
15581	WB 91 OFF and WB 91 ON	37	0.54	10,988	59	78	170	3,187
15552	WB 91/Atlantic ON and EB 91 ON	41	0.25	14,684	150	203	389	3,003
15549	EB 91/Atlantic/Artesia OFF and WB 91 OFF	49	0.34	19,577	112	153	311	3,357
15536	Alondra OFF and WB 91/Atlantic ON	53	0.18	18,629	180	241	459	3,011
15497	Alondra ON and EB 91/Atlantic/Artesia OFF	46	0.12	25,349	166	220	429	3,362
15489	Alondra ON and Alondra OFF	52	0.51	17,161	167	232	453	2,936

Table C.3-2A. Alternative 1 Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15433	WB Alondra OFF and EB Alondra OFF	43	0.19	24,444	161	218	432	3,234
15412	Rosecrans OFF and Alondra ON	53	0.44	19,278	182	252	493	2,936
15412	Rosecrans OFF and Alondra ON	53	0.44	19,278	182	252	493	2,936
15393	EB Rosecrans ON and WB Alondra OFF	47	0.27	25,844	173	234	464	3,234
15353	EBnWb 105/Garfield OFF and Rosecrans OFF	56	0.39	17,169	166	233	458	2,792
15352	WB Rosecrans ON and EB Rosecrans ON	50	0.28	23,722	161	223	450	3,145
15352	WB Rosecrans ON and EB Rosecrans ON	50	0.28	23,722	161	223	450	3,145
15290	105 ON and WB Rosecrans ON	50	0.33	22,628	156	216	436	3,134
15209	MLK ON and 105 ON	57	0.23	17,079	110	149	259	2,138
15182	Rosecrans ON and EBnWb 105/Garfield OFF	58	1.01	12,168	125	172	284	1,922
15102	EBnWb 105 ON and Rosecrans ON	54	0.27	13,436	135	183	301	1,973
15081	Rosecrans OFF and MLK ON	59	0.88	15,420	102	141	249	2,090
14991	105 OFF and Rosecrans OFF	59	0.24	16,721	109	152	266	2,090
14973	MLK OFF and 105 OFF	53	0.17	22,966	170	234	403	2,092
14970	Imperial ON and MLK OFF	50	0.08	23,837	180	241	414	2,092
14964	Imperial OFF and EBnWb 105 ON	42	0.26	20,186	201	282	496	1,973
14944	Imperial ON and Imperial OFF	41	0.71	17,571	179	259	466	1,935
14898	Wright Rd OFF and Imperial OFF	46	0.73	21,410	178	238	411	2,080
14886	WB Atlantic ON and EB Atlantic ON	44	0.19	16,777	158	213	378	1,582
14864	WB Atlantic OFF and EB Atlantic OFF	28	0.31	21,199	215	299	531	1,277
14858	Atlantic/Bandini ON and WB Atlantic OFF	39	0.20	18,784	197	272	483	675
14828	Bandini/Atlantic OFF and WB Atlantic ON	47	0.43	16,661	152	205	363	698
14817	Washington OFF and Atlantic/Bandini ON	30	0.21	21,980	230	311	579	675
14799	SB i5 Off and Eastern ON	35	0.10	14,698	132	182	362	274
14794	Eastern ON and SB i5 ON	29	0.40	16,096	141	188	367	283
14791	Olympic ON and NB i5 ON	27	0.18	17,156	194	295	642	288
14790	Washington ON and Bandini/Atlantic OFF	44	0.16	21,791	199	265	498	712
14784	Washington ON and Washington OFF	34	0.25	20,716	206	280	521	444
14776	SR60 Off and Olympic ON	33	0.32	18,479	212	317	692	288
14775	EasternWhittierOlympic OFF and SB i5 Off	32	0.31	20,242	190	276	572	274
14772	Washington Off and Washington ON	47	0.30	21,100	180	242	455	388
14768	NB i5 ON and Olympic Off	34	0.26	12,953	158	218	425	288
14765	SB i5 ON and Washington Off	42	0.34	22,660	210	287	553	388
14761	NB i5 Off and Washington ON	22	0.39	21,941	235	325	619	444

Table C.3-2A. Alternative 1 Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
14748	Olympic Off and NB I5 Off	28	0.21	14,457	170	228	434	297
14740	SR60 ON and EasternWhittierOlympic OFF	34	0.21	21,778	205	298	625	274
14729	3rd / Ford Off and SR60 Off	37	0.20	11,748	137	206	433	219
14712	Firestone ON and Firestone OFF	36	0.69	18,365	187	269	489	1,704
14705	Firestone OFF and Firestone ON	49	0.73	17,120	149	204	356	1,743
14700	Florence OFF and Firestone ON	24	0.61	21,898	219	310	563	1,704
14698	3rd / Ford ON and 3rd / Ford Off	43	0.02	11,385	131	203	433	213
14620	Third Off and SR60 ON	37	0.36	13,944	122	179	372	214
14610	Florence ON and Firestone OFF	44	0.62	19,316	173	235	423	1,743
14604	Florence ON and Florence OFF	33	0.66	19,401	202	291	528	1,581
14541	Florence OFF and Florence ON	54	0.74	15,371	136	186	326	1,546

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the digitization of the roadways from the aerial. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-2B. Alternative 1 Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
1658097	WB Anaheim ON and WB Anaheim OFF	48	0.14	12,449	222	239	501	10,360
1658095	EB Anaheim OFF and Shoreline Dr OFF	45	0.02	18,106	228	242	523	9,005
1658094	WB Anaheim OFF and EB Anaheim ON	47	0.15	14,943	248	264	551	10,375
1657678	WB PCH ON and WB PCH OFF	33	0.13	14,831	271	327	731	12,453
1657672	WB Willow ON and WB Willow OFF	30	0.18	17,158	289	355	790	12,894
1657669	EB Willow OFF and EB Willow ON	31	0.15	20,049	302	376	876	12,271
1657668	WB Willow OFF and EB Willow ON	29	0.15	18,157	289	355	790	12,894
1657665	WB Del Amo OFF and EB Del Amo ON	44	0.19	22,825	434	549	1,069	13,589
1657662	EB Del Amo ON and EB Del Amo OFF	37	0.15	20,290	359	454	884	13,589
1657654	Del Amo ON and 405 OFF	39	0.17	24,076	392	491	918	11,574
1657653	WB Del Amo ON and WB Del Amo OFF	37	0.24	21,449	418	528	1,029	13,509
1657648	EB Alondra OFF and Alondra ON	59	0.27	30,631	468	633	1,106	7,398
1656691	405 OFF and EB 405 ON	47	0.50	11,385	166	197	460	10,779
1643216	Shoreline Dr ON and Anaheim OFF	57	0.08	3,163	44	56	136	7,839
1643214	Shoreline Dr OFF and EB Anaheim ON	60	0.02	7,661	102	118	274	8,505
1643213	Shoreline Dr OFF	65	0.32	10,445	121	123	255	500
1643212	EB Anaheim ON and Pico OFF	59	0.19	9,298	116	124	282	9,395
127443	Pico ON and Harbor Scenic Drive ON	64	0.46	3,114	45	56	136	7,107
127435	Anaheim OFF and Pico ON	63	0.16	3,671	45	56	136	8,330
127416	NB LB OFF and SB LB OFF	49	0.08	25,153	417	538	1,132	11,149
97956	Pico OFF and Harbor Scenic Dr OFF	62	0.43	8,035	116	124	282	7,050
88576	Firestone ON and Wright Rd OFF	58	0.69	35,776	631	838	1,264	4,849
88575	Firestone OFF and Imperial ON	46	0.78	33,055	644	915	1,535	7,974
88574	EB Atlantic ON and Florence OFF	58	1.44	32,630	587	784	1,225	3,770
88574	EB Atlantic ON and Florence OFF	58	1.44	32,630	587	784	1,225	3,770
88573	EB Atlantic OFF and Florence ON	39	1.63	31,847	666	929	1,547	6,605
88573	EB Atlantic OFF and Florence ON	39	1.63	31,847	666	929	1,547	6,605
16266	405 OFF and EB 405 ON	47	0.32	11,385	166	197	460	10,779
16254	EB 405 ON and Wardlow/WB 405 ON	44	0.09	16,457	271	349	609	11,549
16247	EB Del Amo OFF and EB 405 ON	40	0.69	22,377	394	502	931	13,747
16237	PCH OFF and PCH ON	40	0.42	17,460	243	296	673	10,389
16187	PCH ON and WB Anaheim OFF	34	0.13	20,972	294	323	711	10,991
16185	WB PCH OFF and EB PCH ON	30	0.12	16,570	318	350	753	12,548
16174	WB Anaheim ON and EB Anaheim OFF	40	0.10	19,679	251	271	583	9,513
16168	WB Anaheim OFF and WB Anaheim ON	40	0.11	18,919	249	269	578	9,481

Table C.3-2B. Alternative 1 Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16157	EB PCH ON and PCH OFF	37	0.14	14,137	241	258	535	10,343
16152	Shoreline Dr ON	57	0.35	9,380	126	127	249	813
16135	EB Anaheim ON and Shoreline Dr ON	43	0.01	12,543	179	186	373	8,651
16134	PCH OFF and WB Anaheim ON	47	0.09	14,753	249	267	552	10,418
16123	EB Willow OFF and WB PCH ON	30	0.54	17,070	296	364	809	12,899
16121	WB Willow ON and EB Willow OFF	27	0.15	22,603	313	384	882	12,271
16086	EB Willow ON and PCH OFF	31	0.57	21,098	307	382	892	12,328
16073	WB Willow OFF and WB Willow ON	27	0.19	21,943	312	382	879	12,261
16063	EB Willow ON and EB Willow OFF	30	0.19	16,510	289	355	790	12,894
16053	405/Wardlow/Pacific OFF and WB Willow ON	36	0.57	20,233	306	370	807	12,894
16053	405/Wardlow/Pacific OFF and WB Willow ON	36	0.57	20,233	306	370	807	12,894
16050	WB 405 ON and WB Willow OFF	27	0.80	23,488	315	386	887	12,261
16050	WB 405 ON and WB Willow OFF	27	0.80	23,488	315	386	887	12,261
16042	EB 405 ON and WB 405 ON	31	0.17	16,883	227	279	640	11,754
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	40	0.77	9,547	158	187	422	11,549
15954	Del Amo ON and 405 OFF	39	0.81	24,076	392	491	918	11,574
15915	LB Blvd OFF and WB Del Amo ON	42	0.53	22,412	437	560	1,112	13,509
15785	LB Blvd ON and LB Blvd OFF	45	0.53	21,106	409	526	1,080	13,378
15782	Del Amo OFF and Del Amo ON	45	0.24	20,446	336	414	837	11,238
15749	LB ON and Del Amo OFF	40	0.56	24,961	423	537	1,111	11,285
15700	Artesia/EB 91 OFF and LB Blvd ON	48	0.36	24,026	458	583	1,154	13,378
15696	SB LB OFF and LB ON	42	0.51	23,190	396	511	1,076	11,149
15655	EB 91 & Artesia ON and NB LB OFF	48	0.18	27,179	443	569	1,182	11,149
15615	WB 91 OFF and Artesia/EB 91 OFF	55	0.24	19,867	403	516	912	11,193
15591	WB 91 ON and EB 91 & Artesia ON	43	0.17	22,801	386	509	1,071	10,713
15588	WB 91 OFF and Artesia/EB 91 OFF	55	0.07	19,867	403	516	912	11,193
15586	EB 91 ON and WB 91 OFF	49	0.34	16,253	355	455	812	10,989
15581	WB 91 OFF and WB 91 ON	51	0.54	14,972	208	268	491	7,479
15552	WB 91/Atlantic ON and EB 91 ON	52	0.25	25,736	502	681	1,237	11,806
15549	EB 91/Atlantic/Artesia OFF and WB 91 OFF	60	0.34	23,647	370	492	871	7,791
15536	Alondra OFF and WB 91/Atlantic ON	60	0.18	33,231	619	827	1,480	11,840
15497	Alondra ON and EB 91/Atlantic/Artesia OFF	59	0.12	33,708	516	669	1,142	7,802
15489	Alondra ON and Alondra OFF	60	0.51	30,252	558	789	1,464	11,519
15433	WB Alondra OFF and EB Alondra OFF	58	0.19	32,244	496	666	1,163	7,398
15412	Rosecrans OFF and Alondra ON	61	0.44	33,568	612	862	1,594	11,519

Table C.3-2B. Alternative 1 Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15412	Rosecrans OFF and Alondra ON	61	0.44	33,568	612	862	1,594	11,519
15393	EB Rosecrans ON and WB Alondra OFF	60	0.27	34,124	524	702	1,223	7,398
15353	EBnWb 105/Garfield OFF and Rosecrans OFF	63	0.39	30,389	560	804	1,511	11,059
15352	WB Rosecrans ON and EB Rosecrans ON	61	0.28	32,297	492	676	1,203	7,123
15352	WB Rosecrans ON and EB Rosecrans ON	61	0.28	32,297	492	676	1,203	7,123
15290	105 ON and WB Rosecrans ON	61	0.33	31,739	486	668	1,189	7,117
15209	MLK ON and 105 ON	64	0.23	23,938	390	518	729	4,902
15182	Rosecrans ON and EBnWb 105/Garfield OFF	63	1.01	21,533	400	565	872	7,937
15102	EBnWb 105 ON and Rosecrans ON	62	0.27	22,959	435	592	905	8,024
15081	Rosecrans OFF and MLK ON	64	0.88	22,499	370	502	712	4,879
14991	105 OFF and Rosecrans OFF	64	0.24	23,927	387	524	744	4,879
14973	MLK OFF and 105 OFF	62	0.17	36,053	605	826	1,248	4,883
14970	Imperial ON and MLK OFF	61	0.08	38,006	643	855	1,291	4,883
14964	Imperial OFF and EBnWb 105 ON	55	0.26	35,095	657	909	1,462	8,025
14944	Imperial ON and Imperial OFF	53	0.71	29,090	570	807	1,322	7,974
14898	Wright Rd OFF and Imperial OFF	59	0.73	35,776	631	838	1,264	4,849
14886	WB Atlantic ON and EB Atlantic ON	58	0.19	29,535	563	752	1,177	3,770
14864	WB Atlantic OFF and EB Atlantic OFF	44	0.31	30,702	642	894	1,485	5,636
14858	Atlantic/Bandini ON and WB Atlantic OFF	52	0.20	29,138	605	841	1,398	3,968
14828	Bandini/Atlantic OFF and WB Atlantic ON	60	0.43	29,332	540	721	1,124	1,377
14817	Washington OFF and Atlantic/Bandini ON	45	0.21	37,318	764	1,032	1,787	3,968
14799	SB i5 Off and Eastern ON	56	0.10	21,382	420	547	924	288
14794	Eastern ON and SB i5 ON	53	0.40	23,732	449	569	942	312
14791	Olympic ON and NB i5 ON	41	0.18	27,889	599	876	1,669	2,994
14790	Washington ON and Bandini/Atlantic OFF	58	0.16	35,347	650	852	1,433	1,404
14784	Washington ON and Washington OFF	48	0.25	35,234	693	939	1,631	3,322
14776	SR60 Off and Olympic ON	45	0.32	30,211	647	931	1,779	2,994
14775	EasternWhittierOlympic OFF and SB i5 Off	54	0.31	29,540	551	761	1,328	288
14772	Washington Off and Washington ON	60	0.30	33,636	598	791	1,333	482
14768	NB i5 ON and Olympic Off	49	0.26	21,203	493	661	1,170	2,993
14765	SB i5 ON and Washington Off	57	0.34	35,735	683	924	1,596	482
14761	NB i5 Off and Washington ON	36	0.39	37,119	777	1,072	1,894	3,322
14748	Olympic Off and NB i5 Off	43	0.21	23,625	535	688	1,186	3,012
14740	SR60 ON and EasternWhittierOlympic OFF	54	0.21	32,325	611	831	1,473	288
14729	3rd / Ford Off and SR60 Off	49	0.20	19,367	429	607	1,069	2,791

Table C.3-2B. Alternative 1 Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM)¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
14712	Firestone ON and Firestone OFF	50	0.69	27,541	560	805	1,356	7,027
14705	Firestone OFF and Firestone ON	61	0.73	30,503	549	739	1,123	4,065
14700	Florence OFF and Firestone ON	41	0.61	33,342	682	971	1,640	7,027
14698	3rd / Ford ON and 3rd / Ford Off	54	0.02	18,638	404	597	1,070	2,777
14620	Third Off and SR60 ON	53	0.36	20,185	351	473	790	166
14610	Florence ON and Firestone OFF	58	0.62	35,636	639	864	1,374	4,065
14604	Florence ON and Florence OFF	47	0.66	26,945	589	853	1,448	6,605
14541	Florence OFF and Florence ON	62	0.74	28,241	525	711	1,085	3,505

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the digitization of the roadways from the aerial. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-2C. Alternative 1 Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
1658097	WB Anaheim ON and WB Anaheim OFF	36	0.14	11,703	72	109	217	6,199
1658095	EB Anaheim OFF and Shoreline Dr OFF	38	0.02	13,186	65	99	197	3,777
1658094	WB Anaheim OFF and EB Anaheim ON	33	0.15	13,282	83	122	236	6,208
1657678	WB PCH ON and WB PCH OFF	25	0.13	10,787	78	134	298	6,882
1657672	WB Willow ON and WB Willow OFF	23	0.18	12,725	85	149	330	6,929
1657669	EB Willow OFF and EB Willow ON	28	0.15	14,337	101	176	380	4,751
1657668	WB Willow OFF and EB Willow ON	21	0.15	13,463	85	149	330	6,929
1657665	WB Del Amo OFF and EB Del Amo ON	30	0.19	19,214	141	269	558	7,576
1657662	EB Del Amo ON and EB Del Amo OFF	22	0.15	16,805	124	236	489	7,576
1657654	Del Amo ON and 405 OFF	25	0.17	2,965	117	223	434	4,583
1657653	WB Del Amo ON and WB Del Amo OFF	24	0.24	18,175	134	254	534	7,545
1657648	EB Alondra OFF and Alondra ON	34	0.27	24,954	147	305	583	3,265
1656691	405 OFF and EB 405 ON	47	0.50	7,916	57	98	216	4,447
1643216	Shoreline Dr ON and Anaheim OFF	57	0.08	3,530	19	36	93	5,833
1643214	Shoreline Dr OFF and EB Anaheim ON	64	0.02	1,560	30	52	128	3,777
1643213	Shoreline Dr OFF	61	0.32	11,627	30	44	78	0
1643212	EB Anaheim ON and Pico OFF	63	0.19	2,629	37	59	139	4,190
127443	Pico ON and Harbor Scenic Drive ON	64	0.46	3,443	20	35	87	4,843
127435	Anaheim OFF and Pico ON	63	0.16	4,008	21	37	94	5,956
127416	NB LB OFF and SB LB OFF	37	0.08	21,059	127	249	532	4,477
97956	Pico OFF and Harbor Scenic Dr OFF	64	0.43	1,703	37	59	139	3,455
88576	Firestone ON and Wright Rd OFF	25	0.69	31,435	197	396	690	2,563
88575	Firestone OFF and Imperial ON	25	0.78	23,365	239	502	919	5,119
88574	EB Atlantic ON and Florence OFF	24	1.44	29,505	192	389	678	2,213
88574	EB Atlantic ON and Florence OFF	24	1.44	29,505	192	389	678	2,213
88573	EB Atlantic OFF and Florence ON	19	1.63	21,616	245	511	920	4,520
88573	EB Atlantic OFF and Florence ON	19	1.63	21,616	245	511	920	4,520
16266	405 OFF and EB 405 ON	47	0.32	7,916	57	98	216	4,447
16254	EB 405 ON and Wardlow/WB 405 ON	31	0.09	12,970	96	188	359	6,566
16247	EB Del Amo OFF and EB 405 ON	26	0.69	19,247	141	273	543	7,653
16237	PCH OFF and PCH ON	36	0.42	12,782	70	118	249	4,099
16187	PCH ON and WB Anaheim OFF	29	0.13	15,734	87	135	275	4,237
16185	WB PCH OFF and EB PCH ON	21	0.12	11,886	88	141	300	6,893
16174	WB Anaheim ON and EB Anaheim OFF	34	0.10	14,749	71	109	212	3,847
16168	WB Anaheim OFF and WB Anaheim ON	34	0.11	14,074	68	105	205	3,836

Table C.3-2C. Alternative 1 Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16157	EB PCH ON and PCH OFF	26	0.14	10,650	73	114	234	6,133
16152	Shoreline Dr ON	33	0.35	8,289	45	61	101	35
16135	EB Anaheim ON and Shoreline Dr ON	27	0.01	11,819	70	100	185	5,867
16134	PCH OFF and WB Anaheim ON	34	0.09	13,197	82	123	248	6,324
16123	EB Willow OFF and WB PCH ON	22	0.54	12,190	85	149	331	6,930
16121	WB Willow ON and EB Willow OFF	25	0.15	16,121	106	181	385	4,751
16086	EB Willow ON and PCH OFF	27	0.57	15,873	101	176	380	4,751
16073	WB Willow OFF and WB Willow ON	25	0.19	15,645	104	178	381	4,688
16063	EB Willow ON and EB Willow OFF	22	0.19	11,629	85	149	330	6,929
16053	405/Wardlow/Pacific OFF and WB Willow ON	28	0.57	14,292	88	152	332	6,929
16053	405/Wardlow/Pacific OFF and WB Willow ON	28	0.57	14,292	88	152	332	6,929
16050	WB 405 ON and WB Willow OFF	22	0.80	17,478	104	179	381	4,688
16050	WB 405 ON and WB Willow OFF	22	0.80	17,478	104	179	381	4,688
16042	EB 405 ON and WB 405 ON	31	0.17	13,615	86	147	311	4,616
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	34	0.77	6,762	50	87	204	6,566
15954	Del Amo ON and 405 OFF	25	0.81	2,965	117	223	434	4,583
15915	LB Blvd OFF and WB Del Amo ON	28	0.53	19,113	138	265	565	7,545
15785	LB Blvd ON and LB Blvd OFF	31	0.53	17,867	130	252	549	7,507
15782	Del Amo OFF and Del Amo ON	33	0.24	17,639	103	195	399	4,505
15749	LB ON and Del Amo OFF	27	0.56	20,387	129	252	531	4,514
15700	Artesia/EB 91 OFF and LB Blvd ON	34	0.36	20,317	143	276	583	7,507
15696	SB LB OFF and LB ON	30	0.51	18,840	121	240	513	4,477
15655	EB 91 & Artesia ON and NB LB OFF	34	0.18	22,019	134	264	551	4,477
15615	WB 91 OFF and Artesia/EB 91 OFF	35	0.24	15,048	114	224	439	5,827
15591	WB 91 ON and EB 91 & Artesia ON	32	0.17	18,644	115	230	495	4,386
15588	WB 91 OFF and Artesia/EB 91 OFF	35	0.07	15,048	114	224	439	5,827
15586	EB 91 ON and WB 91 OFF	27	0.34	12,653	103	203	403	5,776
15581	WB 91 OFF and WB 91 ON	36	0.54	12,259	66	132	256	3,295
15552	WB 91/Atlantic ON and EB 91 ON	25	0.25	22,102	164	340	674	6,072
15549	EB 91/Atlantic/Artesia OFF and WB 91 OFF	46	0.34	18,768	97	199	380	3,360
15536	Alondra OFF and WB 91/Atlantic ON	38	0.18	27,787	224	452	885	6,081
15497	Alondra ON and EB 91/Atlantic/Artesia OFF	36	0.12	26,955	158	319	601	3,362
15489	Alondra ON and Alondra OFF	36	0.51	24,686	212	436	863	5,946
15433	WB Alondra OFF and EB Alondra OFF	31	0.19	26,457	156	319	606	3,266
15412	Rosecrans OFF and Alondra ON	39	0.44	27,192	228	466	919	5,947

Table C.3-2C. Alternative 1 Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15412	Rosecrans OFF and Alondra ON	39	0.44	27,192	228	466	919	5,947
15393	EB Rosecrans ON and WB Alondra OFF	34	0.27	28,092	166	340	650	3,266
15353	EBnWb 105/Garfield OFF and Rosecrans OFF	43	0.39	23,217	209	432	862	5,762
15352	WB Rosecrans ON and EB Rosecrans ON	38	0.28	26,551	157	326	633	3,226
15352	WB Rosecrans ON and EB Rosecrans ON	38	0.28	26,551	157	326	633	3,226
15290	105 ON and WB Rosecrans ON	38	0.33	25,861	154	320	623	3,218
15209	MLK ON and 105 ON	47	0.23	19,827	113	237	402	2,631
15182	Rosecrans ON and EBnWb 105/Garfield OFF	51	1.01	14,414	138	281	476	5,190
15102	EBnWb 105 ON and Rosecrans ON	45	0.27	16,179	152	305	510	5,227
15081	Rosecrans OFF and MLK ON	50	0.88	18,576	106	225	387	2,605
14991	105 OFF and Rosecrans OFF	49	0.24	20,991	114	241	414	2,605
14973	MLK OFF and 105 OFF	41	0.17	30,570	189	387	676	2,605
14970	Imperial ON and MLK OFF	36	0.08	32,444	200	401	695	2,605
14964	Imperial OFF and EBnWb 105 ON	32	0.26	25,422	241	504	926	5,227
14944	Imperial ON and Imperial OFF	32	0.71	19,891	215	464	872	5,116
14898	Wright Rd OFF and Imperial OFF	31	0.73	31,435	197	396	690	2,563
14886	WB Atlantic ON and EB Atlantic ON	24	0.19	26,729	181	367	639	1,811
14864	WB Atlantic OFF and EB Atlantic OFF	23	0.31	20,775	226	470	849	3,893
14858	Atlantic/Bandini ON and WB Atlantic OFF	31	0.20	19,960	210	437	790	3,068
14828	Bandini/Atlantic OFF and WB Atlantic ON	26	0.43	26,040	169	342	596	541
14817	Washington OFF and Atlantic/Bandini ON	22	0.21	25,492	255	522	979	3,068
14799	SB i5 Off and Eastern ON	24	0.10	17,715	161	323	601	188
14794	Eastern ON and SB i5 ON	19	0.40	19,759	174	341	626	195
14791	Olympic ON and NB i5 ON	16	0.18	24,247	262	588	1,247	2,658
14790	Washington ON and Bandini/Atlantic OFF	26	0.16	30,406	203	405	731	548
14784	Washington ON and Washington OFF	25	0.25	23,977	207	426	804	2,780
14776	SR60 Off and Olympic ON	20	0.32	25,867	275	612	1,297	2,658
14775	EasternWhittierOlympic OFF and SB i5 Off	21	0.31	27,070	250	550	1,107	188
14772	Washington Off and Washington ON	29	0.30	28,023	166	333	602	267
14768	NB i5 ON and Olympic Off	20	0.26	16,500	204	419	829	2,658
14765	SB i5 ON and Washington Off	25	0.34	29,018	235	475	868	267
14761	NB i5 Off and Washington ON	14	0.39	26,128	271	564	1,079	2,780
14748	Olympic Off and NB i5 Off	15	0.21	19,190	218	436	843	2,670
14740	SR60 ON and EasternWhittierOlympic OFF	24	0.21	29,171	273	609	1,246	188
14729	3rd / Ford Off and SR60 Off	25	0.20	17,024	207	454	914	2,513

Table C.3-2C. Alternative 1 Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
14712	Firestone ON and Firestone OFF	29	0.69	17,136	207	440	813	4,688
14705	Firestone OFF and Firestone ON	32	0.73	26,510	171	350	617	2,293
14700	Florence OFF and Firestone ON	20	0.61	21,270	240	506	925	4,688
14698	3rd / Ford ON and 3rd / Ford Off	31	0.02	14,994	195	440	901	2,500
14620	Third Off and SR60 ON	30	0.36	15,733	121	258	483	86
14610	Florence ON and Firestone OFF	25	0.62	31,997	201	407	711	2,323
14604	Florence ON and Florence OFF	28	0.66	17,862	218	468	865	4,520
14541	Florence OFF and Florence ON	37	0.74	25,167	164	339	599	2,188

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the digitization of the roadways from the aerial. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-2D. Alternative 1 Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
1658097	WB Anaheim ON and WB Anaheim OFF	64	0.14	8,636	84	134	699	6,259
1658095	EB Anaheim OFF and Shoreline Dr OFF	64	0.02	8,373	81	114	561	4,872
1658094	WB Anaheim OFF and EB Anaheim ON	64	0.15	9,248	94	140	715	6,316
1657678	WB PCH ON and WB PCH OFF	62	0.13	9,712	93	167	885	8,138
1657672	WB Willow ON and WB Willow OFF	60	0.18	12,778	103	190	1,000	8,624
1657669	EB Willow OFF and EB Willow ON	61	0.15	9,851	106	196	1,066	8,997
1657668	WB Willow OFF and EB Willow ON	60	0.15	13,062	103	190	1,000	8,624
1657665	WB Del Amo OFF and EB Del Amo ON	63	0.19	17,364	163	327	1,645	8,365
1657662	EB Del Amo ON and EB Del Amo OFF	63	0.15	15,903	144	283	1,373	8,365
1657654	Del Amo ON and 405 OFF	62	0.17	16,326	151	294	1,415	8,511
1657653	WB Del Amo ON and WB Del Amo OFF	62	0.24	17,364	163	327	1,645	8,365
1657648	EB Alondra OFF and Alondra ON	65	0.27	17,193	172	366	1,571	4,821
1656691	405 OFF and EB 405 ON	62	0.50	13,409	111	199	1,123	8,499
1643216	Shoreline Dr ON and Anaheim OFF	65	0.08	972	14	24	142	5,106
1643214	Shoreline Dr OFF and EB Anaheim ON	65	0.02	1,599	13	24	155	4,406
1643213	Shoreline Dr OFF	65	0.32	6,773	68	91	406	467
1643212	EB Anaheim ON and Pico OFF	65	0.19	1,734	15	26	162	4,539
127443	Pico ON and Harbor Scenic Drive ON	65	0.46	977	14	24	143	4,850
127435	Anaheim OFF and Pico ON	65	0.16	1,019	14	24	143	5,117
127416	NB LB OFF and SB LB OFF	64	0.08	14,826	141	294	1,573	8,062
97956	Pico OFF and Harbor Scenic Dr OFF	65	0.43	1,129	15	26	162	3,586
88576	Firestone ON and Wright Rd OFF	65	0.69	14,650	148	303	1,138	2,484
88575	Firestone OFF and Imperial ON	65	0.78	14,385	148	308	1,138	2,432
88574	EB Atlantic ON and Florence OFF	65	1.44	15,241	156	314	1,194	1,831
88574	EB Atlantic ON and Florence OFF	65	1.44	15,241	156	314	1,194	1,831
88573	EB Atlantic OFF and Florence ON	65	1.63	15,597	162	326	1,221	1,775
88573	EB Atlantic OFF and Florence ON	65	1.63	15,597	162	326	1,221	1,775
16266	405 OFF and EB 405 ON	62	0.32	13,409	111	199	1,123	8,499
16254	EB 405 ON and Wardlow/WB 405 ON	63	0.09	14,318	125	246	1,095	8,172
16247	EB Del Amo OFF and EB 405 ON	63	0.69	17,790	164	315	1,457	8,542
16237	PCH OFF and PCH ON	63	0.42	8,678	81	148	800	6,955
16187	PCH ON and WB Anaheim OFF	63	0.13	9,402	95	157	823	7,270
16185	WB PCH OFF and EB PCH ON	62	0.12	10,459	106	176	908	8,300
16174	WB Anaheim ON and EB Anaheim OFF	64	0.10	9,420	94	139	682	6,007
16168	WB Anaheim OFF and WB Anaheim ON	64	0.11	8,662	82	132	664	6,005

Table C.3-2D. Alternative 1 Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16157	EB PCH ON and PCH OFF	64	0.14	9,323	89	145	730	6,235
16152	Shoreline Dr ON	65	0.35	7,769	72	99	469	685
16135	EB Anaheim ON and Shoreline Dr ON	64	0.01	8,741	85	123	611	5,791
16134	PCH OFF and WB Anaheim ON	64	0.09	9,438	91	145	731	6,259
16123	EB Willow OFF and WB PCH ON	61	0.54	11,089	109	195	1,016	8,647
16121	WB Willow ON and EB Willow OFF	61	0.15	10,398	111	202	1,078	8,997
16086	EB Willow ON and PCH OFF	61	0.57	10,521	106	196	1,066	8,997
16073	WB Willow OFF and WB Willow ON	61	0.19	10,304	107	198	1,064	8,992
16063	EB Willow ON and EB Willow OFF	61	0.19	10,253	103	190	1,000	8,624
16053	405/Wardlow/Pacific OFF and WB Willow ON	62	0.57	13,293	109	197	1,015	8,624
16053	405/Wardlow/Pacific OFF and WB Willow ON	62	0.57	13,293	109	197	1,015	8,624
16050	WB 405 ON and WB Willow OFF	59	0.80	13,477	107	198	1,064	8,992
16050	WB 405 ON and WB Willow OFF	59	0.80	13,477	107	198	1,064	8,992
16042	EB 405 ON and WB 405 ON	59	0.17	16,549	138	255	1,372	8,940
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	62	0.77	9,450	80	141	763	8,172
15954	Del Amo ON and 405 OFF	62	0.81	16,326	151	294	1,415	8,511
15915	LB Blvd OFF and WB Del Amo ON	63	0.53	17,364	163	327	1,645	8,365
15785	LB Blvd ON and LB Blvd OFF	64	0.53	15,586	144	298	1,561	8,100
15782	Del Amo OFF and Del Amo ON	63	0.24	14,548	132	263	1,331	8,295
15749	LB ON and Del Amo OFF	63	0.56	15,886	152	311	1,620	8,295
15700	Artesia/EB 91 OFF and LB Blvd ON	64	0.36	18,271	169	342	1,708	8,100
15696	SB LB OFF and LB ON	63	0.51	14,826	141	294	1,573	8,062
15655	EB 91 & Artesia ON and NB LB OFF	63	0.18	17,836	173	353	1,780	8,062
15615	WB 91 OFF and Artesia/EB 91 OFF	64	0.24	12,914	124	262	1,189	5,383
15591	WB 91 ON and EB 91 & Artesia ON	62	0.17	17,322	167	349	1,766	7,971
15588	WB 91 OFF and Artesia/EB 91 OFF	64	0.07	12,914	124	262	1,189	5,383
15586	EB 91 ON and WB 91 OFF	63	0.34	12,914	124	262	1,189	5,383
15581	WB 91 OFF and WB 91 ON	64	0.54	11,104	114	238	1,064	5,170
15552	WB 91/Atlantic ON and EB 91 ON	64	0.25	16,624	161	349	1,566	5,388
15549	EB 91/Atlantic/Artesia OFF and WB 91 OFF	65	0.34	14,941	152	326	1,444	5,174
15536	Alondra OFF and WB 91/Atlantic ON	64	0.18	19,948	194	406	1,734	5,388
15497	Alondra ON and EB 91/Atlantic/Artesia OFF	65	0.12	18,404	184	379	1,599	5,174
15489	Alondra ON and Alondra OFF	64	0.51	18,432	181	392	1,699	5,229
15433	WB Alondra OFF and EB Alondra OFF	65	0.19	17,516	176	374	1,609	4,821
15412	Rosecrans OFF and Alondra ON	64	0.44	20,560	204	433	1,879	5,229

Table C.3-2D. Alternative 1 Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15412	Rosecrans OFF and Alondra ON	64	0.44	20,560	204	433	1,879	5,229
15393	EB Rosecrans ON and WB Alondra OFF	65	0.27	19,159	193	404	1,734	4,821
15353	EBnWb 105/Garfield OFF and Rosecrans OFF	64	0.39	19,795	196	421	1,845	5,159
15352	WB Rosecrans ON and EB Rosecrans ON	65	0.28	19,159	193	404	1,734	4,821
15352	WB Rosecrans ON and EB Rosecrans ON	65	0.28	19,159	193	404	1,734	4,821
15290	105 ON and WB Rosecrans ON	65	0.33	18,718	188	396	1,713	4,812
15209	MLK ON and 105 ON	65	0.23	11,255	112	237	883	2,584
15182	Rosecrans ON and EBnWb 105/Garfield OFF	65	1.01	11,682	115	246	903	2,473
15102	EBnWb 105 ON and Rosecrans ON	65	0.27	11,834	117	249	917	2,473
15081	Rosecrans OFF and MLK ON	65	0.88	10,796	108	232	871	2,584
14991	105 OFF and Rosecrans OFF	65	0.24	11,404	115	241	903	2,584
14973	MLK OFF and 105 OFF	65	0.17	14,029	144	296	1,109	2,584
14970	Imperial ON and MLK OFF	65	0.08	14,473	148	300	1,122	2,584
14964	Imperial OFF and EBnWb 105 ON	65	0.26	14,239	146	304	1,121	2,473
14944	Imperial ON and Imperial OFF	65	0.71	12,376	128	279	1,049	2,432
14898	Wright Rd OFF and Imperial OFF	65	0.73	14,650	148	303	1,138	2,484
14886	WB Atlantic ON and EB Atlantic ON	65	0.19	14,796	151	305	1,162	1,809
14864	WB Atlantic OFF and EB Atlantic OFF	65	0.31	14,097	138	280	1,024	848
14858	Atlantic/Bandini ON and WB Atlantic OFF	65	0.20	14,097	138	280	1,024	848
14828	Bandini/Atlantic OFF and WB Atlantic ON	65	0.43	14,062	140	284	1,064	840
14817	Washington OFF and Atlantic/Bandini ON	65	0.21	17,509	178	351	1,416	848
14799	SB i5 Off and Eastern ON	65	0.10	9,524	94	176	713	76
14794	Eastern ON and SB i5 ON	65	0.40	10,265	101	183	724	84
14791	Olympic ON and NB i5 ON	65	0.18	14,065	137	270	1,046	146
14790	Washington ON and Bandini/Atlantic OFF	65	0.16	18,122	193	372	1,531	840
14784	Washington ON and Washington OFF	65	0.25	17,260	172	343	1,383	455
14776	SR60 Off and Olympic ON	65	0.32	15,491	153	290	1,139	146
14775	EasternWhittierOlympic OFF and SB i5 Off	65	0.31	14,910	150	299	1,171	76
14772	Washington Off and Washington ON	65	0.30	17,092	173	348	1,430	400
14768	NB i5 ON and Olympic Off	65	0.26	9,446	91	173	688	146
14765	SB i5 ON and Washington Off	65	0.34	17,560	180	366	1,519	400
14761	NB i5 Off and Washington ON	65	0.39	17,897	180	364	1,483	455
14748	Olympic Off and NB i5 Off	65	0.21	10,588	102	184	711	155
14740	SR60 ON and EasternWhittierOlympic OFF	65	0.21	16,208	166	318	1,260	76
14729	3rd / Ford Off and SR60 Off	65	0.20	12,901	126	239	869	134

Table C.3-2D. Alternative 1 Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi) ³	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
14712	Firestone ON and Firestone OFF	65	0.69	12,614	129	276	1,023	1,885
14705	Firestone OFF and Firestone ON	65	0.73	12,045	122	261	984	1,900
14700	Florence OFF and Firestone ON	65	0.61	14,609	154	320	1,213	1,885
14698	3rd / Ford ON and 3rd / Ford Off	65	0.02	12,452	122	235	859	123
14620	Third Off and SR60 ON	65	0.36	12,204	122	220	705	52
14610	Florence ON and Firestone OFF	65	0.62	14,397	148	305	1,173	1,900
14604	Florence ON and Florence OFF	65	0.66	13,304	141	298	1,137	1,775
14541	Florence OFF and Florence ON	65	0.74	13,208	138	290	1,120	1,831

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the digitization of the roadways from the aerial. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-3A. Alternative 5A Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
127416	EB 91 & Artesia ON and NB LB OFF	36	0.08	25,485	151	203	454	5,087
127435	Anaheim OFF and PCH OFF	62	0.43	2,527	45	55	159	2,724
127443	Harbor Scenic Drive ON and Anaheim OFF	64	0.37	2,944	47	56	163	2,799
14541	Florence OFF and Florence ON	41	0.49	24,050	231	326	645	2,221
14604	Florence OFF and Florence ON	33	0.44	23,839	263	385	763	2,043
14610	Florence ON and Firestone OFF	38	0.62	26,173	244	340	670	2,254
14620	Third Off and SR60 ON	27	0.36	16,726	155	225	482	374
14698	3rd/Ford ON and 3rd Ford OFF	37	0.03	12,388	163	252	530	260
14700	Florence OFF and WB Firestone ON	29	0.61	25,164	271	394	774	2,102
14705	Firestone OFF and WB Firestone ON	44	0.45	23,299	216	308	612	2,254
14712	EB Firestone ON and Firestone OFF	42	0.43	20,427	225	327	636	2,102
14729	3rd Ford OFF and SR 60 OFF	30	0.20	13,048	172	256	532	269
14740	SR60 ON and EasternWhittierOlympic OFF	22	0.21	26,515	250	365	803	578
14748	Olympic Off and NB i5 OFF	49	0.29	17,043	227	319	675	637
14761	NB i5 OFF and Washington/710 Truck Lane ON	33	0.30	25,673	296	418	854	799
14768	NB i5 ON and Olympic Off	51	0.23	16,362	221	315	672	632
14775	EasternWhittierOlympic OFF and SB i5 Off	51	0.12	25,777	242	357	783	578
14776	SR 60 OFF and Olympic ON	23	0.37	21,041	270	409	927	632
14784	Washington/710 Truck Lane ON and Washington OFF	40	0.25	25,195	265	373	757	799
14790	Washington Off and Washington ON	43	0.26	30,177	266	368	736	778
14791	Olympic ON and NB i5 ON	46	0.17	20,255	257	394	890	632
14794	SB i5 Off and Eastern ON	48	0.28	20,667	189	267	575	578
14799	SB i5 Off and Eastern ON	48	0.29	20,667	189	267	575	578
14828	Washington ON and Bandini/Atlantic OFF	36	0.27	30,920	286	397	778	1,106
14858	Washington OFF and WB Atlantic OFF	37	0.24	26,601	290	407	823	991
14864	Slauson ON and Atlantic ON	18	0.60	23,183	264	377	740	991
14886	Bandini/Atlantic OFF and Atlantic ON	34	0.47	26,386	248	342	667	1,104
14898	Imperial/Wright Rd OFF and Imperial ON	45	0.38	24,063	208	296	579	2,578
14944	Imperial OFF and Imperial ON	47	0.44	18,953	214	315	620	2,309
14964	Imperial OFF and EBnWB 105 ON	49	0.26	21,006	231	333	646	2,347
14970	Imperial ON and 105 OFF	49	0.08	28,661	229	325	632	2,588
14973	Imperial ON and 105 OFF	49	0.17	28,661	229	325	632	2,588
14991	105 OFF and Rosecrans OFF	59	0.25	19,818	130	189	351	2,586
15081	Rosecrans OFF and MLK ON	59	0.88	18,477	123	178	332	2,586
15102	EBnWB 105 ON and Rosecrans ON	58	0.27	14,129	156	226	420	2,346
15182	Rosecrans ON and EBnWb 105/Garfield OFF	60	1.02	12,814	145	214	403	2,300

Table C.3-3A. Alternative 5A Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15209	MLK ON and 105 ON	58	0.24	20,231	131	187	343	2,644
15290	105 ON and WB Rosecrans ON	36	0.33	26,380	186	264	542	3,576
15352	WB Rosecrans ON and EB Rosecrans ON	36	0.28	27,439	191	271	555	3,585
15353	EBnWb 105/Garfield OFF and Rosecrans Off	60	0.39	17,494	183	270	574	3,189
15393	EB Rosecrans ON and WB Alondra OFF	39	0.27	29,614	202	282	570	3,693
15412	Rosecrans OFF and Alondra ON	54	0.44	19,618	198	289	607	3,333
15433	WB Alondra OFF and EB Alondra OFF	43	0.19	27,189	181	254	516	3,693
15489	Alondra ON and EB 91/Atlantic ON	56	0.52	34,765	184	270	572	3,333
15497	Alondra ON and WB 91 OFF	45	0.12	23,833	141	198	407	3,812
15536	EB 91/Atlantic ON and WB 91/Atlantic ON	58	0.30	14,019	154	222	478	3,167
15549	Alondra ON and WB 91 OFF	45	0.34	23,833	141	198	407	3,812
15552	WB 91/Atlantic ON and Alondra Blvd OFF	50	0.38	10,327	128	190	419	3,167
15581	WB 91 OFF and WB 91 ON	51	0.55	15,809	91	127	269	3,677
15591	WB 91 ON and EB 91 & Artesia ON	40	0.17	22,134	135	186	423	4,957
15615	Alondra Blvd OFF and 91/Artesia OFF	57	0.57	11,444	138	198	429	3,256
15655	EB 91 & Artesia ON and NB LB OFF	36	0.18	25,485	151	203	454	5,087
15696	NB LB OFF and LB ON	33	0.51	22,943	137	184	421	5,087
15700	91/Artesia Blvd OFF and LB Blvd ON	51	0.19	17,331	183	251	550	4,858
15749	LB ON and Del Amo OFF	42	0.56	24,926	148	196	439	5,159
15782	Del Amo OFF and Del Amo ON	36	0.24	20,783	112	145	320	5,150
15785	LB Blvd ON and LB Blvd OFF	50	0.53	15,647	168	232	523	4,858
15915	LB Blvd OFF and EB Del Amo ON	48	0.53	16,588	175	239	531	4,883
15954	710 Truck Lane ON and EB 405 OFF	43	0.73	23,721	139	179	372	5,312
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	48	0.77	9,382	88	103	242	4,221
16042	EB 405 ON and WB 405 ON	54	0.11	15,220	86	101	235	5,526
16050	WB 405 ON and Willow OFF	52	0.87	18,578	107	124	283	5,699
16053	405/Wardlow/Pacific OFF and Willow ON	58	0.91	15,651	131	153	345	4,568
16086	Willow ON and PCH OFF	40	0.39	17,384	108	126	292	5,842
16121	Willow OFF and Willow ON	36	0.48	14,287	102	120	278	5,699
16123	Willow OFF and PCH ON	53	0.43	11,949	122	145	336	4,568
16134	PCH ON and WB Anaheim ON	55	0.20	9,614	102	120	275	3,982
16152	Shoreline Dr ON	63	0.78	5,278	32	36	62	26
16168	711 Truck Lane ON and EB Anaheim ON	57	0.10	1,236	24	28	79	3,410
16187	PCH ON and 710 Truck Lane ON	36	0.41	1,236	24	28	79	3,410
16237	PCH OFF and Shoreline Dr OFF	52	0.33	15,446	89	103	232	5,177
16247	EB Del Amo OFF and EB 405 ON	51	0.69	18,968	180	239	498	5,033

Table C.3-3A. Alternative 5A Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16254	EB 405 ON and Wardlow/WB 405 ON	43	0.09	14,528	140	191	387	4,221
1643216	PCH OFF and Pico ON	52	0.22	1,760	43	52	152	3,510
1656691	WB 405 OFF and EB 405 ON	42	0.62	10,436	55	64	158	5,173
1657648	EB Alondra OFF and Alondra ON	44	0.27	21,897	128	187	393	3,693
1657653	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	39	0.24	15,332	154	209	460	4,883
1657654	Del Amo ON and Long Beach Fwy Truck Lane ON	31	0.17	23,721	139	179	372	5,312
1657662	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	39	0.15	15,332	154	209	460	4,883
1657665	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	39	0.19	15,332	154	209	460	4,883
1657668	Willow ON and Willow OFF	47	0.51	11,328	122	145	336	4,568
1658094	WB Anaheim ON and Shoreline Dr ON	60	0.27	7,038	79	92	207	3,536
2669548	Slauson OFF and Slauson ON	40	0.69	24,084	227	318	622	2,084
2669551	Slauson ON and Florence OFF	36	0.51	25,416	243	339	662	2,221
2669553	Slauson OFF and Atlantic OFF	32	0.40	23,911	264	385	749	1,950
2669556	Atlantic OFF and Slauson ON	46	0.45	19,777	237	341	665	991
2669564	SB i5 ON and Washington Off	39	0.36	31,605	292	409	842	778
2669598	Shoreline Dr OFF and Anaheim & Pico OFF	25	0.05	4,303	45	56	153	5,078
2669600	Shoreline Dr OFF	50	1.03	11,143	41	45	85	99
2669601	Anaheim & Pico OFF and PCH ON	39	0.30	729	21	26	74	3,286
2669608	EB 405 ON and WB 405 ON	54	0.08	15,220	86	101	235	5,526
2669612	EB 405 OFF and WB 405 OFF	47	0.26	14,332	85	101	246	5,312
2669643	Imperial OFF and Imperial ON	47	0.23	18,953	214	315	620	2,309
2669645	Imperial/Wright Rd OFF and Imperial ON	45	0.32	24,063	208	296	579	2,578
2669651	WB Firestone ON and EB Firestone ON	43	0.28	25,209	228	322	639	2,389
2669653	WB Firestone ON and EB Firestone ON	37	0.27	22,334	243	348	675	2,102
2669659	Florence OFF and Florence ON	41	0.25	24,050	231	326	645	2,221
2669661	Florence ON and Firestone OFF	38	0.21	26,173	244	340	670	2,254
2669687	Eastern ON and SB i5 ON	48	0.13	23,314	207	282	592	602
88573	Florence ON and Slauson OFF	26	0.66	26,298	281	405	785	2,043
88574	EB Atlantic ON and Slauson OFF	37	0.28	27,801	260	358	699	2,084
88575	Imperial ON and Firestone OFF	38	0.79	22,485	241	345	668	2,309
88576	Firestone ON and Wright Rd OFF	40	0.70	27,119	239	337	666	2,578
97956	Anaheim ON and Harbor Scenic Dr OFF	61	0.30	2,563	29	33	90	3,562

Notes:

¹ Post processed traffic data is compiled by URS.

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

Table C.3-3B. Alternative 5A Post Processed Mid Day Traffic Flows (9:00 AM- 3:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
127416	EB 91 & Artesia ON and NB LB OFF	48	0.08	36,787	529	700	1,377	12,148
127435	Anaheim OFF and PCH OFF	62	0.43	1,574	46	59	152	6,769
127443	Harbor Scenic Drive ON and Anaheim OFF	63	0.37	4,445	65	81	207	7,285
14541	Florence OFF and Florence ON	50	0.49	46,813	781	1,083	1,836	4,842
14604	Florence OFF and Florence ON	49	0.44	36,399	711	1,013	1,753	7,527
14610	Florence ON and Firestone OFF	49	0.62	51,268	833	1,143	1,926	5,078
14620	Third Off and SR60 ON	43	0.36	26,022	454	624	1,108	587
14698	3rd/Ford ON and 3rd Ford OFF	48	0.03	23,631	458	691	1,294	3,043
14700	Florence OFF and WB Firestone ON	46	0.61	41,733	781	1,099	1,889	7,803
14705	Firestone OFF and WB Firestone ON	53	0.45	44,620	728	1,016	1,720	5,078
14712	EB Firestone ON and Firestone OFF	55	0.43	33,997	632	891	1,494	7,803
14729	3rd Ford OFF and SR 60 OFF	43	0.20	24,631	483	703	1,302	3,060
14740	SR60 ON and EasternWhittierOlympic OFF	37	0.21	43,716	761	1,059	1,964	838
14748	Olympic Off and NB i5 OFF	58	0.29	30,334	611	813	1,489	3,564
14761	NB i5 OFF and Washington/710 Truck Lane ON	47	0.30	46,095	874	1,210	2,176	3,947
14768	NB i5 ON and Olympic Off	60	0.23	29,140	594	803	1,487	3,555
14775	EasternWhittierOlympic OFF and SB i5 Off	59	0.12	41,713	718	1,006	1,856	838
14776	SR 60 OFF and Olympic ON	36	0.37	37,620	733	1,070	2,128	3,555
14784	Washington/710 Truck Lane ON and Washington OFF	53	0.25	45,097	784	1,078	1,918	3,947
14790	Washington Off and Washington ON	53	0.26	53,023	855	1,179	2,056	1,196
14791	Olympic ON and NB i5 ON	56	0.17	35,828	694	1,026	2,041	3,555
14794	SB i5 Off and Eastern ON	58	0.28	34,523	606	822	1,492	838
14799	SB i5 Off and Eastern ON	58	0.29	34,523	606	822	1,492	838
14828	Washington ON and Bandini/Atlantic OFF	48	0.27	54,955	900	1,255	2,152	2,116
14858	Washington OFF and WB Atlantic OFF	51	0.24	47,366	857	1,169	2,073	4,563
14864	Slauson ON and Atlantic ON	34	0.60	38,996	731	1,015	1,730	4,563
14886	Bandini/Atlantic OFF and Atlantic ON	46	0.47	49,851	832	1,147	1,964	2,115
14898	Imperial/Wright Rd OFF and Imperial ON	55	0.38	42,674	686	972	1,648	5,765
14944	Imperial OFF and Imperial ON	57	0.44	34,031	630	901	1,528	8,707
14964	Imperial OFF and EBnWB 105 ON	58	0.26	39,816	711	998	1,663	8,765
14970	Imperial ON and 105 OFF	58	0.08	48,724	760	1,077	1,827	5,798
14973	Imperial ON and 105 OFF	58	0.17	48,724	760	1,077	1,827	5,798
14991	105 OFF and Rosecrans OFF	64	0.25	30,221	423	604	919	5,789
15081	Rosecrans OFF and MLK ON	64	0.88	28,792	407	582	885	5,789
15102	EBnWB 105 ON and Rosecrans ON	63	0.27	27,503	486	681	1,086	8,758
15182	Rosecrans ON and EBnWb 105/Garfield OFF	64	1.02	25,842	451	656	1,060	8,651

Table C.3-3B. Alternative 5A Post Processed Mid Day Traffic Flows (9:00 AM- 3:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15209	MLK ON and 105 ON	63	0.24	30,415	427	601	906	5,869
15290	105 ON and WB Rosecrans ON	51	0.33	40,425	572	811	1,476	8,007
15352	WB Rosecrans ON and EB Rosecrans ON	51	0.28	40,982	578	819	1,490	8,013
15353	EBnWb 105/Garfield OFF and Rosecrans Off	64	0.39	34,867	610	897	1,708	12,116
15393	EB Rosecrans ON and WB Alondra OFF	53	0.27	43,041	609	845	1,512	8,319
15412	Rosecrans OFF and Alondra ON	61	0.44	38,128	658	952	1,792	12,573
15433	WB Alondra OFF and EB Alondra OFF	56	0.19	38,251	533	753	1,361	8,319
15489	Alondra ON and EB 91/Atlantic ON	62	0.52	34,765	606	879	1,662	12,573
15497	Alondra ON and WB 91 OFF	56	0.12	31,784	438	608	1,101	8,744
15536	EB 91/Atlantic ON and WB 91/Atlantic ON	63	0.30	26,095	478	677	1,303	12,038
15549	Alondra ON and WB 91 OFF	56	0.34	31,784	438	608	1,101	8,744
15552	WB 91/Atlantic ON and Alondra Blvd OFF	57	0.38	18,745	371	539	1,058	12,038
15581	WB 91 OFF and WB 91 ON	60	0.55	22,430	270	360	639	8,228
15591	WB 91 ON and EB 91 & Artesia ON	51	0.17	31,476	460	620	1,240	11,542
15615	Alondra Blvd OFF and 91/Artesia OFF	61	0.57	21,107	410	566	1,079	12,333
15655	EB 91 & Artesia ON and NB LB OFF	48	0.18	36,787	529	700	1,377	12,148
15696	NB LB OFF and LB ON	45	0.51	31,442	463	614	1,241	12,148
15700	91/Artesia Blvd OFF and LB Blvd ON	55	0.19	30,516	546	729	1,430	14,356
15749	LB ON and Del Amo OFF	52	0.56	34,047	501	653	1,291	12,414
15782	Del Amo OFF and Del Amo ON	46	0.24	29,183	411	523	1,008	12,414
15785	LB Blvd ON and LB Blvd OFF	54	0.53	27,385	498	667	1,348	14,356
15915	LB Blvd OFF and EB Del Amo ON	53	0.53	28,176	513	678	1,352	14,399
15954	710 Truck Lane ON and EB 405 OFF	51	0.73	33,350	465	596	1,091	12,665
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	52	0.77	14,346	188	217	469	11,926
16042	EB 405 ON and WB 405 ON	57	0.11	22,979	259	311	673	13,065
16050	WB 405 ON and Willow OFF	56	0.87	29,956	358	424	899	13,855
16053	405/Wardlow/Pacific OFF and Willow ON	59	0.91	25,589	345	407	853	13,530
16086	Willow ON and PCH OFF	45	0.39	27,100	351	419	902	13,968
16121	Willow OFF and Willow ON	40	0.48	23,670	340	409	882	13,855
16123	Willow OFF and PCH ON	53	0.43	19,165	322	389	843	13,534
16134	PCH ON and WB Anaheim ON	54	0.20	13,841	218	260	563	11,140
16152	Shoreline Dr ON	63	0.78	7,085	77	88	167	90
16168	711 Truck Lane ON and EB Anaheim ON	60	0.10	4,883	74	87	205	6,773
16187	PCH ON and 710 Truck Lane ON	43	0.41	4,883	74	87	205	6,773
16237	PCH OFF and Shoreline Dr OFF	56	0.33	23,020	273	318	658	11,727
16247	EB Del Amo OFF and EB 405 ON	56	0.69	30,719	491	627	1,147	14,793

Table C.3-3B. Alternative 5A Post Processed Mid Day Traffic Flows (9:00 AM- 3:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16254	EB 405 ON and Wardlow/WB 405 ON	49	0.09	23,589	334	442	771	12,161
1643216	PCH OFF and Pico ON	50	0.22	1,525	35	46	118	8,703
1656691	WB 405 OFF and EB 405 ON	48	0.62	16,885	184	215	486	12,238
1657648	EB Alondra OFF and Alondra ON	56	0.27	28,145	391	569	1,061	8,319
1657653	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	45	0.24	24,353	418	548	1,075	14,399
1657654	Del Amo ON and Long Beach Fwy Truck Lane ON	41	0.17	33,350	465	596	1,091	12,665
1657662	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	45	0.15	24,353	418	548	1,075	14,399
1657665	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	45	0.19	24,353	418	548	1,075	14,399
1657668	Willow ON and Willow OFF	48	0.51	18,188	315	380	824	13,530
1658094	WB Anaheim ON and Shoreline Dr ON	59	0.27	8,609	113	134	283	8,793
2669548	Slauson OFF and Slauson ON	50	0.69	47,047	764	1,046	1,743	4,752
2669551	Slauson ON and Florence OFF	46	0.51	49,932	810	1,106	1,846	5,022
2669553	Slauson OFF and Atlantic OFF	48	0.40	37,336	722	1,016	1,720	7,305
2669556	Atlantic OFF and Slauson ON	57	0.45	33,677	654	909	1,547	4,563
2669564	SB i5 ON and Washington Off	50	0.36	54,845	934	1,298	2,338	1,196
2669598	Shoreline Dr OFF and Anaheim & Pico OFF	30	0.05	8,027	117	148	354	10,931
2669600	Shoreline Dr OFF	56	1.03	14,993	152	168	311	796
2669601	Anaheim & Pico OFF and PCH ON	45	0.30	2,873	55	69	168	6,431
2669608	EB 405 ON and WB 405 ON	57	0.08	22,979	259	311	673	13,065
2669612	EB 405 OFF and WB 405 OFF	53	0.26	21,196	279	327	737	12,665
2669643	Imperial OFF and Imperial ON	57	0.23	34,031	630	901	1,528	8,707
2669645	Imperial/Wright Rd OFF and Imperial ON	55	0.32	42,674	686	972	1,648	5,765
2669651	WB Firestone ON and EB Firestone ON	51	0.28	47,732	773	1,071	1,809	5,657
2669653	WB Firestone ON and EB Firestone ON	52	0.27	36,937	687	950	1,600	7,803
2669659	Florence OFF and Florence ON	50	0.25	46,813	781	1,083	1,836	4,842
2669661	Florence ON and Firestone OFF	49	0.21	51,268	833	1,143	1,926	5,078
2669687	Eastern ON and SB i5 ON	57	0.13	39,417	662	872	1,546	888
88573	Florence ON and Slauson OFF	43	0.66	40,847	774	1,076	1,821	7,527
88574	EB Atlantic ON and Slauson OFF	47	0.28	53,468	863	1,193	2,047	4,752
88575	Imperial ON and Firestone OFF	52	0.79	39,677	718	998	1,666	8,707
88576	Firestone ON and Wright Rd OFF	51	0.70	49,176	792	1,098	1,853	5,765
97956	Anaheim ON and Harbor Scenic Dr OFF	63	0.30	7,102	84	94	219	7,594

Notes:

¹ Post processed traffic data is compiled by URS.

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

Table C.3-3C. Alternative 5A Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
127416	EB 91 & Artesia ON and NB LB OFF	32	0.08	34,038	202	403	819	4,977
127435	Anaheim OFF and PCH OFF	58	0.43	6,484	28	49	128	4,673
127443	Harbor Scenic Drive ON and Anaheim OFF	62	0.37	7,326	31	53	137	4,768
14541	Florence OFF and Florence ON	26	0.49	41,026	279	588	1,102	2,580
14604	Florence OFF and Florence ON	27	0.44	32,662	300	654	1,227	4,973
14610	Florence ON and Firestone OFF	24	0.62	44,627	297	619	1,154	2,635
14620	Third Off and SR60 ON	19	0.36	23,207	207	451	876	150
14698	3rd/Ford ON and 3rd Ford OFF	24	0.03	24,000	245	561	1,142	2,528
14700	Florence OFF and WB Firestone ON	24	0.61	34,604	310	668	1,247	5,082
14705	Firestone OFF and WB Firestone ON	29	0.45	38,777	264	557	1,045	2,635
14712	EB Firestone ON and Firestone OFF	33	0.43	28,436	264	579	1,096	5,082
14729	3rd Ford OFF and SR 60 OFF	19	0.20	26,490	260	577	1,156	2,543
14740	SR60 ON and EasternWhittierOlympic OFF	15	0.21	38,993	350	764	1,571	357
14748	Olympic Off and NB i5 OFF	36	0.29	32,156	296	615	1,207	2,887
14761	NB i5 OFF and Washington/710 Truck Lane ON	22	0.30	40,622	359	760	1,478	3,030
14768	NB i5 ON and Olympic Off	39	0.23	30,220	286	604	1,199	2,880
14775	EasternWhittierOlympic OFF and SB i5 Off	43	0.12	38,209	339	746	1,528	357
14776	SR 60 OFF and Olympic ON	14	0.37	37,037	342	767	1,608	2,880
14784	Washington/710 Truck Lane ON and Washington OFF	30	0.25	39,512	295	622	1,203	3,030
14790	Washington Off and Washington ON	30	0.26	43,437	288	595	1,115	467
14791	Olympic ON and NB i5 ON	35	0.17	36,903	339	765	1,602	2,880
14794	SB i5 Off and Eastern ON	40	0.28	29,374	258	540	1,070	357
14799	SB i5 Off and Eastern ON	40	0.29	29,374	258	540	1,070	357
14828	Washington ON and Bandini/Atlantic OFF	23	0.27	46,023	320	669	1,250	752
14858	Washington OFF and WB Atlantic OFF	28	0.24	40,864	343	716	1,379	3,296
14864	Slauson ON and Atlantic ON	12	0.60	35,106	303	636	1,182	3,296
14886	Bandini/Atlantic OFF and Atlantic ON	20	0.47	42,023	294	610	1,135	752
14898	Imperial/Wright Rd OFF and Imperial ON	33	0.38	38,176	259	551	1,037	2,849
14944	Imperial OFF and Imperial ON	36	0.44	30,796	268	596	1,143	5,504
14964	Imperial OFF and EBnWB 105 ON	38	0.26	35,050	287	627	1,187	5,564
14970	Imperial ON and 105 OFF	38	0.08	42,000	275	584	1,092	2,870
14973	Imperial ON and 105 OFF	38	0.17	42,000	275	584	1,092	2,870
14991	105 OFF and Rosecrans OFF	52	0.25	28,492	156	342	608	2,869
15081	Rosecrans OFF and MLK ON	52	0.88	26,100	149	327	581	2,869
15102	EBnWB 105 ON and Rosecrans ON	49	0.27	25,250	198	432	783	5,564
15182	Rosecrans ON and EBnWb 105/Garfield OFF	53	1.02	23,494	184	409	752	5,525

Table C.3-3C. Alternative 5A Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15209	MLK ON and 105 ON	49	0.24	27,833	159	341	596	2,933
15290	105 ON and WB Rosecrans ON	25	0.33	33,594	196	415	802	3,618
15352	WB Rosecrans ON and EB Rosecrans ON	24	0.28	34,338	200	423	820	3,669
15353	EBnWb 105/Garfield OFF and Rosecrans Off	51	0.39	32,202	246	531	1,078	6,286
15393	EB Rosecrans ON and WB Alondra OFF	28	0.27	35,963	209	437	835	3,716
15412	Rosecrans OFF and Alondra ON	39	0.44	36,227	264	564	1,135	6,475
15433	WB Alondra OFF and EB Alondra OFF	33	0.19	32,817	192	406	785	3,716
15489	Alondra ON and EB 91/Atlantic ON	41	0.52	33,827	249	537	1,088	6,474
15497	Alondra ON and WB 91 OFF	42	0.12	27,103	144	302	584	3,829
15536	EB 91/Atlantic ON and WB 91/Atlantic ON	47	0.30	26,207	202	428	882	6,302
15549	Alondra ON and WB 91 OFF	42	0.34	27,103	144	302	584	3,829
15552	WB 91/Atlantic ON and Alondra Blvd OFF	35	0.38	20,810	148	328	692	6,300
15581	WB 91 OFF and WB 91 ON	50	0.55	21,734	122	249	489	3,793
15591	WB 91 ON and EB 91 & Artesia ON	40	0.17	28,630	171	349	738	4,849
15615	Alondra Blvd OFF and 91/Artesia OFF	46	0.57	23,473	159	342	711	6,444
15655	EB 91 & Artesia ON and NB LB OFF	32	0.18	34,038	202	403	819	4,977
15696	NB LB OFF and LB ON	28	0.51	30,793	188	375	778	4,977
15700	91/Artesia Blvd OFF and LB Blvd ON	40	0.19	33,364	211	436	911	8,057
15749	LB ON and Del Amo OFF	38	0.56	33,187	200	396	804	5,021
15782	Del Amo OFF and Del Amo ON	31	0.24	29,374	166	323	640	5,021
15785	LB Blvd ON and LB Blvd OFF	39	0.53	30,725	197	408	872	8,057
15915	LB Blvd OFF and EB Del Amo ON	37	0.53	31,715	203	416	879	8,086
15954	710 Truck Lane ON and EB 405 OFF	38	0.73	32,553	183	354	676	5,098
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	40	0.77	16,811	83	143	309	7,045
16042	EB 405 ON and WB 405 ON	52	0.11	22,966	132	225	462	5,216
16050	WB 405 ON and Willow OFF	50	0.87	26,592	149	251	506	5,327
16053	405/Wardlow/Pacific OFF and Willow ON	53	0.91	23,493	119	202	424	7,422
16086	Willow ON and PCH OFF	38	0.39	24,062	144	243	501	5,399
16121	Willow OFF and Willow ON	34	0.48	20,666	142	240	496	5,327
16123	Willow OFF and PCH ON	45	0.43	18,826	111	191	414	7,422
16134	PCH ON and WB Anaheim ON	47	0.20	15,788	87	149	321	6,569
16152	Shoreline Dr ON	62	0.78	4,197	21	33	56	17
16168	711 Truck Lane ON and EB Anaheim ON	62	0.10	2,032	38	65	162	3,432
16187	PCH ON and 710 Truck Lane ON	50	0.41	2,032	38	65	162	3,432
16237	PCH OFF and Shoreline Dr OFF	51	0.33	19,889	99	165	340	4,972
16247	EB Del Amo OFF and EB 405 ON	43	0.69	32,855	206	412	816	8,293

Table C.3-3C. Alternative 5A Post Processed PM Traffic Flows (3:00 - 7:00 PM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16254	EB 405 ON and Wardlow/WB 405 ON	33	0.09	24,838	147	303	592	7,070
1643216	PCH OFF and Pico ON	39	0.22	7,413	33	58	153	6,174
1656691	WB 405 OFF and EB 405 ON	39	0.62	17,008	101	172	367	5,036
1657648	EB Alondra OFF and Alondra ON	41	0.27	24,859	131	284	560	3,716
1657653	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	27	0.24	27,260	173	354	740	8,086
1657654	Del Amo ON and Long Beach Fwy Truck Lane ON	25	0.17	32,553	183	354	676	5,098
1657662	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	27	0.15	27,260	173	354	740	8,086
1657665	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	27	0.19	27,260	173	354	740	8,086
1657668	Willow ON and Willow OFF	38	0.51	17,918	111	191	414	7,422
1658094	WB Anaheim ON and Shoreline Dr ON	54	0.27	11,610	56	94	204	6,191
2669548	Slauson OFF and Slauson ON	26	0.69	40,024	276	584	1,091	2,502
2669551	Slauson ON and Florence OFF	22	0.51	42,784	292	613	1,141	2,580
2669553	Slauson OFF and Atlantic OFF	26	0.40	33,103	303	655	1,206	4,851
2669556	Atlantic OFF and Slauson ON	41	0.45	29,938	275	581	1,069	3,296
2669564	SB i5 ON and Washington Off	27	0.36	44,029	347	727	1,400	467
2669598	Shoreline Dr OFF and Anaheim & Pico OFF	36	0.05	5,830	59	103	251	4,972
2669600	Shoreline Dr OFF	36	1.03	14,059	35	57	100	0
2669601	Anaheim & Pico OFF and PCH ON	51	0.30	1,081	34	60	150	3,371
2669608	EB 405 ON and WB 405 ON	52	0.08	22,966	132	225	462	5,216
2669612	EB 405 OFF and WB 405 OFF	44	0.26	21,404	125	215	457	5,098
2669643	Imperial OFF and Imperial ON	36	0.23	30,796	268	596	1,143	5,504
2669645	Imperial/Wright Rd OFF and Imperial ON	33	0.32	38,176	259	551	1,037	2,849
2669651	WB Firestone ON and EB Firestone ON	29	0.28	40,205	271	570	1,069	2,673
2669653	WB Firestone ON and EB Firestone ON	31	0.27	29,607	274	595	1,124	5,082
2669659	Florence OFF and Florence ON	26	0.25	41,026	279	588	1,102	2,580
2669661	Florence ON and Firestone OFF	24	0.21	44,627	297	619	1,154	2,635
2669687	Eastern ON and SB i5 ON	38	0.13	33,418	286	590	1,159	387
88573	Florence ON and Slauson OFF	22	0.66	35,809	323	690	1,265	4,973
88574	EB Atlantic ON and Slauson OFF	24	0.28	45,687	311	646	1,202	2,502
88575	Imperial ON and Firestone OFF	29	0.79	34,729	295	640	1,202	5,506
88576	Firestone ON and Wright Rd OFF	26	0.70	42,619	284	592	1,105	2,849
97956	Anaheim ON and Harbor Scenic Dr OFF	64	0.30	3,549	45	73	176	3,794

Notes:

¹ Post processed traffic data is compiled by URS.

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

Table C.3-3D. Alternative 5A Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
127416	EB 91 & Artesia ON and NB LB OFF	64	0.08	18,496	165	340	1,732	8,060
127435	Anaheim OFF and PCH OFF	65	0.43	1,850	19	34	208	5,458
127443	Harbor Scenic Drive ON and Anaheim OFF	65	0.37	1,985	20	35	211	5,555
14541	Florence OFF and Florence ON	65	0.49	15,689	150	314	1,221	1,961
14604	Florence OFF and Florence ON	65	0.44	15,494	151	316	1,212	1,919
14610	Florence ON and Firestone OFF	65	0.62	16,563	156	320	1,232	1,974
14620	Third Off and SR60 ON	65	0.36	13,007	123	221	710	52
14698	3rd/Ford ON and 3rd Ford OFF	65	0.03	13,310	124	241	883	122
14700	Florence OFF and WB Firestone ON	65	0.61	16,709	160	328	1,244	1,977
14705	Firestone OFF and WB Firestone ON	65	0.45	13,488	125	268	1,010	1,974
14712	EB Firestone ON and Firestone OFF	65	0.43	14,498	135	286	1,068	1,977
14729	3rd Ford OFF and SR 60 OFF	65	0.20	13,840	129	245	893	133
14740	SR60 ON and EasternWhittierOlympic OFF	65	0.21	16,631	161	303	1,191	76
14748	Olympic Off and NB i5 OFF	65	0.29	12,221	108	195	764	155
14761	NB i5 OFF and Washington/710 Truck Lane ON	65	0.30	20,525	192	388	1,598	459
14768	NB i5 ON and Olympic Off	65	0.23	10,764	97	183	739	145
14775	EasternWhittierOlympic OFF and SB i5 Off	65	0.12	15,350	144	283	1,102	76
14776	SR 60 OFF and Olympic ON	65	0.37	16,858	159	301	1,190	145
14784	Washington/710 Truck Lane ON and Washington OFF	65	0.25	20,286	190	386	1,586	459
14790	Washington Off and Washington ON	65	0.26	19,411	173	353	1,359	423
14791	Olympic ON and NB i5 ON	65	0.17	15,461	142	281	1,097	145
14794	SB i5 Off and Eastern ON	65	0.28	10,559	95	179	725	76
14799	SB i5 Off and Eastern ON	65	0.29	10,559	95	179	725	76
14828	Washington ON and Bandini/Atlantic OFF	65	0.27	19,939	178	372	1,411	848
14858	Washington OFF and WB Atlantic OFF	65	0.24	20,711	202	396	1,631	852
14864	Slauson ON and Atlantic ON	65	0.60	16,916	155	312	1,168	852
14886	Bandini/Atlantic OFF and Atlantic ON	65	0.47	16,970	157	321	1,224	848
14898	Imperial/Wright Rd OFF and Imperial ON	65	0.38	14,369	135	287	1,083	2,484
14944	Imperial OFF and Imperial ON	65	0.44	13,985	132	285	1,073	2,435
14964	Imperial OFF and EBnWB 105 ON	65	0.26	15,586	147	306	1,134	2,476
14970	Imperial ON and 105 OFF	65	0.08	15,767	150	306	1,137	2,584
14973	Imperial ON and 105 OFF	65	0.17	15,767	150	306	1,137	2,584
14991	105 OFF and Rosecrans OFF	65	0.25	12,844	117	247	917	2,584
15081	Rosecrans OFF and MLK ON	65	0.88	12,217	111	238	887	2,584
15102	EBnWB 105 ON and Rosecrans ON	65	0.27	13,063	118	251	928	2,476
15182	Rosecrans ON and EBnWb 105/Garfield OFF	65	1.02	12,894	116	248	913	2,476

Table C.3-3D. Alternative 5A Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
15209	MLK ON and 105 ON	65	0.24	12,605	115	242	896	2,584
15290	105 ON and WB Rosecrans ON	64	0.33	20,018	187	399	1,731	4,803
15352	WB Rosecrans ON and EB Rosecrans ON	64	0.28	20,499	193	407	1,753	4,812
15353	EBnWb 105/Garfield OFF and Rosecrans Off	65	0.39	21,441	196	423	1,857	5,266
15393	EB Rosecrans ON and WB Alondra OFF	65	0.27	20,499	193	407	1,753	4,812
15412	Rosecrans OFF and Alondra ON	64	0.44	22,645	207	437	1,897	5,479
15433	WB Alondra OFF and EB Alondra OFF	65	0.19	18,097	168	364	1,574	4,812
15489	Alondra ON and EB 91/Atlantic ON	65	0.52	34,765	184	396	1,717	5,479
15497	Alondra ON and WB 91 OFF	65	0.12	16,175	152	329	1,461	5,165
15536	EB 91/Atlantic ON and WB 91/Atlantic ON	65	0.30	17,220	154	319	1,371	5,476
15549	Alondra ON and WB 91 OFF	65	0.34	16,175	152	329	1,461	5,165
15552	WB 91/Atlantic ON and Alondra Blvd OFF	64	0.38	13,747	121	262	1,203	5,476
15581	WB 91 OFF and WB 91 ON	65	0.55	12,201	114	241	1,078	5,161
15591	WB 91 ON and EB 91 & Artesia ON	64	0.17	18,010	160	336	1,718	7,971
15615	Alondra Blvd OFF and 91/Artesia OFF	65	0.57	14,320	126	267	1,216	5,487
15655	EB 91 & Artesia ON and NB LB OFF	64	0.18	18,496	165	340	1,732	8,060
15696	NB LB OFF and LB ON	64	0.51	16,691	147	306	1,609	8,060
15700	91/Artesia Blvd OFF and LB Blvd ON	65	0.19	19,796	170	347	1,734	8,199
15749	LB ON and Del Amo OFF	64	0.56	17,854	158	323	1,659	8,293
15782	Del Amo OFF and Del Amo ON	64	0.24	16,441	138	275	1,369	8,293
15785	LB Blvd ON and LB Blvd OFF	65	0.53	17,072	146	304	1,588	8,199
15915	LB Blvd OFF and EB Del Amo ON	64	0.53	18,908	164	329	1,662	8,460
15954	710 Truck Lane ON and EB 405 OFF	64	0.73	18,456	157	307	1,457	8,472
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	64	0.77	10,475	79	140	761	7,595
16042	EB 405 ON and WB 405 ON	65	0.11	13,545	102	189	1,016	8,710
16050	WB 405 ON and Willow OFF	65	0.87	15,411	116	213	1,100	9,060
16053	405/Wardlow/Pacific OFF and Willow ON	65	0.91	14,402	106	195	1,011	8,064
16086	Willow ON and PCH OFF	64	0.39	11,287	115	211	1,101	9,066
16121	Willow OFF and Willow ON	64	0.48	10,291	110	206	1,087	9,060
16123	Willow OFF and PCH ON	64	0.43	11,621	104	192	1,006	8,103
16134	PCH ON and WB Anaheim ON	65	0.20	9,571	80	148	782	6,413
16152	Shoreline Dr ON	65	0.78	5,882	41	72	357	0
16168	711 Truck Lane ON and EB Anaheim ON	65	0.10	1,213	17	32	196	4,732
16187	PCH ON and 710 Truck Lane ON	64	0.41	1,213	17	32	196	4,732
16237	PCH OFF and Shoreline Dr OFF	65	0.33	9,246	84	152	791	6,959
16247	EB Del Amo OFF and EB 405 ON	65	0.69	19,496	167	321	1,485	8,636

Table C.3-3D. Alternative 5A Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Descriptor	Speed (mph)	Length (mi)	Auto	Light-Heavy Duty Truck	Medium-Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
16254	EB 405 ON and Wardlow/WB 405 ON	64	0.09	15,945	124	247	1,104	7,595
1643216	PCH OFF and Pico ON	64	0.22	1,824	17	34	206	5,648
1656691	WB 405 OFF and EB 405 ON	64	0.62	10,407	75	136	770	8,269
1657648	EB Alondra OFF and Alondra ON	65	0.27	14,936	140	316	1,433	4,812
1657653	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	64	0.24	17,290	144	284	1,388	8,460
1657654	Del Amo ON and Long Beach Fwy Truck Lane ON	64	0.17	18,456	157	307	1,457	8,472
1657662	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	64	0.15	17,290	144	284	1,388	8,460
1657665	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	64	0.19	17,290	144	284	1,388	8,460
1657668	Willow ON and Willow OFF	64	0.51	10,352	100	186	993	8,064
1658094	WB Anaheim ON and Shoreline Dr ON	65	0.27	7,706	58	105	564	5,648
2669548	Slauson OFF and Slauson ON	65	0.69	15,562	145	298	1,122	1,785
2669551	Slauson ON and Florence OFF	65	0.51	17,591	165	334	1,281	1,961
2669553	Slauson OFF and Atlantic OFF	65	0.40	15,283	144	298	1,108	1,750
2669556	Atlantic OFF and Slauson ON	65	0.45	14,124	127	255	971	852
2669564	SB i5 ON and Washington Off	65	0.36	20,005	187	383	1,573	423
2669598	Shoreline Dr OFF and Anaheim & Pico OFF	63	0.05	3,304	38	74	416	6,959
2669600	Shoreline Dr OFF	65	1.03	5,942	46	78	375	0
2669601	Anaheim & Pico OFF and PCH ON	64	0.30	1,143	15	31	193	4,480
2669608	EB 405 ON and WB 405 ON	65	0.08	13,545	102	189	1,016	8,710
2669612	EB 405 OFF and WB 405 OFF	64	0.26	13,433	112	205	1,143	8,472
2669643	Imperial OFF and Imperial ON	65	0.23	13,985	132	285	1,073	2,435
2669645	Imperial/Wright Rd OFF and Imperial ON	65	0.32	14,369	135	287	1,083	2,484
2669651	WB Firestone ON and EB Firestone ON	65	0.28	14,906	139	291	1,092	2,365
2669653	WB Firestone ON and EB Firestone ON	65	0.27	15,390	146	305	1,154	1,977
2669659	Florence OFF and Florence ON	65	0.25	15,689	150	314	1,221	1,961
2669661	Florence ON and Firestone OFF	65	0.21	16,563	156	320	1,232	1,974
2669687	Eastern ON and SB i5 ON	65	0.13	12,098	107	193	759	88
88573	Florence ON and Slauson OFF	65	0.66	17,050	165	336	1,277	1,919
88574	EB Atlantic ON and Slauson OFF	65	0.28	17,653	166	337	1,296	1,785
88575	Imperial ON and Firestone OFF	65	0.79	16,442	154	318	1,174	2,435
88576	Firestone ON and Wright Rd OFF	65	0.70	15,833	147	302	1,126	2,484
97956	Anaheim ON and Harbor Scenic Dr OFF	65	0.30	1,357	20	34	204	4,921

Notes:

¹ Post processed traffic data is compiled by URS.

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

Table C.3-4A. Alternative 6A Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	42	0.39		28096	187	250	437	147
14604	Mainline	40	0.38		25774	258	352	629	154
14610	Mainline	44	0.63		30833	202	267	464	168
14700	Mainline	43	0.78		27156	264	357	634	154
14705	Mainline	44	0.36		28139	177	236	409	168
14712	Mainline	50	0.36		21819	220	305	545	154
14729	Mainline	48	0.18		13079	163	240	510	860
14740	Mainline	35	0.65		26918	285	417	957	2115
14748	Mainline	15	0.11		15630	215	294	653	2258
14761	Mainline	15	0.20		15630	215	294	653	2258
14768	Mainline	20	0.17		13604	200	283	643	2251
14775	Mainline	32	0.17		28512	305	442	1021	2207
14776	Mainline	23	0.46		18939	241	363	847	2253
14784	Mainline	33	0.19		23781	259	372	787	2458
14790	Mainline	35	0.36		29950	310	463	1033	2501
14791	Mainline	25	0.17		18090	234	354	830	2251
14794	Mainline	38	0.20		21373	212	308	702	2207
14799	Mainline	29	0.06		24804	267	383	886	2207
14828	Mainline	38	0.17		26867	290	438	976	2499
14858	Mainline	33	0.37		23781	259	372	787	2458
14864	Mainline	38	0.10		21453	236	346	726	2458
14886	Mainline	46	0.06		26867	163	214	371	12
14898	Mainline	43	0.73		30128	173	234	406	216
14944	Mainline	51	0.39		22431	225	299	498	154
14964	Mainline	53	0.41		24360	242	314	514	160
14991	Mainline	38	0.25		29255	137	189	325	278
15081	Mainline	40	0.74		27169	122	171	294	278
15102	Mainline	56	0.25		16363	186	243	395	160
15182	Mainline	60	0.90		14888	173	235	383	160
15209	Mainline	39	0.26		28173	126	176	301	283
15290	Mainline	39	0.25		35273	169	237	451	339
15352	Mainline	39	0.19		36279	173	244	463	346
15353	Mainline	59	0.47		20857	198	276	547	298
15393	Mainline	36	0.40		38111	182	253	474	449
15412	Mainline	59	0.31		23133	214	293	576	365
15433	Mainline	41	0.21		35030	154	218	405	449
15489	Mainline	60	0.35		21009	198	274	539	365

Table C.3-4A. Alternative 6A Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	48	0.07		29862	99	136	250	594
15536	Mainline	61	0.38		17122	178	234	466	347
15549	Mainline	48	0.20		29862	99	136	250	594
15552	Mainline	60	0.33		12571	136	188	411	347
15581	Mainline	56	0.44		20479	49	63	113	570
15586	Mainline	63	0.23		13636	155	195	403	409
15588	Mainline	63	0.08		13636	155	195	403	409
15591	Mainline	48	0.25		27104	87	111	217	1137
15615	Mainline	63	0.27		13636	155	195	403	409
15655	Mainline	45	0.40		30230	103	128	245	1277
15700	Mainline	57	0.45		20291	197	238	487	556
15749	Mainline	46	0.69		29366	99	119	227	1376
15782	Mainline	47	0.53		24737	61	67	112	1376
15785	Mainline	57	0.45		18420	179	215	460	556
15915	Mainline	56	0.20		19334	187	221	462	569
15954	Mainline	44	0.44		27795	212	313	691	1579
16041	Mainline	57	0.96		12707	80	84	151	1049
16042	Mainline	56	0.12		19333	115	125	246	1785
16050	Mainline	58	0.87		22421	136	148	289	1889
16053	Mainline	56	0.43		18142	121	129	234	1309
16086	Mainline	58	0.40		21241	141	150	288	2024
16121	Mainline	57	0.48		18257	128	143	279	1889
16123	Mainline	61	0.45		14853	110	120	220	1309
16134	Mainline	62	0.04		12384	83	88	151	900
16135	Mainline	64	0.01		9365	69	73	124	819
16152	Shoreline On	57	0.79		7315	48	51	84	27
16168	Mainline	61	0.33		3253	39	45	124	2939
16185	Mainline	62	0.16		12384	83	88	151	900
16187	Mainline	64	0.13		3253	39	39	84	1094
16199	Shoreline Off	45	0.08		12041	53	54	100	75
16237	Mainline	59	0.37		18505	111	115	212	1745
16247	Mainline	47	0.49		21211	266	411	871	1252
16254	Mainline	52	0.21		16038	220	346	736	1049
16266	Mainline	52	0.29		14475	81	87	178	1510
88574	Mainline	46	0.13		26867	163	214	371	12
88575	Mainline	52	0.89		24120	235	320	568	154
88576	Mainline	37	0.55		33415	205	268	459	216

Table C.3-4A. Alternative 6A Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	60	0.34		4531	43	50	135	3050
127416	Mainline	43	0.33		27594	88	106	209	1277
127435	Mainline	65	0.15		2927	27	26	54	680
127443	Mainline	65	0.36		3384	29	28	56	788
1643216	Mainline	64	0.28		1457	20	20	42	640
1656691	Mainline	52	0.28		14475	81	87	178	1510
1657648	Mainline	47	0.48		28157	86	126	238	449
1657653	Mainline	56	0.09		19334	187	221	462	569
1657654	Mainline	47	0.13		27795	89	98	153	1534
1657662	Mainline	54	0.61		17617	167	186	356	569
1657665	Mainline	56	0.07		19334	187	221	462	569
1657668	Mainline	61	0.59		14074	109	120	221	1309
1658094	Mainline	64	0.14		9365	69	73	124	819
1658097	Mainline	64	0.13		9365	69	73	124	819
2669480	Freight Corridor Mainline	45	1.53		0	153	261	613	4923
2669481	Freight Corridor Mainline	56	1.93		0	43	60	175	4391
2669482	Freight Corridor Mainline	56	1.70		0	37	56	158	4298
2669483	Freight Corridor Mainline	56	0.39		0	37	56	158	4298
2669484	Freight Corridor Mainline	56	2.17		0	37	56	158	4298
2669485	Freight Corridor Mainline	56	2.21		0	43	60	175	4391
2669486	Freight Corridor Mainline	62	0.63		0	19	27	90	3354
2669487	Freight Corridor Mainline	52	0.64		0	17	24	81	2376
2669488	Freight Corridor Mainline	54	4.56		0	152	260	671	3858
2669489	Freight Corridor Mainline	52	1.13		0	147	252	592	3807
2669494	Freight Corridor Mainline	45	0.27		0	153	261	613	4923
2669495	Pico Off	64	0.54		0	6	7	21	1162
2669498	Pico On	15	0.45		0	2	3	9	978
2669502	Harbour Scenic On	7	0.25		0	6	9	30	1156
2669505	Frt Off	9	0.19		0	11	15	51	1220
2669511	Pico On Freight Corridor	15	0.22		0	2	3	9	978
2669512	Pico On Freight Corridor	9	0.10		0	6	7	21	1162
2669523	Anaheim On	9	0.80		0	24	33	84	1037
2669524	Anaheim Off	5	0.30		0	26	39	105	1291
2669548	Mainline	46	0.45		24706	145	192	327	12
2669556	Mainline	44	0.29	0.30	21453	230	311	555	154
2669564	Mainline	35	0.28		29950	310	463	1033	2501
2669594	Mixed Flow Pico On	7	0.13		364	6	7	21	1532

Table C.3-4A. Alternative 6A Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	63	0.10		6464	57	60	114	1669
2669599	Shoreline Off	45	0.27		12041	53	54	100	75
2669600	Shoreline Off	45	0.59		12041	53	54	100	75
2669601	Mainline	62	0.19		2813	32	33	72	1023
2669604	Freight Corridor Mainline	64	0.44		0	31	47	126	2453
2669606	SB Frt Corr On	2	0.47		0	6	9	32	1845
2669608	Mainline	58	0.08		22421	136	148	289	1889
2669612	Mainline	54	0.29		18602	118	141	304	1579
2669619	SB Frt Corr to GP On	17	0.73		0	123	214	539	45
2669628	Mainline	60	0.09		21009	198	274	539	365
2669632	Mainline	60	0.17		12571	136	188	411	347
2669643	Mainline	51	0.21		22431	225	299	498	154
2669645	Mainline	43	0.32		36566	208	274	467	281
2669651	Mainline	42	0.32		30223	189	252	435	198
2669653	Mainline	44	0.14		24219	241	329	592	154
2669659	Mainline	42	0.20		28096	187	250	437	147
2669661	Mainline	40	0.18		25774	258	352	629	154
2669676	Mainline	46	0.10		26867	163	214	371	12
2669687	Mainline	38	0.20		21373	212	308	702	2207
2669689	Mainline	65	0.21		2050	20	20	43	791
2669696	NB Frt Corr Off	9	0.64		0	111	197	443	532
2669697	Mainline	51	0.21		21211	199	220	379	721
2669698	Freight Corridor Mainline	65	0.35	0.34	0	10	18	38	876
2669704	Mainline	34	0.38		15229	187	262	565	2258
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	10	18	38	876
2669714	Mainline	49	0.53		27168	175	231	393	80
2669749	Mainline	38	0.11		21453	236	346	726	2458
2669751	Mainline	37	0.18		33415	205	268	459	216
2669759	Freight Corridor Mainline	54	1.12		0	152	260	671	3858
2669760	Patata On	65	0.32		0	16	18	26	495
2669763	Patata Off	65	0.26		0	30	39	61	407
2669764	Freight Corridor Mainline	52	4.45		0	147	252	592	3807
2669766	SR 91 EB Off	40	0.97		0	6	8	21	1116
2669768	Freight Corridor Mainline	49	1.48		0	161	270	697	4342
2669769	WB SR 91 On	40	1.31		0	9	10	26	484
2669788	Mainline	37	0.30		28856	306	443	1018	2207
88573	Mainline	41	0.69	0.48	27280	271	366	644	154

Table C.3-4A. Alternative 6A Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	44	0.70	0.53	29326	199	261	449	147
2669553	Mainline	49	0.40	0.33	23807	254	348	608	154
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	12	0.93	0.52	0	9	16	40	876
2669699	Mainline	49	0.33	0.39	19407	213	290	509	154
2669717	Freight Corridor Mainline	58	3.02	2.10	0	136	241	645	3363
2669718	SB Frt Corr Off	35	0.60	0.50	0	126	223	607	2487
2669748	End of Frt Corridor Mainline	62	1.71	1.20	0	85	166	400	1096
2669750	Frt Corr NB On	47	0.66	0.62	0	31	51	128	2304
2669761	Freight Corridor Mainline	57	2.66	2.05	0	121	215	526	3400

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-4B. Alternative 6A Post Processed Mid Day Traffic Flows (9:00AM - 3:00PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	49	0.39		56318	595	829	1393	426
14604	Mainline	57	0.38		36730	784	1039	1641	3406
14610	Mainline	51	0.63		61725	655	898	1495	629
14700	Mainline	58	0.78		42322	855	1118	1755	3505
14705	Mainline	51	0.36		55344	554	770	1279	629
14712	Mainline	61	0.36		33895	712	951	1466	3505
14729	Mainline	56	0.18		23383	472	688	1311	5923
14740	Mainline	48	0.65		45293	794	1107	2126	3454
14748	Mainline	25	0.11		28876	624	793	1471	8297
14761	Mainline	25	0.20		28876	624	793	1471	8297
14768	Mainline	32	0.17		25301	561	761	1455	8271
14775	Mainline	46	0.17		48053	844	1165	2254	3539
14776	Mainline	34	0.46		33847	691	1024	2084	8271
14784	Mainline	45	0.19		42790	777	1092	1973	8909
14790	Mainline	43	0.36		55810	910	1338	2569	4017
14791	Mainline	36	0.17		32417	674	1002	2049	8271
14794	Mainline	49	0.20		38977	619	873	1675	3539
14799	Mainline	42	0.06		42839	767	1053	2054	3539
14828	Mainline	47	0.17		53560	884	1319	2517	4016
14858	Mainline	45	0.37		42790	777	1092	1973	8909
14864	Mainline	50	0.10		35544	649	937	1670	8909
14886	Mainline	52	0.06		53560	511	695	1154	39
14898	Mainline	51	0.73		55472	533	743	1230	856
14944	Mainline	61	0.39		37106	768	1020	1561	3505
14964	Mainline	62	0.41		42507	853	1108	1673	3551
14991	Mainline	49	0.25		50426	421	576	922	1020
15081	Mainline	51	0.74		47837	385	537	861	1020
15102	Mainline	63	0.25		28527	650	849	1272	3551
15182	Mainline	64	0.90		26521	590	832	1267	3551
15209	Mainline	50	0.26		48944	396	549	877	1032
15290	Mainline	50	0.25		58154	534	740	1311	1878
15352	Mainline	50	0.19		58711	540	748	1325	1884
15353	Mainline	64	0.47		37046	694	1016	2024	4316
15393	Mainline	48	0.40		59848	555	761	1337	1983
15412	Mainline	64	0.31		40677	754	1070	2078	4560
15433	Mainline	53	0.21		53866	462	644	1137	1983
15489	Mainline	64	0.35		37213	700	994	1944	4560

Table C.3-4B. Alternative 6A Post Processed Mid Day Traffic Flows (9:00AM - 3:00PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	57	0.07		43137	298	413	748	2339
15536	Mainline	64	0.38		27956	595	804	1638	4332
15549	Mainline	57	0.20		43137	298	413	748	2339
15552	Mainline	63	0.33		20562	469	665	1410	4332
15581	Mainline	61	0.44		31376	103	135	246	2193
15586	Mainline	64	0.23		22835	537	696	1387	4550
15588	Mainline	64	0.08		22835	537	696	1387	4550
15591	Mainline	56	0.25		41094	295	384	758	3879
15615	Mainline	64	0.27		22835	537	696	1387	4550
15655	Mainline	54	0.40		45824	357	451	875	4353
15700	Mainline	60	0.45		33331	691	867	1693	4961
15749	Mainline	55	0.69		42366	317	395	773	4638
15782	Mainline	56	0.53		35815	198	233	432	4638
15785	Mainline	60	0.45		29906	634	790	1613	4961
15915	Mainline	60	0.20		30598	651	801	1605	4987
15954	Mainline	53	0.44		40482	636	913	1794	5093
16041	Mainline	59	0.96		18222	188	198	353	4908
16042	Mainline	60	0.12		29784	381	418	802	5570
16050	Mainline	61	0.87		36226	484	528	1006	6139
16053	Mainline	58	0.43		27691	334	361	653	5841
16086	Mainline	61	0.40		33396	493	529	981	6256
16121	Mainline	60	0.48		30246	457	518	986	6139
16123	Mainline	61	0.45		21849	314	348	637	5846
16134	Mainline	62	0.04		17484	178	194	339	3030
16135	Mainline	64	0.01		10915	114	124	219	2614
16152	Shoreline On	61	0.79		9523	102	110	189	42
16168	Mainline	62	0.33		8126	141	167	406	5463
16185	Mainline	62	0.16		17484	178	194	339	3030
16187	Mainline	65	0.13		8126	146	157	329	2222
16199	Shoreline Off	53	0.08		16423	182	186	328	759
16237	Mainline	61	0.37		28336	383	401	726	4705
16247	Mainline	54	0.49		32772	581	814	1476	6505
16254	Mainline	57	0.21		25383	431	615	1105	4908
16266	Mainline	57	0.29		23814	305	326	647	4950
88574	Mainline	52	0.13		53560	511	695	1154	39
88575	Mainline	61	0.89		40090	806	1058	1619	3505
88576	Mainline	47	0.55		62266	641	870	1426	856

Table C.3-4B. Alternative 6A Post Processed Mid Day Traffic Flows (9:00AM - 3:00PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	62	0.34		10273	152	174	418	6214
127416	Mainline	53	0.33		40147	287	361	726	4353
127435	Mainline	65	0.15		1570	32	34	70	2436
127443	Mainline	65	0.36		4494	56	59	118	3019
1643216	Mainline	62	0.28		285	13	14	30	2262
1656691	Mainline	57	0.28		23814	305	326	647	4950
1657648	Mainline	57	0.48		39976	261	382	709	1983
1657653	Mainline	60	0.09		30598	651	801	1605	4987
1657654	Mainline	55	0.13		40482	257	299	509	4970
1657662	Mainline	59	0.61		26608	570	678	1297	4987
1657665	Mainline	60	0.07		30598	651	801	1605	4987
1657668	Mainline	62	0.59		20607	301	338	624	5841
1658094	Mainline	64	0.14		10915	114	124	219	2614
1658097	Mainline	64	0.13		10915	114	124	219	2614
2669480	Freight Corridor Mainline	49	1.53		0	108	177	358	10700
2669481	Freight Corridor Mainline	57	1.93		0	94	136	363	9588
2669482	Freight Corridor Mainline	59	1.70		0	52	80	214	7602
2669483	Freight Corridor Mainline	59	0.39		0	52	80	214	7602
2669484	Freight Corridor Mainline	59	2.17		0	52	80	214	7602
2669485	Freight Corridor Mainline	57	2.21		0	94	136	363	9588
2669486	Freight Corridor Mainline	62	0.63		0	30	42	122	7011
2669487	Freight Corridor Mainline	52	0.64		0	26	37	106	4711
2669488	Freight Corridor Mainline	58	4.56		0	381	667	1510	6810
2669489	Freight Corridor Mainline	56	1.13		0	96	159	318	9183
2669494	Freight Corridor Mainline	49	0.27		0	108	177	358	10700
2669495	Pico Off	65	0.54		0	2	4	12	1877
2669498	Pico On	16	0.45		0	4	6	16	2301
2669502	Harbour Scenic On	5	0.25		0	13	20	61	3348
2669505	Frt Off	12	0.19		0	13	17	44	1363
2669511	Pico On Freight Corridor	16	0.22		0	4	6	16	2301
2669512	Pico Off Freight Corridor	16	0.10		0	2	4	12	1877
2669523	Anaheim On	12	0.80		0	65	96	238	2577
2669524	Anaheim Off	6	0.30		0	39	58	148	2484
2669548	Mainline	52	0.45		49283	452	620	1023	39
2669556	Mainline	56	0.29	0.30	35544	723	960	1510	3399
2669564	Mainline	43	0.28		55810	910	1338	2569	4017
2669594	Mixed Flow Pico On	11	0.13		846	2	4	12	2989

Table C.3-4B. Alternative 6A Post Processed Mid Day Traffic Flows (9:00AM - 3:00PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	64	0.10		11913	193	214	408	3946
2669599	Shoreline Off	53	0.27		16423	182	186	328	759
2669600	Shoreline Off	53	0.59		16423	182	186	328	759
2669601	Mainline	63	0.19		6213	115	129	276	1883
2669604	Freight Corridor Mainline	64	0.44		0	41	62	160	4361
2669606	SB Frt Corr On	3	0.47		0	11	17	54	3241
2669608	Mainline	61	0.08		36226	484	528	1006	6139
2669612	Mainline	60	0.29		27501	366	407	812	5093
2669619	SB Frt Corr to GP On	18	0.73		0	341	608	1329	123
2669628	Mainline	64	0.09		37213	700	994	1944	4560
2669632	Mainline	63	0.17		20562	469	665	1410	4332
2669643	Mainline	61	0.21		37106	768	1020	1561	3505
2669645	Mainline	52	0.32		64829	663	891	1441	1023
2669651	Mainline	50	0.32		57897	589	815	1351	767
2669653	Mainline	59	0.14		37211	776	1009	1582	3505
2669659	Mainline	49	0.20		56318	595	829	1393	426
2669661	Mainline	57	0.18		36730	784	1039	1641	3406
2669676	Mainline	52	0.10		53560	511	695	1154	39
2669687	Mainline	49	0.20		38977	619	873	1675	3539
2669689	Mainline	65	0.21		1392	13	14	30	2572
2669696	NB Frt Corr Off	12	0.64		0	9	14	27	1112
2669697	Mainline	57	0.21		32772	683	788	1351	5393
2669698	Freight Corridor Mainline	65	0.35	0.34	0	17	34	70	1924
2669704	Mainline	48	0.38		27762	507	674	1224	8297
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	17	34	70	1924
2669714	Mainline	54	0.53		55314	552	753	1236	325
2669749	Mainline	50	0.11		35544	649	937	1670	8909
2669751	Mainline	47	0.18		62266	641	870	1426	856
2669759	Freight Corridor Mainline	58	1.12		0	381	667	1510	6810
2669760	Patata On	65	0.32		0	21	24	33	909
2669763	Patata Off	65	0.26		0	52	66	93	1406
2669764	Freight Corridor Mainline	56	4.45		0	96	159	318	9183
2669766	SR 91 EB Off	40	0.97		0	12	15	42	1518
2669768	Freight Corridor Mainline	55	1.48		0	394	682	1548	7724
2669769	WB SR 91 On	40	1.31		0	12	16	38	914
2669788	Mainline	49	0.30		49192	858	1178	2264	3539
88573	Mainline	57	0.69	0.48	40258	839	1088	1682	3406

Table C.3-4B. Alternative 6A Post Processed Mid Day Traffic Flows (9:00AM - 3:00PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	50	0.70	0.53	59321	620	844	1395	606
2669553	Mainline	60	0.40	0.33	35215	766	1018	1561	3399
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	11	0.93	0.52	0	17	34	70	1924
2669699	Mainline	59	0.33	0.39	31220	661	883	1364	3399
2669717	Freight Corridor Mainline	61	3.02	2.10	0	356	642	1483	5901
2669718	SB Frt Corr Off	49	0.60	0.50	0	339	606	1414	3976
2669748	End of Frt Corridor Mainline	64	1.71	1.20	0	43	86	173	2267
2669750	Frt Corr NB On	49	0.66	0.62	0	10	17	35	5510
2669761	Freight Corridor Mainline	60	2.66	2.05	0	58	99	207	7777

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-4C. Alternative 6A Post Processed PM Traffic Flows (3:00PM - 7:00PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	26	0.39		43008	162	315	534	461
14604	Mainline	33	0.38		32008	407	779	1211	956
14610	Mainline	29	0.63		47078	180	345	581	482
14700	Mainline	36	0.78		34102	414	786	1219	956
14705	Mainline	28	0.36		41414	148	285	485	482
14712	Mainline	41	0.36		28564	362	718	1133	956
14729	Mainline	37	0.18		23435	247	573	1219	3433
14740	Mainline	27	0.65		37118	427	958	2166	1754
14748	Mainline	9	0.11		24665	282	582	1273	4954
14761	Mainline	9	0.20		24665	282	582	1273	4954
14768	Mainline	12	0.17		21236	264	562	1254	4950
14775	Mainline	24	0.17		39547	451	994	2234	1798
14776	Mainline	15	0.46		30474	327	752	1726	4950
14784	Mainline	25	0.19		32927	292	626	1292	5099
14790	Mainline	24	0.36		39969	405	912	1979	1942
14791	Mainline	17	0.17		29447	322	735	1687	4950
14794	Mainline	29	0.20		29363	298	664	1484	1762
14799	Mainline	22	0.06		32157	395	861	1939	1798
14828	Mainline	27	0.17		37451	377	857	1862	1941
14858	Mainline	25	0.37		32927	292	626	1292	5099
14864	Mainline	31	0.10		28429	257	559	1147	5099
14886	Mainline	33	0.06		37451	113	217	365	6
14898	Mainline	30	0.73		41885	146	285	488	538
14944	Mainline	41	0.39		32805	379	750	1190	953
14964	Mainline	43	0.41		36969	401	778	1221	970
14991	Mainline	27	0.25		35646	83	177	294	562
15081	Mainline	29	0.74		32117	69	147	244	562
15102	Mainline	44	0.25		25921	332	662	1017	970
15182	Mainline	49	0.90		23980	314	643	991	970
15209	Mainline	28	0.26		32688	71	149	247	567
15290	Mainline	28	0.25		40214	88	182	332	567
15352	Mainline	28	0.19		40793	90	187	341	575
15353	Mainline	44	0.47		34696	341	691	1294	1056
15393	Mainline	26	0.40		42106	95	194	350	586
15412	Mainline	46	0.31		38898	360	721	1340	1163
15433	Mainline	31	0.21		38401	76	158	287	586
15489	Mainline	48	0.35		36513	342	692	1295	1162

Table C.3-4C. Alternative 6A Post Processed PM Traffic Flows (3:00PM - 7:00PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	43	0.07		31393	25	51	88	684
15536	Mainline	49	0.38		28470	314	602	1119	1125
15549	Mainline	43	0.20		31393	25	51	88	684
15552	Mainline	47	0.33		22211	245	496	912	1123
15581	Mainline	53	0.44		24372	7	13	22	684
15586	Mainline	57	0.23		24897	275	511	896	1213
15588	Mainline	57	0.08		24897	275	511	896	1213
15591	Mainline	46	0.25		31856	35	65	116	729
15615	Mainline	57	0.27		24897	275	511	896	1213
15655	Mainline	40	0.40		36135	56	103	173	836
15700	Mainline	46	0.45		34871	311	561	963	1338
15749	Mainline	41	0.69		34591	49	85	142	893
15782	Mainline	42	0.53		30445	15	24	34	893
15785	Mainline	45	0.45		32093	299	524	931	1338
15915	Mainline	43	0.20		33008	308	530	922	1353
15954	Mainline	35	0.44		33562	270	651	1379	985
16041	Mainline	48	0.96		19711	50	73	101	1673
16042	Mainline	52	0.12		26505	64	95	141	1050
16050	Mainline	55	0.87		29292	80	118	174	1087
16053	Mainline	47	0.43		24897	83	124	183	1909
16086	Mainline	56	0.40		26238	71	93	123	1160
16121	Mainline	54	0.48		23027	64	89	121	1087
16123	Mainline	54	0.45		21092	73	106	158	1910
16134	Mainline	55	0.04		17589	44	61	87	1421
16135	Mainline	60	0.01		13113	36	51	74	1380
16152	Shoreline On	47	0.79		8762	25	36	48	0
16168	Mainline	63	0.33		2301	24	39	91	2308
16185	Mainline	55	0.16		17589	44	61	87	1421
16187	Mainline	65	0.13		2301	11	13	20	642
16199	Shoreline Off	32	0.08		14987	14	18	24	5
16237	Mainline	57	0.37		21013	26	33	45	1019
16247	Mainline	34	0.49		34427	284	673	1338	1884
16254	Mainline	42	0.21		24829	225	542	1062	1673
16266	Mainline	45	0.29		20343	35	50	76	928
88574	Mainline	33	0.13		37451	113	217	365	6
88575	Mainline	43	0.89		35177	398	776	1218	956
88576	Mainline	24	0.55		46437	169	321	541	538

Table C.3-4C. Alternative 6A Post Processed PM Traffic Flows (3:00PM - 7:00PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	63	0.34		3670	29	46	105	2583
127416	Mainline	37	0.33		32740	40	71	123	836
127435	Mainline	65	0.15		3471	12	16	29	1398
127443	Mainline	65	0.36		4335	17	20	37	1507
1643216	Mainline	59	0.28		2540	10	14	27	1170
1656691	Mainline	45	0.28		20343	35	50	76	928
1657648	Mainline	41	0.48		29231	18	39	70	586
1657653	Mainline	43	0.09		33008	308	530	922	1353
1657654	Mainline	41	0.13		33562	30	48	63	979
1657662	Mainline	42	0.61		28901	314	501	759	1353
1657665	Mainline	43	0.07		33008	308	530	922	1353
1657668	Mainline	55	0.59		19788	72	106	159	1909
1658094	Mainline	60	0.14		13113	36	51	74	1380
1658097	Mainline	60	0.13		13113	36	51	74	1380
2669480	Freight Corridor Mainline	39	1.53		0	165	403	884	7668
2669481	Freight Corridor Mainline	53	1.93		0	119	234	548	7359
2669482	Freight Corridor Mainline	61	1.70		0	143	282	624	3871
2669483	Freight Corridor Mainline	61	0.39		0	143	282	624	3871
2669484	Freight Corridor Mainline	61	2.17		0	143	282	624	3871
2669485	Freight Corridor Mainline	53	2.21		0	119	234	548	7359
2669486	Freight Corridor Mainline	61	0.63		0	55	108	275	6103
2669487	Freight Corridor Mainline	50	0.64		0	41	80	204	3930
2669488	Freight Corridor Mainline	56	4.56		0	325	806	1861	3202
2669489	Freight Corridor Mainline	49	1.13		0	146	364	801	6557
2669494	Freight Corridor Mainline	39	0.27		0	165	403	884	7668
2669495	Pico Off	65	0.54		0	41	75	183	1054
2669498	Pico On	11	0.45		0	14	27	71	2173
2669502	Harbour Scenic On	6	0.25		0	27	53	122	1266
2669505	Frt Off	8	0.19		0	14	27	82	2664
2669511	Pico On Freight Corridor	11	0.22		0	14	27	71	2173
2669512	Pico Off Freight Corridor	14	0.10		0	41	75	183	1054
2669523	Anaheim On	8	0.80		0	65	127	272	1256
2669524	Anaheim Off	6	0.30		0	90	180	369	1151
2669548	Mainline	32	0.45		34153	98	192	325	6
2669556	Mainline	37	0.29	0.30	28429	331	628	968	956
2669564	Mainline	24	0.28		39969	405	912	1979	1942
2669594	Mixed Flow Pico On	12	0.13		315	41	75	183	1362

Table C.3-4C. Alternative 6A Post Processed PM Traffic Flows (3:00PM - 7:00PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	63	0.10		6027	12	15	21	1014
2669599	Shoreline Off	32	0.27		14987	14	18	24	5
2669600	Shoreline Off	32	0.59		14987	14	18	24	5
2669601	Mainline	63	0.19		1392	-1	-1	-2	555
2669604	Freight Corridor Mainline	64	0.44		0	130	255	552	2205
2669606	SB Frt Corr On	6	0.47		0	13	26	72	1666
2669608	Mainline	55	0.08		29292	80	118	174	1087
2669612	Mainline	48	0.29		24924	81	147	288	985
2669619	SB Frt Corr to GP On	5	0.73		0	217	588	1354	6
2669628	Mainline	48	0.09		36513	342	692	1295	1162
2669632	Mainline	47	0.17		22211	245	496	912	1123
2669643	Mainline	41	0.21		32805	379	750	1190	953
2669645	Mainline	32	0.32		47504	171	327	551	562
2669651	Mainline	28	0.32		42891	155	299	508	515
2669653	Mainline	37	0.14		30386	389	741	1160	956
2669659	Mainline	26	0.20		43008	162	315	534	461
2669661	Mainline	33	0.18		32008	407	779	1211	956
2669676	Mainline	33	0.10		37451	113	217	365	6
2669687	Mainline	29	0.20		29363	298	664	1484	1762
2669689	Mainline	64	0.21		4351	10	15	27	1380
2669696	NB Frt Corr Off	6	0.64		0	58	157	335	309
2669697	Mainline	39	0.21		34427	360	580	805	1575
2669698	Freight Corridor Mainline	65	0.35	0.34	0	50	134	270	915
2669704	Mainline	26	0.38		23824	220	459	979	4870
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	50	134	270	915
2669714	Mainline	34	0.53		40565	156	306	517	444
2669749	Mainline	31	0.11		28429	257	559	1147	5099
2669751	Mainline	24	0.18		46437	169	321	541	538
2669759	Freight Corridor Mainline	56	1.12		0	325	806	1861	3202
2669760	Patata On	65	0.32		0	28	48	63	352
2669763	Patata Off	65	0.26		0	48	93	142	939
2669764	Freight Corridor Mainline	49	4.45		0	146	364	801	6557
2669766	SR 91 EB Off	40	0.97		0	23	39	80	1111
2669768	Freight Corridor Mainline	51	1.48		0	363	869	1975	3877
2669769	WB SR 91 On	40	1.31		0	38	63	114	675
2669788	Mainline	29	0.30		39868	453	995	2231	1798
88573	Mainline	35	0.69	0.48	34082	426	804	1226	956

Table C.3-4C. Alternative 6A Post Processed PM Traffic Flows (3:00PM - 7:00PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	28	0.70	0.53	44569	172	334	565	461
2669553	Mainline	43	0.40	0.33	29720	399	765	1146	956
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	11	0.93	0.52	0	50	132	272	915
2669699	Mainline	42	0.33	0.39	25800	314	602	914	956
2669717	Freight Corridor Mainline	58	3.02	2.10	0	298	759	1798	2850
2669718	SB Frt Corr Off	39	0.60	0.50	0	248	625	1527	1935
2669748	End of Frt Corridor Mainline	61	1.71	1.20	0	102	286	604	1475
2669750	Frt Corr NB On	46	0.66	0.62	0	4	9	23	4143
2669761	Freight Corridor Mainline	55	2.66	2.05	0	107	279	642	5618

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-4D. Alternative 6A Post Processed Night Time Traffic Flows (7:00PM - 6:00AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	65	0.39		15646	146	307	1187	1383
14604	Mainline	65	0.38		15090	141	295	1111	465
14610	Mainline	65	0.63		16518	151	313	1198	1396
14700	Mainline	65	0.78		16280	149	306	1140	513
14705	Mainline	65	0.36		13936	125	268	1003	1396
14712	Mainline	65	0.36		14034	124	263	958	513
14729	Mainline	65	0.18		14000	131	245	885	135
14740	Mainline	65	0.65		16458	157	294	1178	76
14748	Mainline	65	0.11		12982	128	211	846	158
14761	Mainline	65	0.20		12982	128	211	846	158
14768	Mainline	65	0.17		11051	107	195	812	147
14775	Mainline	65	0.17		16359	160	295	1180	76
14776	Mainline	65	0.46		16942	160	301	1191	147
14784	Mainline	65	0.19		19849	182	367	1466	460
14790	Mainline	65	0.36		19099	178	366	1483	412
14791	Mainline	65	0.17		15809	153	293	1171	147
14794	Mainline	65	0.20		10854	93	168	620	76
14799	Mainline	65	0.06		11289	108	187	794	76
14828	Mainline	65	0.17		16135	144	303	1161	412
14858	Mainline	65	0.37		19849	182	367	1466	460
14864	Mainline	65	0.10		16462	145	300	1118	460
14886	Mainline	65	0.06		16135	143	301	1148	322
14898	Mainline	65	0.73		13826	126	272	1025	1449
14944	Mainline	65	0.39		14152	125	267	977	809
14964	Mainline	65	0.41		15590	138	285	1028	850
14991	Mainline	65	0.25		13090	116	242	889	1559
15081	Mainline	65	0.74		12520	110	234	862	1559
15102	Mainline	65	0.25		13033	109	231	834	850
15182	Mainline	65	0.90		12865	107	228	821	850
15209	Mainline	65	0.26		12905	113	238	871	1559
15290	Mainline	65	0.25		20052	185	394	1702	3722
15352	Mainline	65	0.19		20538	190	402	1724	3731
15353	Mainline	65	0.47		21170	188	402	1756	3615
15393	Mainline	65	0.40		20538	190	402	1724	3731
15412	Mainline	65	0.31		22417	199	417	1797	3835
15433	Mainline	65	0.21		18085	166	358	1545	3731
15489	Mainline	65	0.35		20167	176	376	1624	3835

Table C.3-4D. Alternative 6A Post Processed Night Time Traffic Flows (7:00PM - 6:00AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	65	0.07		16118	149	323	1433	4084
15536	Mainline	65	0.38		16874	146	303	1290	3832
15549	Mainline	65	0.20		16118	149	323	1433	4084
15552	Mainline	65	0.33		13454	114	247	1125	3832
15581	Mainline	65	0.44		11978	112	236	1055	4079
15586	Mainline	65	0.23		13870	118	250	1131	3843
15588	Mainline	65	0.08		13870	118	250	1131	3843
15591	Mainline	64	0.25		17576	157	330	1694	6693
15615	Mainline	65	0.27		13870	118	250	1131	3843
15655	Mainline	64	0.40		18063	162	335	1708	6786
15700	Mainline	65	0.45		19308	161	327	1613	5059
15749	Mainline	64	0.69		17012	152	310	1613	6920
15782	Mainline	64	0.53		14990	128	255	1285	6920
15785	Mainline	65	0.45		16612	137	284	1471	5059
15915	Mainline	65	0.20		18420	155	309	1542	5332
15954	Mainline	64	0.44		17734	155	301	1410	7280
16041	Mainline	65	0.96		10493	81	139	724	5347
16042	Mainline	65	0.12		13816	114	205	1082	7709
16050	Mainline	65	0.87		15164	128	231	1177	7937
16053	Mainline	65	0.43		13522	108	193	975	5809
16086	Mainline	65	0.40		12346	111	197	1026	6427
16121	Mainline	65	0.48		11400	99	188	999	6369
16123	Mainline	65	0.45		11959	97	170	856	4320
16134	Mainline	65	0.04		9720	75	128	643	2936
16135	Mainline	65	0.01		8300	60	98	480	2344
16152	Shoreline On	65	0.79		6097	49	80	372	0
16168	Mainline	65	0.33		1221	13	24	156	3904
16185	Mainline	65	0.16		9720	75	128	643	2936
16187	Mainline	65	0.13		1221	13	24	154	3625
16199	Shoreline Off	65	0.08		6307	51	80	381	201
16237	Mainline	65	0.37		9727	86	149	769	4513
16247	Mainline	65	0.49		18561	158	304	1369	5547
16254	Mainline	65	0.21		15391	125	242	1052	5347
16266	Mainline	64	0.29		10623	86	149	826	7268
88574	Mainline	65	0.13		16135	143	301	1148	322
88575	Mainline	65	0.89		16135	142	293	1059	809
88576	Mainline	65	0.55		16035	144	300	1113	1449

Table C.3-4D. Alternative 6A Post Processed Night Time Traffic Flows (7:00PM - 6:00AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	65	0.34		1360	16	26	162	4025
127416	Mainline	64	0.33		16201	144	300	1585	6786
127435	Mainline	65	0.15		2218	11	19	109	2348
127443	Mainline	65	0.36		2361	13	20	111	2441
1643216	Mainline	64	0.28		2160	10	18	108	2281
1656691	Mainline	64	0.28		10623	86	149	826	7268
1657648	Mainline	65	0.48		14875	137	311	1405	3731
1657653	Mainline	65	0.09		18420	155	309	1542	5332
1657654	Mainline	64	0.13		17734	154	300	1404	7280
1657662	Mainline	65	0.61		16430	133	260	1246	5332
1657665	Mainline	65	0.07		18420	155	309	1542	5332
1657668	Mainline	65	0.59		10688	85	159	830	4275
1658094	Mainline	65	0.14		8300	60	98	480	2344
1658097	Mainline	65	0.13		8300	60	98	480	2344
2669480	Freight Corridor Mainline	65	1.53		0	11	23	128	3311
2669481	Freight Corridor Mainline	65	1.93		0	7	16	101	3273
2669482	Freight Corridor Mainline	65	1.70		0	2	5	23	1378
2669483	Freight Corridor Mainline	65	0.39		0	2	5	23	1378
2669484	Freight Corridor Mainline	65	2.17		0	2	5	23	1378
2669485	Freight Corridor Mainline	65	2.21		0	7	16	101	3273
2669486	Freight Corridor Mainline	65	0.63		0	6	12	85	3167
2669487	Freight Corridor Mainline	65	0.64		0	6	12	85	2964
2669488	Freight Corridor Mainline	65	4.56		0	3	6	29	1035
2669489	Freight Corridor Mainline	65	1.13		0	8	17	76	1630
2669494	Freight Corridor Mainline	65	0.27		0	11	23	128	3311
2669495	Pico Off	65	0.54		0	0	0	0	654
2669498	Pico On	20	0.45		0	0	0	0	204
2669502	Harbour Scenic On	19	0.25		0	4	8	63	1504
2669505	Frt Off	20	0.19		0	2	4	22	1460
2669511	Pico On Freight Corridor	20	0.22		0	0	0	0	204
2669512	Pico Off Freight Corridor	30	0.10		0	0	0	0	654
2669523	Anaheim On	20	0.80		0	1	3	16	105
2669524	Anaheim Off	20	0.30		0	2	4	21	445
2669548	Mainline	65	0.45		14313	125	264	986	322
2669556	Mainline	65	0.29	0.30	16462	141	293	1083	103
2669564	Mainline	65	0.28		19099	178	366	1483	412
2669594	Mixed Flow Pico On	30	0.13		144	0	0	0	750

Table C.3-4D. Alternative 6A Post Processed Night Time Traffic Flows (7:00PM - 6:00AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	65	0.10		3420	36	69	388	4312
2669599	Shoreline Off	65	0.27		6307	51	80	381	201
2669600	Shoreline Off	65	0.59		6307	51	80	381	201
2669601	Mainline	65	0.19		1152	12	23	151	3398
2669604	Freight Corridor Mainline	65	0.44		0	2	4	21	1099
2669606	SB Frt Corr On	20	0.47		0	0	0	3	279
2669608	Mainline	65	0.08		15164	128	231	1177	7937
2669612	Mainline	65	0.29		13181	113	202	1105	7280
2669619	SB Frt Corr to GP On	20	0.73		0	1	1	6	0
2669628	Mainline	65	0.09		20167	176	376	1624	3835
2669632	Mainline	65	0.17		13454	114	247	1125	3832
2669643	Mainline	65	0.21		14152	125	267	977	809
2669645	Mainline	65	0.32		16279	150	304	1117	1559
2669651	Mainline	65	0.32		15628	141	295	1099	1449
2669653	Mainline	65	0.14		14968	135	283	1050	513
2669659	Mainline	65	0.20		15646	146	307	1187	1383
2669661	Mainline	65	0.18		15090	141	295	1111	465
2669676	Mainline	65	0.10		16135	143	301	1148	322
2669687	Mainline	65	0.20		10854	93	168	620	76
2669689	Mainline	65	0.21		2202	10	18	108	2344
2669696	NB Frt Corr Off	20	0.64		0	3	7	26	38
2669697	Mainline	65	0.21		18561	155	297	1343	5509
2669698	Freight Corridor Mainline	65	0.35	0.34	0	1	2	9	476
2669704	Mainline	65	0.38		12036	102	182	661	158
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	1	2	9	476
2669714	Mainline	65	0.53		14705	132	276	1031	333
2669749	Mainline	65	0.11		16462	145	300	1118	460
2669751	Mainline	65	0.18		16035	144	300	1113	1449
2669759	Freight Corridor Mainline	65	1.12		0	3	6	29	1035
2669760	Patata On	65	0.32		0	1	2	7	468
2669763	Patata Off	65	0.26		0	3	5	16	174
2669764	Freight Corridor Mainline	65	4.45		0	8	17	76	1630
2669766	SR 91 EB Off	40	0.97		0	3	6	51	1681
2669768	Freight Corridor Mainline	65	1.48		0	3	6	29	1378
2669769	WB SR 91 On	40	1.31		0	0	0	0	343
2669788	Mainline	65	0.30		17394	167	302	1196	76
88573	Mainline	65	0.69	0.48	16835	155	316	1177	465

Table C.3-4D. Alternative 6A Post Processed Night Time Traffic Flows (7:00PM - 6:00AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	65	0.70	0.53	17593	161	329	1255	1383
2669553	Mainline	65	0.40	0.33	14399	125	259	932	103
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	20	0.93	0.52	0	1	2	9	476
2669699	Mainline	65	0.33	0.39	14199	121	253	912	103
2669717	Freight Corridor Mainline	65	3.02	2.10	0	2	4	22	566
2669718	SB Frt Corr Off	65	0.60	0.50	0	1	3	13	90
2669748	End of Frt Corridor Mainline	65	1.71	1.20	0	2	5	24	1098
2669750	Frt Corr NB On	65	0.66	0.62	0	3	7	35	357
2669761	Freight Corridor Mainline	65	2.66	2.05	0	5	12	60	1456

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-5A. Alternative 6B Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	43	0.39		27397	171	230	399	110
14604	Mainline	40	0.38		25630	278	377	668	77
14610	Mainline	45	0.63		30140	186	247	426	131
14700	Mainline	43	0.78		27015	284	381	672	77
14705	Mainline	44	0.36		27450	161	216	370	131
14712	Mainline	51	0.36		21702	240	330	587	77
14729	Mainline	48	0.18		12990	163	242	516	897
14740	Mainline	35	0.65		26881	288	425	989	2153
14748	Mainline	14	0.11		15456	220	304	690	2356
14761	Mainline	14	0.20		15456	220	304	690	2356
14768	Mainline	19	0.17		13433	205	293	680	2349
14775	Mainline	32	0.17		28542	308	450	1053	2245
14776	Mainline	23	0.46		18740	246	374	889	2352
14784	Mainline	32	0.19		23555	271	392	851	2578
14790	Mainline	34	0.36		29889	316	478	1080	2554
14791	Mainline	24	0.17		17894	239	365	872	2349
14794	Mainline	38	0.20		21448	218	322	749	2245
14799	Mainline	29	0.06		24837	273	397	936	2245
14828	Mainline	38	0.17		26106	287	438	989	2553
14858	Mainline	32	0.37		23555	271	392	851	2578
14864	Mainline	37	0.10		21253	247	366	791	2578
14886	Mainline	47	0.06		26106	149	197	340	12
14898	Mainline	43	0.73		29463	157	213	368	179
14944	Mainline	52	0.39		22372	248	325	537	77
14964	Mainline	53	0.41		24304	265	340	552	80
14991	Mainline	38	0.25		28563	124	170	290	243
15081	Mainline	40	0.74		26480	109	152	260	243
15102	Mainline	56	0.25		16353	210	272	442	80
15182	Mainline	60	0.90		14881	196	265	430	80
15209	Mainline	40	0.26		27483	113	157	267	248
15290	Mainline	39	0.25		34652	155	215	401	285
15352	Mainline	39	0.19		35659	159	222	414	292
15353	Mainline	59	0.47		20842	219	299	565	194
15393	Mainline	36	0.40		37477	168	230	425	399
15412	Mainline	59	0.31		23116	234	316	593	260
15433	Mainline	42	0.21		34391	140	195	355	399
15489	Mainline	60	0.35		20990	218	297	556	260

Table C.3-5A. Alternative 6B Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	48	0.07		29237	83	112	199	540
15536	Mainline	61	0.38		17105	204	261	482	245
15549	Mainline	48	0.20		29237	83	112	199	540
15552	Mainline	60	0.33		12570	161	215	434	245
15581	Mainline	56	0.44		19884	35	43	73	517
15586	Mainline	63	0.23		13632	183	222	422	306
15588	Mainline	63	0.08		13632	183	222	422	306
15591	Mainline	49	0.25		26537	73	92	174	976
15615	Mainline	63	0.27		13632	183	222	422	306
15655	Mainline	45	0.40		29638	89	108	201	1117
15700	Mainline	58	0.45		20305	219	259	500	449
15749	Mainline	46	0.69		28747	84	99	184	1217
15782	Mainline	48	0.53		24086	46	50	82	1217
15785	Mainline	58	0.45		18435	201	236	476	449
15915	Mainline	57	0.20		19337	210	242	478	460
15954	Mainline	44	0.44		27148	211	314	702	1410
16041	Mainline	58	0.96		12779	72	74	123	821
16042	Mainline	57	0.12		18751	100	108	211	1606
16050	Mainline	59	0.87		21814	121	131	254	1708
16053	Mainline	57	0.43		18256	113	119	202	1075
16086	Mainline	58	0.40		20649	125	132	253	1842
16121	Mainline	57	0.48		17664	113	125	244	1708
16123	Mainline	61	0.45		14966	103	109	187	1075
16134	Mainline	62	0.04		12409	77	81	130	703
16135	Mainline	64	0.01		9363	66	70	114	645
16152	Shoreline On	57	0.79		7327	45	48	76	27
16168	Mainline	61	0.33		2498	27	32	87	2946
16185	Mainline	62	0.16		12409	77	81	130	703
16187	Mainline	65	0.13		2498	23	23	48	975
16199	Shoreline Off	45	0.08		12064	53	54	101	75
16237	Mainline	59	0.37		17806	94	96	177	1604
16247	Mainline	47	0.49		21212	274	429	904	1011
16254	Mainline	53	0.21		16054	226	360	759	821
16266	Mainline	53	0.29		13899	67	71	143	1338
88574	Mainline	47	0.13		26106	149	197	340	12
88575	Mainline	52	0.89		24001	255	345	610	77
88576	Mainline	37	0.55		32737	188	247	420	179

Table C.3-5A. Alternative 6B Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	61	0.34		3775	31	36	98	3056
127416	Mainline	43	0.33		27001	74	87	166	1117
127435	Mainline	65	0.15		2897	27	26	51	514
127443	Mainline	65	0.36		3355	30	27	53	620
1643216	Mainline	65	0.28		1436	20	20	40	473
1656691	Mainline	53	0.28		13899	67	71	143	1338
1657648	Mainline	47	0.48		27530	72	102	186	399
1657653	Mainline	57	0.09		19337	210	242	478	460
1657654	Mainline	48	0.13		27148	74	81	123	1373
1657662	Mainline	55	0.61		17615	194	209	365	460
1657665	Mainline	57	0.07		19337	210	242	478	460
1657668	Mainline	61	0.59		14175	101	109	188	1075
1658094	Mainline	64	0.14		9363	66	70	114	645
1658097	Mainline	64	0.13		9363	66	70	114	645
2669480	Freight Corridor Mainline	54	1.53		0	164	279	659	5137
2669481	Freight Corridor Mainline	60	1.93		0	56	76	220	4735
2669482	Freight Corridor Mainline	61	1.70		0	43	62	174	4524
2669483	Freight Corridor Mainline	61	0.39		0	43	62	174	4524
2669484	Freight Corridor Mainline	61	2.17		0	43	62	174	4524
2669485	Freight Corridor Mainline	60	2.21		0	56	76	220	4735
2669486	Freight Corridor Mainline	64	0.63		0	25	34	108	3670
2669487	Freight Corridor Mainline	58	0.64		0	21	29	94	2591
2669488	Freight Corridor Mainline	60	4.56		0	166	283	730	3967
2669489	Freight Corridor Mainline	59	1.13		0	155	267	628	4028
2669494	Freight Corridor Mainline	54	0.27		0	164	279	659	5137
2669495	Pico Off	65	0.54		0	8	10	28	1209
2669498	Pico On	13	0.45		0	4	5	14	1079
2669502	Harbour Scenic On	7	0.25		0	7	10	32	1168
2669505	Frt Off	6	0.19		0	15	19	62	1423
2669511	Pico On Freight Corridor	13	0.22		0	4	5	14	1079
2669512	Pico Off Freight Corridor	8	0.10		0	8	10	28	1209
2669523	Anaheim On	8	0.80		0	31	43	112	1065
2669524	Anaheim Off	4	0.30		0	28	42	111	1344
2669548	Mainline	46	0.45		23943	131	174	296	12
2669556	Mainline	45	0.29	0.30	21253	250	335	595	77
2669564	Mainline	34	0.28		29889	316	478	1080	2554
2669594	Mixed Flow Pico On	6	0.13		358	8	10	28	1575

Table C.3-5A. Alternative 6B Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	63	0.10		5743	41	42	77	1528
2669599	Shoreline Off	45	0.27		12064	53	54	101	75
2669600	Shoreline Off	45	0.59		12064	53	54	101	75
2669601	Mainline	63	0.19		2062	17	18	37	899
2669604	Freight Corridor Mainline	65	0.44		0	36	52	140	2553
2669606	SB Frt Corr On	1	0.47		0	7	10	34	1971
2669608	Mainline	59	0.08		21814	121	131	254	1708
2669612	Mainline	55	0.29		17997	108	132	290	1410
2669619	SB Frt Corr to GP On	15	0.73		0	133	232	584	37
2669628	Mainline	60	0.09		20990	218	297	556	260
2669632	Mainline	60	0.17		12570	161	215	434	245
2669643	Mainline	52	0.21		22372	248	325	537	77
2669645	Mainline	43	0.32		35912	192	253	429	243
2669651	Mainline	43	0.32		29557	174	231	396	161
2669653	Mainline	45	0.14		24057	261	353	630	77
2669659	Mainline	43	0.20		27397	171	230	399	110
2669661	Mainline	40	0.18		25630	278	377	668	77
2669676	Mainline	47	0.10		26106	149	197	340	12
2669687	Mainline	38	0.20		21448	218	322	749	2245
2669689	Mainline	65	0.21		2036	20	20	40	618
2669696	NB Frt Corr Off	7	0.64		0	110	197	443	401
2669697	Mainline	52	0.21		21212	227	245	386	610
2669698	Freight Corridor Mainline	65	0.35	0.34	0	10	19	41	907
2669704	Mainline	34	0.38		15065	193	272	603	2356
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	10	19	41	907
2669714	Mainline	49	0.53		26387	161	213	361	80
2669749	Mainline	37	0.11		21253	247	366	791	2578
2669751	Mainline	37	0.18		32737	188	247	420	179
2669759	Freight Corridor Mainline	60	1.12		0	166	283	730	3967
2669760	Patata On	65	0.32		0	20	24	37	520
2669763	Patata Off	65	0.26		0	33	44	69	410
2669764	Freight Corridor Mainline	59	4.45		0	155	267	628	4028
2669766	SR 91 EB Off	40	0.97		0	10	12	30	1108
2669768	Freight Corridor Mainline	57	1.48		0	175	294	758	4561
2669769	WB SR 91 On	40	1.31		0	9	11	28	594
2669788	Mainline	36	0.30		28831	309	451	1050	2245
88573	Mainline	42	0.69	0.48	27123	292	391	683	77

Table C.3-5A. Alternative 6B Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	44	0.70	0.53	28631	183	240	411	110
2669553	Mainline	49	0.40	0.33	23635	274	373	648	77
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	12	0.93	0.52	0	10	19	42	907
2669717	Freight Corridor Mainline	62	3.02	2.10	0	146	259	694	3447
2669718	SB Frt Corr Off	48	0.60	0.50	0	135	240	653	2541
2669748	End of Frt Corridor Mainline	64	1.71	1.20	0	91	176	414	1117
2669750	Frt Corr NB On	55	0.66	0.62	0	33	54	137	2501
2669761	Freight Corridor Mainline	61	2.66	2.05	0	127	225	553	3618
2669699	Mainline	50	0.33	0.39	19222	233	315	550	77

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-5B. Alternative 6B Post Processed Mid Day Traffic Flows (9:00AM - 3:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	49	0.39		54337	581	804	1336	357
14604	Mainline	57	0.38		36527	824	1078	1679	2019
14610	Mainline	51	0.63		59744	641	872	1437	558
14700	Mainline	58	0.78		42054	896	1157	1790	2118
14705	Mainline	51	0.36		53367	540	744	1222	558
14712	Mainline	61	0.36		33923	759	998	1512	2118
14729	Mainline	56	0.18		23184	478	709	1379	5548
14740	Mainline	48	0.65		44126	794	1130	2250	3873
14748	Mainline	24	0.11		28438	624	804	1528	8147
14761	Mainline	24	0.20		28438	624	804	1528	8147
14768	Mainline	32	0.17		24851	560	770	1511	8121
14775	Mainline	46	0.17		47151	848	1193	2385	3958
14776	Mainline	34	0.46		33324	693	1044	2177	8121
14784	Mainline	45	0.19		42443	786	1115	2049	8828
14790	Mainline	43	0.36		55319	909	1347	2587	4460
14791	Mainline	35	0.17		31984	678	1026	2147	8121
14794	Mainline	49	0.20		37961	617	876	1706	3958
14799	Mainline	43	0.06		41581	760	1046	2065	3958
14828	Mainline	46	0.17		51426	845	1272	2429	4459
14858	Mainline	45	0.37		42443	786	1115	2049	8828
14864	Mainline	50	0.10		35188	658	958	1740	8828
14886	Mainline	53	0.06		51426	495	671	1101	34
14898	Mainline	52	0.73		53582	519	718	1176	784
14944	Mainline	61	0.39		37044	814	1065	1602	2118
14964	Mainline	62	0.41		42451	902	1154	1712	2153
14991	Mainline	49	0.25		48589	408	556	874	947
15081	Mainline	51	0.74		46015	373	517	816	947
15102	Mainline	64	0.25		28375	698	903	1350	2153
15182	Mainline	64	0.90		26365	634	888	1348	2153
15209	Mainline	51	0.26		47127	383	529	832	959
15290	Mainline	50	0.25		56845	527	732	1313	1488
15352	Mainline	50	0.19		57403	532	740	1327	1494
15353	Mainline	64	0.47		36957	726	1061	2109	2738
15393	Mainline	49	0.40		58528	547	753	1338	1601
15412	Mainline	64	0.31		40602	789	1116	2159	2982
15433	Mainline	53	0.21		52531	454	635	1133	1601
15489	Mainline	64	0.35		37123	734	1039	2026	2982

Table C.3-5B. Alternative 6B Post Processed Mid Day Traffic Flows (9:00AM - 3:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	58	0.07		41806	290	404	743	1950
15536	Mainline	64	0.38		27907	638	855	1715	2761
15549	Mainline	58	0.20		41806	290	404	743	1950
15552	Mainline	64	0.33		20502	507	714	1494	2761
15581	Mainline	62	0.44		30089	100	132	247	1798
15586	Mainline	64	0.23		22751	579	745	1463	2978
15588	Mainline	64	0.08		22751	579	745	1463	2978
15591	Mainline	56	0.25		39800	292	382	765	3440
15615	Mainline	64	0.27		22751	579	745	1463	2978
15655	Mainline	55	0.40		44462	352	447	879	3912
15700	Mainline	61	0.45		33409	733	906	1738	3380
15749	Mainline	56	0.69		40961	312	388	771	4202
15782	Mainline	56	0.53		34398	193	226	426	4202
15785	Mainline	61	0.45		29971	674	828	1664	3380
15915	Mainline	60	0.20		30638	692	838	1654	3397
15954	Mainline	53	0.44		39055	609	883	1747	4666
16041	Mainline	60	0.96		18189	178	185	323	3557
16042	Mainline	60	0.12		28382	334	367	701	5143
16050	Mainline	61	0.87		34841	437	478	904	5717
16053	Mainline	59	0.43		27641	326	348	617	4497
16086	Mainline	61	0.40		32084	445	478	882	5834
16121	Mainline	60	0.48		28963	412	467	883	5717
16123	Mainline	62	0.45		21984	305	336	600	4502
16134	Mainline	63	0.04		17503	169	183	312	1533
16135	Mainline	64	0.01		10915	113	123	214	1220
16152	Shoreline On	61	0.79		9497	102	110	187	49
16168	Mainline	62	0.33		6581	101	121	294	5528
16185	Mainline	63	0.16		17503	169	183	312	1533
16187	Mainline	65	0.13		6581	98	106	221	1930
16199	Shoreline Off	53	0.08		16418	182	186	327	815
16237	Mainline	62	0.37		26863	332	347	624	4424
16247	Mainline	55	0.49		32869	595	848	1554	4761
16254	Mainline	58	0.21		25273	443	644	1173	3557
16266	Mainline	57	0.29		22413	258	277	545	4532
88574	Mainline	53	0.13		51426	495	671	1101	34
88575	Mainline	61	0.89		40186	854	1106	1664	2118
88576	Mainline	47	0.55		60347	627	844	1367	784

Table C.3-5B. Alternative 6B Post Processed Mid Day Traffic Flows (9:00AM - 3:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	62	0.34		8693	109	128	308	6265
127416	Mainline	54	0.33		38785	283	356	727	3912
127435	Mainline	65	0.15		1544	31	33	67	1038
127443	Mainline	65	0.36		4443	55	58	114	1607
1643216	Mainline	64	0.28		261	12	13	27	863
1656691	Mainline	57	0.28		22413	258	277	545	4532
1657648	Mainline	57	0.48		38653	254	373	704	1601
1657653	Mainline	60	0.09		30638	692	838	1654	3397
1657654	Mainline	56	0.13		39055	252	292	503	4543
1657662	Mainline	60	0.61		26646	616	716	1336	3397
1657665	Mainline	60	0.07		30638	692	838	1654	3397
1657668	Mainline	62	0.59		20731	292	327	587	4497
1658094	Mainline	64	0.14		10915	113	123	214	1220
1658097	Mainline	64	0.13		10915	113	123	214	1220
2669480	Freight Corridor Mainline	55	1.53		0	121	200	413	12409
2669481	Freight Corridor Mainline	61	1.93		0	110	159	415	11447
2669482	Freight Corridor Mainline	62	1.70		0	54	81	220	8221
2669483	Freight Corridor Mainline	62	0.39		0	54	81	220	8221
2669484	Freight Corridor Mainline	62	2.17		0	54	81	220	8221
2669485	Freight Corridor Mainline	61	2.21		0	110	159	415	11447
2669486	Freight Corridor Mainline	64	0.63		0	34	49	139	8617
2669487	Freight Corridor Mainline	57	0.64		0	28	39	112	6223
2669488	Freight Corridor Mainline	62	4.56		0	371	650	1460	7332
2669489	Freight Corridor Mainline	60	1.13		0	106	177	362	10558
2669494	Freight Corridor Mainline	55	0.27		0	121	200	413	12409
2669495	Pico Off	65	0.54		0	5	8	24	2054
2669498	Pico On	15	0.45		0	7	10	27	2395
2669502	Harbour Scenic On	4	0.25		0	14	22	66	3578
2669505	Frt Off	8	0.19		0	14	18	45	2645
2669511	Pico On Freight Corridor	15	0.22		0	7	10	27	2395
2669512	Pico Off Freight Corridor	13	0.10		0	5	8	24	2054
2669523	Anaheim On	10	0.80		0	77	112	272	2830
2669524	Anaheim Off	5	0.30		0	37	55	137	2569
2669548	Mainline	53	0.45		47230	437	596	971	34
2669556	Mainline	56	0.29	0.30	35188	763	1002	1556	2018
2669564	Mainline	43	0.28		55319	909	1347	2587	4460
2669594	Mixed Flow Pico On	9	0.13		821	5	8	24	3155

Table C.3-5B. Alternative 6B Post Processed Mid Day Traffic Flows (9:00AM - 3:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	64	0.10		10445	146	160	302	3608
2669599	Shoreline Off	53	0.27		16418	182	186	327	815
2669600	Shoreline Off	53	0.59		16418	182	186	327	815
2669601	Mainline	64	0.19		4691	71	80	167	1580
2669604	Freight Corridor Mainline	65	0.44		0	42	63	161	4623
2669606	SB Frt Corr On	2	0.47		0	12	19	59	3598
2669608	Mainline	61	0.08		34841	437	478	904	5717
2669612	Mainline	60	0.29		26206	325	363	717	4666
2669619	SB Frt Corr to GP On	17	0.73		0	329	588	1275	123
2669628	Mainline	64	0.09		37123	734	1039	2026	2982
2669632	Mainline	64	0.17		20502	507	714	1494	2761
2669643	Mainline	61	0.21		37044	814	1065	1602	2118
2669645	Mainline	52	0.32		62930	649	866	1385	951
2669651	Mainline	51	0.32		56051	576	790	1293	695
2669653	Mainline	59	0.14		37198	821	1054	1626	2118
2669659	Mainline	49	0.20		54337	581	804	1336	357
2669661	Mainline	57	0.18		36527	824	1078	1679	2019
2669676	Mainline	53	0.10		51426	495	671	1101	34
2669687	Mainline	49	0.20		37961	617	876	1706	3958
2669689	Mainline	65	0.21		1418	12	13	27	1172
2669696	NB Frt Corr Off	11	0.64		0	8	14	28	962
2669697	Mainline	58	0.21		32869	734	831	1382	3799
2669698	Freight Corridor Mainline	65	0.35	0.34	0	16	31	63	1968
2669704	Mainline	47	0.38		27351	509	687	1284	8147
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	16	31	63	1968
2669714	Mainline	55	0.53		53204	537	729	1181	319
2669749	Mainline	50	0.11		35188	658	958	1740	8828
2669751	Mainline	47	0.18		60347	627	844	1367	784
2669759	Freight Corridor Mainline	62	1.12		0	371	650	1460	7332
2669760	Patata On	65	0.32		0	25	28	38	939
2669763	Patata Off	65	0.26		0	61	79	112	1452
2669764	Freight Corridor Mainline	60	4.45		0	106	177	362	10558
2669766	SR 91 EB Off	40	0.97		0	15	20	54	1851
2669768	Freight Corridor Mainline	60	1.48		0	384	665	1499	8344
2669769	WB SR 91 On	40	1.31		0	13	16	39	1012
2669788	Mainline	48	0.30		48120	859	1202	2390	3958
88573	Mainline	57	0.69	0.48	40054	880	1128	1719	2019

Table C.3-5B. Alternative 6B Post Processed Mid Day Traffic Flows (9:00AM - 3:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	50	0.70	0.53	57304	606	819	1339	537
2669553	Mainline	60	0.40	0.33	34963	808	1062	1603	2018
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	10	0.93	0.52	0	16	31	63	1968
2669717	Freight Corridor Mainline	63	3.02	2.10	0	342	620	1427	6393
2669718	SB Frt Corr Off	55	0.60	0.50	0	326	588	1365	4425
2669748	End of Frt Corridor Mainline	65	1.71	1.20	0	52	103	205	2297
2669750	Frt Corr NB On	56	0.66	0.62	0	5	9	20	6810
2669761	Freight Corridor Mainline	62	2.66	2.05	0	61	106	226	9107
2669699	Mainline	60	0.33	0.39	30918	703	928	1409	2018

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-5C. Alternative 6B Post Processed PM Traffic Flows (3:00PM - 7:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	26	0.39		42753	163	320	548	453
14604	Mainline	34	0.38		31898	431	817	1255	144
14610	Mainline	29	0.63		46867	181	350	595	474
14700	Mainline	37	0.78		33977	439	824	1262	144
14705	Mainline	28	0.36		41188	149	290	498	474
14712	Mainline	41	0.36		28402	388	759	1177	144
14729	Mainline	37	0.18		23317	246	568	1201	3404
14740	Mainline	27	0.65		36759	440	1000	2288	1779
14748	Mainline	9	0.11		24570	291	611	1363	4940
14761	Mainline	9	0.20		24570	291	611	1363	4940
14768	Mainline	12	0.17		21159	272	589	1343	4935
14775	Mainline	24	0.17		39213	464	1037	2359	1822
14776	Mainline	14	0.46		30417	330	766	1780	4935
14784	Mainline	25	0.19		32740	301	654	1374	5038
14790	Mainline	24	0.36		39723	419	952	2084	1960
14791	Mainline	16	0.17		29709	326	756	1764	4935
14794	Mainline	29	0.20		29001	312	705	1601	1786
14799	Mainline	22	0.06		31919	409	904	2062	1822
14828	Mainline	27	0.17		37169	392	897	1967	1960
14858	Mainline	25	0.37		32740	301	654	1374	5038
14864	Mainline	31	0.10		28320	267	589	1232	5038
14886	Mainline	33	0.06		37169	114	220	371	6
14898	Mainline	30	0.73		41665	146	289	500	529
14944	Mainline	42	0.39		32645	406	790	1233	142
14964	Mainline	44	0.41		36824	427	818	1262	158
14991	Mainline	27	0.25		35524	84	180	303	553
15081	Mainline	29	0.74		31998	70	150	251	553
15102	Mainline	44	0.25		25894	356	707	1081	158
15182	Mainline	49	0.90		23959	339	690	1055	158
15209	Mainline	28	0.26		32561	72	152	254	559
15290	Mainline	28	0.25		39841	89	186	346	559
15352	Mainline	28	0.19		40420	91	191	355	566
15353	Mainline	44	0.47		34623	359	728	1370	218
15393	Mainline	26	0.40		41743	96	198	363	580
15412	Mainline	46	0.31		38824	378	758	1417	323
15433	Mainline	32	0.21		38027	77	162	300	580
15489	Mainline	48	0.35		36437	359	729	1372	323

Table C.3-5C. Alternative 6B Post Processed PM Traffic Flows (3:00PM - 7:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	43	0.07		31073	29	58	103	676
15536	Mainline	49	0.38		28362	333	641	1200	286
15549	Mainline	43	0.20		31073	29	58	103	676
15552	Mainline	48	0.33		22047	259	535	986	284
15581	Mainline	54	0.44		24031	8	14	23	676
15586	Mainline	58	0.23		24749	294	552	965	367
15588	Mainline	58	0.08		24749	294	552	965	367
15591	Mainline	46	0.25		31749	34	63	111	722
15615	Mainline	58	0.27		24749	294	552	965	367
15655	Mainline	40	0.40		35983	54	99	165	830
15700	Mainline	47	0.45		34833	331	597	1007	484
15749	Mainline	41	0.69		34454	47	80	134	886
15782	Mainline	42	0.53		30291	14	21	29	886
15785	Mainline	46	0.45		32052	321	559	975	484
15915	Mainline	44	0.20		32985	330	566	965	499
15954	Mainline	35	0.44		33376	274	662	1402	980
16041	Mainline	48	0.96		19904	40	56	73	774
16042	Mainline	52	0.12		26372	64	95	139	1041
16050	Mainline	55	0.87		29118	79	117	171	1077
16053	Mainline	47	0.43		25174	74	107	152	995
16086	Mainline	56	0.40		25928	71	92	119	1150
16121	Mainline	54	0.48		22727	65	89	116	1077
16123	Mainline	54	0.45		21294	63	86	123	996
16134	Mainline	55	0.04		17575	37	49	69	649
16135	Mainline	60	0.01		13064	30	40	57	610
16152	Shoreline On	47	0.79		8935	19	25	33	0
16168	Mainline	63	0.33		2123	27	45	102	2363
16185	Mainline	55	0.16		17575	37	49	69	649
16187	Mainline	65	0.13		2123	14	17	26	637
16199	Shoreline Off	32	0.08		15045	10	13	17	5
16237	Mainline	57	0.37		20876	26	33	42	1007
16247	Mainline	34	0.49		34361	288	699	1412	948
16254	Mainline	42	0.21		24801	228	561	1116	774
16266	Mainline	45	0.29		20233	35	51	76	922
88574	Mainline	33	0.13		37169	114	220	371	6
88575	Mainline	43	0.89		35044	425	817	1262	144
88576	Mainline	24	0.55		46233	169	325	554	529

Table C.3-5C. Alternative 6B Post Processed PM Traffic Flows (3:00PM - 7:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	63	0.34		3492	32	51	116	2637
127416	Mainline	38	0.33		32593	38	67	115	830
127435	Mainline	65	0.15		3237	12	15	27	641
127443	Mainline	65	0.36		4101	17	20	35	752
1643216	Mainline	60	0.28		2345	10	14	25	416
1656691	Mainline	45	0.28		20233	35	51	76	922
1657648	Mainline	42	0.48		28910	21	46	85	580
1657653	Mainline	44	0.09		32985	330	566	965	499
1657654	Mainline	41	0.13		33376	28	45	58	973
1657662	Mainline	43	0.61		28861	347	547	788	499
1657665	Mainline	44	0.07		32985	330	566	965	499
1657668	Mainline	55	0.59		20036	62	86	124	995
1658094	Mainline	60	0.14		13064	30	40	57	610
1658097	Mainline	60	0.13		13064	30	40	57	610
2669480	Freight Corridor Mainline	50	1.53		0	187	456	1000	8615
2669481	Freight Corridor Mainline	59	1.93		0	148	291	654	8387
2669482	Freight Corridor Mainline	63	1.70		0	154	310	683	3893
2669483	Freight Corridor Mainline	63	0.39		0	154	310	683	3893
2669484	Freight Corridor Mainline	63	2.17		0	154	310	683	3893
2669485	Freight Corridor Mainline	59	2.21		0	148	291	654	8387
2669486	Freight Corridor Mainline	63	0.63		0	72	144	347	7099
2669487	Freight Corridor Mainline	57	0.64		0	57	113	271	4829
2669488	Freight Corridor Mainline	61	4.56		0	340	845	1939	3224
2669489	Freight Corridor Mainline	57	1.13		0	162	405	893	7366
2669494	Freight Corridor Mainline	50	0.27		0	187	456	1000	8615
2669495	Pico Off	65	0.54		0	42	79	191	1043
2669498	Pico On	10	0.45		0	16	30	76	2270
2669502	Harbour Scenic On	5	0.25		0	42	86	186	1270
2669505	Frt Off	6	0.19		0	14	27	85	3559
2669511	Pico On Freight Corridor	10	0.22		0	16	30	76	2270
2669512	Pico Off Freight Corridor	14	0.10		0	42	79	191	1043
2669523	Anaheim On	7	0.80		0	76	148	306	1288
2669524	Anaheim Off	6	0.30		0	98	203	417	1125
2669548	Mainline	32	0.45		33885	99	195	331	6
2669556	Mainline	37	0.29	0.30	28320	355	668	1020	144
2669564	Mainline	24	0.28		39723	419	952	2084	1960
2669594	Mixed Flow Pico On	12	0.13		308	42	79	191	1350

Table C.3-5C. Alternative 6B Post Processed PM Traffic Flows (3:00PM - 7:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	63	0.10		5830	15	19	27	1002
2669599	Shoreline Off	32	0.27		15045	10	13	17	5
2669600	Shoreline Off	32	0.59		15045	10	13	17	5
2669601	Mainline	64	0.19		1206	2	3	4	543
2669604	Freight Corridor Mainline	65	0.44		0	140	282	608	2168
2669606	SB Frt Corr On	6	0.47		0	14	28	75	1725
2669608	Mainline	55	0.08		29118	79	117	171	1077
2669612	Mainline	48	0.29		24835	81	149	292	980
2669619	SB Frt Corr to GP On	4	0.73		0	223	603	1382	7
2669628	Mainline	48	0.09		36437	359	729	1372	323
2669632	Mainline	48	0.17		22047	259	535	986	284
2669643	Mainline	42	0.21		32645	406	790	1233	142
2669645	Mainline	33	0.32		47271	171	332	564	553
2669651	Mainline	28	0.32		42668	156	304	521	507
2669653	Mainline	37	0.14		30211	416	780	1203	144
2669659	Mainline	26	0.20		42753	163	320	548	453
2669661	Mainline	34	0.18		31898	431	817	1255	144
2669676	Mainline	33	0.10		37169	114	220	371	6
2669687	Mainline	29	0.20		29001	312	705	1601	1786
2669689	Mainline	64	0.21		4129	10	14	26	610
2669696	NB Frt Corr Off	5	0.64		0	57	156	338	228
2669697	Mainline	40	0.21		34361	391	625	833	721
2669698	Freight Corridor Mainline	65	0.35	0.34	0	49	131	247	924
2669704	Mainline	26	0.38		23748	226	481	1047	4800
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	49	131	247	924
2669714	Mainline	34	0.53		40311	157	309	523	436
2669749	Mainline	31	0.11		28320	267	589	1232	5038
2669751	Mainline	24	0.18		46233	169	325	554	529
2669759	Freight Corridor Mainline	61	1.12		0	340	845	1939	3224
2669760	Patata On	65	0.32		0	30	51	66	347
2669763	Patata Off	65	0.26		0	55	107	157	886
2669764	Freight Corridor Mainline	57	4.45		0	162	405	893	7366
2669766	SR 91 EB Off	40	0.97		0	30	50	102	1249
2669768	Freight Corridor Mainline	59	1.48		0	380	912	2063	3900
2669769	WB SR 91 On	40	1.31		0	41	68	122	676
2669788	Mainline	29	0.30		39497	466	1038	2356	1822
88573	Mainline	36	0.69	0.48	33978	451	843	1270	144

Table C.3-5C. Alternative 6B Post Processed PM Traffic Flows (3:00PM - 7:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	28	0.70	0.53	44324	172	336	570	453
2669553	Mainline	43	0.40	0.33	29614	425	806	1193	144
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	11	0.93	0.52	0	49	130	249	924
2669717	Freight Corridor Mainline	62	3.02	2.10	0	311	794	1873	2878
2669718	SB Frt Corr Off	51	0.60	0.50	0	262	663	1625	1954
2669748	End of Frt Corridor Mainline	63	1.71	1.20	0	115	317	666	1586
2669750	Frt Corr NB On	56	0.66	0.62	0	5	11	29	4894
2669761	Freight Corridor Mainline	60	2.66	2.05	0	118	309	715	6479
2669699	Mainline	42	0.33	0.39	25714	339	643	963	144

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-5D. Alternative 6B Post Processed Night Time Traffic Flows (7:00PM - 6:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	65	0.39		15646	146	307	1187	1383
14604	Mainline	65	0.38		15090	141	295	1111	465
14610	Mainline	65	0.63		16518	151	313	1198	1396
14700	Mainline	65	0.78		16280	149	306	1140	513
14705	Mainline	65	0.36		13936	125	268	1003	1396
14712	Mainline	65	0.36		14034	124	263	958	513
14729	Mainline	65	0.18		14000	131	245	885	135
14740	Mainline	65	0.65		16458	157	294	1178	76
14748	Mainline	65	0.11		12982	128	211	846	158
14761	Mainline	65	0.20		12982	128	211	846	158
14768	Mainline	65	0.17		11051	107	195	812	147
14775	Mainline	65	0.17		16359	160	295	1180	76
14776	Mainline	65	0.46		16942	160	301	1191	147
14784	Mainline	65	0.19		19849	182	367	1466	460
14790	Mainline	65	0.36		19099	178	366	1483	412
14791	Mainline	65	0.17		15809	153	293	1171	147
14794	Mainline	65	0.20		10854	93	168	620	76
14799	Mainline	65	0.06		11289	108	187	794	76
14828	Mainline	65	0.17		16135	144	303	1161	412
14858	Mainline	65	0.37		19849	182	367	1466	460
14864	Mainline	65	0.10		16462	145	300	1118	460
14886	Mainline	65	0.06		16135	143	301	1148	322
14898	Mainline	65	0.73		13826	126	272	1025	1449
14944	Mainline	65	0.39		14152	125	267	977	809
14964	Mainline	65	0.41		15590	138	285	1028	850
14991	Mainline	65	0.25		13090	116	242	889	1559
15081	Mainline	65	0.74		12520	110	234	862	1559
15102	Mainline	65	0.25		13033	109	231	834	850
15182	Mainline	65	0.90		12865	107	228	821	850
15209	Mainline	65	0.26		12905	113	238	871	1559
15290	Mainline	65	0.25		20052	185	394	1702	3722
15352	Mainline	65	0.19		20538	190	402	1724	3731
15353	Mainline	65	0.47		21170	188	402	1756	3615
15393	Mainline	65	0.40		20538	190	402	1724	3731
15412	Mainline	65	0.31		22417	199	417	1797	3835
15433	Mainline	65	0.21		18085	166	358	1545	3731
15489	Mainline	65	0.35		20167	176	376	1624	3835

Table C.3-5D. Alternative 6B Post Processed Night Time Traffic Flows (7:00PM - 6:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	65	0.07		16118	149	323	1433	4084
15536	Mainline	65	0.38		16874	146	303	1290	3832
15549	Mainline	65	0.20		16118	149	323	1433	4084
15552	Mainline	65	0.33		13454	114	247	1125	3832
15581	Mainline	65	0.44		11978	112	236	1055	4079
15586	Mainline	65	0.23		13870	118	250	1131	3843
15588	Mainline	65	0.08		13870	118	250	1131	3843
15591	Mainline	64	0.25		17576	157	330	1694	6693
15615	Mainline	65	0.27		13870	118	250	1131	3843
15655	Mainline	64	0.40		18063	162	335	1708	6786
15700	Mainline	65	0.45		19308	161	327	1613	5059
15749	Mainline	64	0.69		17012	152	310	1613	6920
15782	Mainline	64	0.53		14990	128	255	1285	6920
15785	Mainline	65	0.45		16612	137	284	1471	5059
15915	Mainline	65	0.20		18420	155	309	1542	5332
15954	Mainline	64	0.44		17734	155	301	1410	7280
16041	Mainline	65	0.96		10493	81	139	724	5347
16042	Mainline	65	0.12		13816	114	205	1082	7709
16050	Mainline	65	0.87		15164	128	231	1177	7937
16053	Mainline	65	0.43		13522	108	193	975	5809
16086	Mainline	65	0.40		12346	111	197	1026	6427
16121	Mainline	65	0.48		11400	99	188	999	6369
16123	Mainline	65	0.45		11959	97	170	856	4320
16134	Mainline	65	0.04		9720	75	128	643	2936
16135	Mainline	65	0.01		8300	60	98	480	2344
16152	Shoreline On	65	0.79		6097	49	80	372	0
16168	Mainline	65	0.33		1221	13	24	156	3904
16185	Mainline	65	0.16		9720	75	128	643	2936
16187	Mainline	65	0.13		1221	13	24	154	3625
16199	Shoreline Off	65	0.08		6307	51	80	381	201
16237	Mainline	65	0.37		9727	86	149	769	4513
16247	Mainline	65	0.49		18561	158	304	1369	5547
16254	Mainline	65	0.21		15391	125	242	1052	5347
16266	Mainline	64	0.29		10623	86	149	826	7268
88574	Mainline	65	0.13		16135	143	301	1148	322
88575	Mainline	65	0.89		16135	142	293	1059	809
88576	Mainline	65	0.55		16035	144	300	1113	1449

Table C.3-5D. Alternative 6B Post Processed Night Time Traffic Flows (7:00PM - 6:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	65	0.34		1360	16	26	162	4025
127416	Mainline	64	0.33		16201	144	300	1585	6786
127435	Mainline	65	0.15		2218	11	19	109	2348
127443	Mainline	65	0.36		2361	13	20	111	2441
1643216	Mainline	64	0.28		2160	10	18	108	2281
1656691	Mainline	64	0.28		10623	86	149	826	7268
1657648	Mainline	65	0.48		14875	137	311	1405	3731
1657653	Mainline	65	0.09		18420	155	309	1542	5332
1657654	Mainline	64	0.13		17734	154	300	1404	7280
1657662	Mainline	65	0.61		16430	133	260	1246	5332
1657665	Mainline	65	0.07		18420	155	309	1542	5332
1657668	Mainline	65	0.59		10688	85	159	830	4275
1658094	Mainline	65	0.14		8300	60	98	480	2344
1658097	Mainline	65	0.13		8300	60	98	480	2344
2669480	Freight Corridor Mainline	65	1.53		0	11	23	128	3311
2669481	Freight Corridor Mainline	65	1.93		0	7	16	101	3273
2669482	Freight Corridor Mainline	65	1.70		0	2	5	23	1378
2669483	Freight Corridor Mainline	65	0.39		0	2	5	23	1378
2669484	Freight Corridor Mainline	65	2.17		0	2	5	23	1378
2669485	Freight Corridor Mainline	65	2.21		0	7	16	101	3273
2669486	Freight Corridor Mainline	65	0.63		0	6	12	85	3167
2669487	Freight Corridor Mainline	65	0.64		0	6	12	85	2964
2669488	Freight Corridor Mainline	65	4.56		0	3	6	29	1035
2669489	Freight Corridor Mainline	65	1.13		0	8	17	76	1630
2669494	Freight Corridor Mainline	65	0.27		0	11	23	128	3311
2669495	Pico Off	65	0.54		0	0	0	0	654
2669498	Pico On	20	0.45		0	0	0	0	204
2669502	Harbour Scenic On	19	0.25		0	4	8	63	1504
2669505	Frt Off	20	0.19		0	2	4	22	1460
2669511	Pico On Freight Corridor	20	0.22		0	0	0	0	204
2669512	Pico Off Freight Corridor	30	0.10		0	0	0	0	654
2669523	Anaheim On	20	0.80		0	1	3	16	105
2669524	Anaheim Off	20	0.30		0	2	4	21	445
2669548	Mainline	65	0.45		14313	125	264	986	322
2669556	Mainline	65	0.29	0.30	16462	141	293	1083	103
2669564	Mainline	65	0.28		19099	178	366	1483	412
2669594	Mixed Flow Pico On	30	0.13		144	0	0	0	750

Table C.3-5D. Alternative 6B Post Processed Night Time Traffic Flows (7:00PM - 6:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	65	0.10		3420	36	69	388	4312
2669599	Shoreline Off	65	0.27		6307	51	80	381	201
2669600	Shoreline Off	65	0.59		6307	51	80	381	201
2669601	Mainline	65	0.19		1152	12	23	151	3398
2669604	Freight Corridor Mainline	65	0.44		0	2	4	21	1099
2669606	SB Frt Corr On	20	0.47		0	0	0	3	279
2669608	Mainline	65	0.08		15164	128	231	1177	7937
2669612	Mainline	65	0.29		13181	113	202	1105	7280
2669619	SB Frt Corr to GP On	20	0.73		0	1	1	6	0
2669628	Mainline	65	0.09		20167	176	376	1624	3835
2669632	Mainline	65	0.17		13454	114	247	1125	3832
2669643	Mainline	65	0.21		14152	125	267	977	809
2669645	Mainline	65	0.32		16279	150	304	1117	1559
2669651	Mainline	65	0.32		15628	141	295	1099	1449
2669653	Mainline	65	0.14		14968	135	283	1050	513
2669659	Mainline	65	0.20		15646	146	307	1187	1383
2669661	Mainline	65	0.18		15090	141	295	1111	465
2669676	Mainline	65	0.10		16135	143	301	1148	322
2669687	Mainline	65	0.20		10854	93	168	620	76
2669689	Mainline	65	0.21		2202	10	18	108	2344
2669696	NB Frt Corr Off	20	0.64		0	3	7	26	38
2669697	Mainline	65	0.21		18561	155	297	1343	5509
2669698	Freight Corridor Mainline	65	0.35	0.34	0	1	2	9	476
2669704	Mainline	65	0.38		12036	102	182	661	158
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	1	2	9	476
2669714	Mainline	65	0.53		14705	132	276	1031	333
2669749	Mainline	65	0.11		16462	145	300	1118	460
2669751	Mainline	65	0.18		16035	144	300	1113	1449
2669759	Freight Corridor Mainline	65	1.12		0	3	6	29	1035
2669760	Patata On	65	0.32		0	1	2	7	468
2669763	Patata Off	65	0.26		0	3	5	16	174
2669764	Freight Corridor Mainline	65	4.45		0	8	17	76	1630
2669766	SR 91 EB Off	40	0.97		0	3	6	51	1681
2669768	Freight Corridor Mainline	65	1.48		0	3	6	29	1378
2669769	WB SR 91 On	40	1.31		0	0	0	0	343
2669788	Mainline	65	0.30		17394	167	302	1196	76
88573	Mainline	65	0.69	0.48	16835	155	316	1177	465

Table C.3-5D. Alternative 6B Post Processed Night Time Traffic Flows (7:00PM - 6:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	65	0.70	0.53	17593	161	329	1255	1383
2669553	Mainline	65	0.40	0.33	14399	125	259	932	103
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	20	0.93	0.52	0	1	2	9	476
2669717	Freight Corridor Mainline	65	3.02	2.10	0	2	4	22	566
2669718	SB Frt Corr Off	65	0.60	0.50	0	1	3	13	90
2669748	End of Frt Corridor Mainline	65	1.71	1.20	0	2	5	24	1098
2669750	Frt Corr NB On	65	0.66	0.62	0	3	7	35	357
2669761	Freight Corridor Mainline	65	2.66	2.05	0	5	12	60	1456
2669699	Mainline	65	0.33	0.39	14199	121	253	912	103

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-6A. Alternative 6C Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	41	0.39		28198	205	283	531	205
14604	Mainline	39	0.38		26018	181	248	447	57
14610	Mainline	43	0.63		30894	221	300	559	232
14700	Mainline	42	0.78		27382	186	253	453	57
14705	Mainline	42	0.36		28189	195	269	503	232
14712	Mainline	50	0.36		21954	143	199	361	57
14729	Mainline	48	0.18		13316	165	249	535	616
14740	Mainline	36	0.65		27521	271	389	858	1696
14748	Mainline*	15	0.11		16250	214	290	624	1779
14761	Mainline	15	0.20		16250	214	290	624	1779
14768	Mainline	20	0.17		14224	198	279	614	1772
14775	Mainline	33	0.17		29115	290	412	916	1780
14776	Mainline	24	0.46		19508	241	366	847	1774
14784	Mainline*	33	0.19		24369	252	352	709	1973
14790	Mainline*	36	0.36		30357	288	422	904	2012
14791	Mainline	25	0.17		18627	234	357	830	1772
14794	Mainline	39	0.20		21883	191	271	586	1780
14799	Mainline	30	0.06		25340	251	353	789	1780
14828	Mainline	40	0.17		27283	268	397	848	2011
14858	Mainline	33	0.37		24369	252	352	709	1973
14864	Mainline*	39	0.10		21993	227	325	644	1973
14886	Mainline*	45	0.06		27283	184	248	458	7
14898	Mainline	42	0.73		30007	192	268	502	292
14944	Mainline	51	0.39		22542	140	188	321	57
14964	Mainline	53	0.41		24445	155	204	342	69
14991	Mainline	36	0.25		29179	151	214	397	363
15081	Mainline	39	0.74		27101	136	197	365	363
15102	Mainline	56	0.25		16417	93	124	206	69
15182	Mainline	59	0.90		15032	82	114	190	69
15209	Mainline	38	0.26		28102	140	201	373	367
15290	Mainline	38	0.25		34930	187	268	538	575
15352	Mainline	38	0.19		35937	192	274	551	582
15353	Mainline	58	0.47		20780	118	166	336	427
15393	Mainline	35	0.40		37772	201	283	562	700
15412	Mainline	59	0.31		22959	134	184	369	542
15433	Mainline	40	0.21		34727	173	249	494	700
15489	Mainline*	60	0.35		20820	118	165	332	542

Table C.3-6A. Alternative 6C Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	47	0.07		29696	118	167	337	837
15536	Mainline	60	0.38		17054	95	127	266	532
15549	Mainline*	47	0.20		29696	118	167	337	837
15552	Mainline*	59	0.33		12559	62	87	198	532
15581	Mainline	55	0.44		20408	65	89	185	810
15586	Mainline*	63	0.23		13599	72	92	201	596
15588	Mainline*	63	0.08		13599	72	92	201	596
15591	Mainline	46	0.25		26856	101	135	290	1465
15615	Mainline	63	0.27		13599	72	92	201	596
15655	Mainline	43	0.40		30038	117	152	319	1609
15700	Mainline	56	0.45		19734	111	136	292	731
15749	Mainline	44	0.69		29255	113	144	303	1709
15782	Mainline	45	0.53		24713	76	92	180	1709
15785	Mainline	56	0.45		17799	94	116	262	731
15915	Mainline*	54	0.20		19249	105	126	275	786
15954	Mainline	42	0.44		27833	193	275	587	1995
16041	Mainline	55	0.96		12374	81	86	165	1667
16042	Mainline	55	0.12		19469	113	123	244	2231
16050	Mainline*	57	0.87		22600	135	146	288	2351
16053	Mainline	54	0.43		17710	121	131	251	1941
16086	Mainline	57	0.40		20494	137	147	286	2488
16121	Mainline	56	0.48		17476	124	139	278	2351
16123	Mainline	58	0.45		14616	111	122	240	1942
16134	Mainline	59	0.04		12196	92	101	189	1484
16135	Mainline	62	0.01		9280	75	83	154	1365
16152	Shoreline On	56	0.79		7253	49	54	95	41
16168	Mainline	61	0.33		3177	37	43	119	2779
16185	Mainline*	59	0.16		12196	92	101	189	1484
16187	Mainline	64	0.13		3177	35	38	88	1345
16199	Shoreline Off	46	0.08		11862	51	53	96	85
16237	Mainline	58	0.37		18236	106	110	208	2058
16247	Mainline	45	0.49		20992	238	355	740	1966
16254	Mainline	50	0.21		15875	195	299	624	1667
16266	Mainline*	49	0.29		14618	80	85	175	1926
88574	Mainline*	45	0.13		27283	184	248	458	7
88575	Mainline	51	0.89		24228	157	215	387	57
88576	Mainline	36	0.55		33308	223	302	557	292

Table C.3-6A. Alternative 6C Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	61	0.34		4454	41	48	130	2898
127416	Mainline	41	0.33		27418	102	131	283	1609
127435	Mainline	65	0.15		3301	31	31	72	1144
127443	Mainline	65	0.36		3736	33	33	75	1239
1643216	Mainline	58	0.28		1875	23	27	64	1130
1656691	Mainline	49	0.28		14618	80	85	175	1926
1657648	Mainline	45	0.48		27938	106	157	325	700
1657653	Mainline*	54	0.09		19249	105	126	275	786
1657654	Mainline	45	0.13		27833	103	123	223	1870
1657662	Mainline	52	0.61		17538	76	87	180	786
1657665	Mainline	54	0.07		19249	105	126	275	786
1657668	Mainline	60	0.59		13594	111	122	240	1941
1658094	Mainline*	62	0.14		9280	75	83	154	1365
1658097	Mainline*	62	0.13		9280	75	83	154	1365
2669480	Freight Corridor Mainline*	62	1.53		0	167	286	655	4453
2669481	Freight Corridor Mainline*	64	1.93		0	28	40	118	3407
2669482	Freight Corridor Mainline	63	1.70		0	22	32	97	3578
2669483	Freight Corridor Mainline*	63	0.39		0	22	32	97	3578
2669484	Freight Corridor Mainline*	63	2.17		0	22	32	97	3578
2669485	Freight Corridor Mainline	64	2.21		0	28	40	118	3407
2669486	Freight Corridor Mainline	65	0.63		0	9	13	46	2449
2669487	Freight Corridor Mainline	64	0.64		0	8	12	43	1659
2669488	Freight Corridor Mainline*	63	4.56		0	101	172	430	3245
2669489	Freight Corridor Mainline*	63	1.13		0	164	281	644	3305
2669494	Freight Corridor Mainline	62	0.27		0	167	286	655	4453
2669495	Pico Off	65	0.54		0	1	1	4	935
2669498	Pico On	18	0.45		0	1	1	3	789
2669502	Harbour Scenic On	13	0.25		0	3	5	16	840
2669505	Frt Off	18	0.19		0	5	7	26	819
2669511	Pico On Freight Corridor*	18	0.22		0	1	1	3	789
2669512	Pico Off Freight Corridor*	16	0.10		0	1	1	4	935
2669523	Anaheim On	11	0.80		0	19	27	72	959
2669524	Anaheim Off	7	0.30		0	16	23	67	1209
2669548	Mainline	44	0.45		25053	165	225	415	7
2669556	Mainline	43	0.29	0.30	21993	153	206	371	31
2669564	Mainline	36	0.28		30357	288	422	904	2012
2669594	Mixed Flow Pico On*	10	0.13		451	1	1	4	1341

Table C.3-6A. Alternative 6C Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	62	0.10		6374	52	56	116	1973
2669599	Shoreline Off*	46	0.27		11862	51	53	96	85
2669600	Shoreline Off	46	0.59		11862	51	53	96	85
2669601	Mainline	60	0.19		2748	29	32	76	1280
2669604	Freight Corridor Mainline	65	0.44		0	17	25	71	2144
2669606	SB Frt Corr On	5	0.47		0	5	7	26	1434
2669608	Mainline	57	0.08		22600	135	146	288	2351
2669612	Mainline	52	0.29		18630	110	126	265	1995
2669619	SB Frt Corr to GP On	18	0.73		0	90	152	364	124
2669628	Mainline	60	0.09		20820	118	165	332	542
2669632	Mainline	59	0.17		12559	62	87	198	532
2669643	Mainline*	51	0.21		22542	140	188	321	57
2669645	Mainline	42	0.32		36418	226	307	564	363
2669651	Mainline	42	0.32		30065	206	283	528	269
2669653	Mainline	43	0.14		24368	164	224	410	57
2669659	Mainline*	41	0.20		28198	205	283	531	205
2669661	Mainline*	39	0.18		26018	181	248	447	57
2669676	Mainline	45	0.10		27283	184	248	458	7
2669687	Mainline*	39	0.20		21883	191	271	586	1780
2669689	Mainline	64	0.21		2027	24	27	64	1323
2669696	NB Frt Corr Off	11	0.64		0	140	246	537	1046
2669697	Mainline	49	0.21		20992	96	110	205	920
2669698	Freight Corridor Mainline	65	0.35	0.34	0	5	10	21	804
2669704	Mainline	35	0.38		15813	184	256	532	1779
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	5	10	21	804
2669714	Mainline	48	0.53		27431	194	263	484	80
2669749	Mainline	39	0.11		21993	227	325	644	1973
2669751	Mainline*	36	0.18		33308	223	302	557	292
2669759	Freight Corridor Mainline	63	1.12		0	101	172	430	3245
2669760	Patata On	65	0.32		0	12	13	18	437
2669763	Patata Off	65	0.26		0	23	31	47	389
2669764	Freight Corridor Mainline	63	4.45		0	164	281	644	3305
2669766	SR 91 EB Off	40	0.97		0	4	4	11	1148
2669768	Freight Corridor Mainline	62	1.48		0	111	184	461	3703
2669769	WB SR 91 On	40	1.31		0	10	12	31	458
2669788	Mainline	37	0.30		29486	291	413	914	1780
88573	Mainline	40	0.69	0.48	27542	193	261	463	57

Table C.3-6A. Alternative 6C Post Processed AM Traffic Flows (6:00 - 9:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	43	0.70	0.53	29441	217	294	542	205
2669553	Mainline	48	0.40	0.33	24169	176	240	425	31
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	14	0.93	0.52	0	5	8	23	804
2669717	Freight Corridor Mainline	64	3.02	2.10	0	90	159	412	2808
2669718	SB Frt Corr Off	59	0.60	0.50	0	84	149	391	2004
2669748	End of Frt Corridor Mainline	64	1.71	1.20	0	67	133	322	974
2669750	Frt Corr NB On	62	0.66	0.62	0	74	118	275	1942
2669761	Freight Corridor Mainline	64	2.66	2.05	0	140	251	597	2916
2669699	Mainline	48	0.33	0.39	19801	134	183	324	31

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-6B. Alternative 6C Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	47	0.39		56167	674	976	1740	591
14604	Mainline	56	0.38		36818	741	996	1670	2640
14610	Mainline	50	0.63		61501	732	1045	1846	802
14700	Mainline	57	0.78		42367	809	1075	1791	2739
14705	Mainline	49	0.36		55132	633	917	1629	802
14712	Mainline	61	0.36		33984	663	906	1517	2739
14729	Mainline	56	0.18		23598	469	671	1271	5373
14740	Mainline	49	0.65		45712	763	1048	1967	2645
14748	Mainline*	26	0.11		28967	620	770	1411	7531
14761	Mainline	26	0.20		28967	620	770	1411	7531
14768	Mainline	33	0.17		25345	557	736	1393	7507
14775	Mainline	47	0.17		48400	812	1099	2073	2712
14776	Mainline	34	0.46		34090	691	1012	2057	7507
14784	Mainline*	46	0.19		43141	776	1075	1925	8153
14790	Mainline*	45	0.36		56036	872	1261	2357	3115
14791	Mainline	36	0.17		32715	676	993	2025	7507
14794	Mainline	50	0.20		39297	581	805	1498	2712
14799	Mainline	43	0.06		43347	736	991	1882	2712
14828	Mainline	48	0.17		53788	848	1243	2303	3113
14858	Mainline	46	0.37		43141	776	1075	1925	8153
14864	Mainline*	51	0.10		35726	645	918	1624	8153
14886	Mainline*	51	0.06		53788	601	854	1507	22
14898	Mainline	50	0.73		55176	612	891	1582	1044
14944	Mainline	61	0.39		37267	710	936	1492	2739
14964	Mainline	62	0.41		42659	793	1024	1608	2789
14991	Mainline	47	0.25		50165	481	692	1193	1216
15081	Mainline	49	0.74		47601	448	655	1134	1216
15102	Mainline	63	0.25		28433	577	758	1164	2789
15182	Mainline	64	0.90		26421	517	737	1160	2789
15209	Mainline	49	0.26		48686	457	666	1151	1228
15290	Mainline	49	0.25		57431	595	855	1559	2439
15352	Mainline	49	0.19		57989	601	863	1573	2445
15353	Mainline	64	0.47		36560	624	929	1944	4018
15393	Mainline	47	0.40		59156	617	877	1585	2541
15412	Mainline	64	0.31		40186	686	986	1996	4255
15433	Mainline	51	0.21		53157	529	766	1395	2541
15489	Mainline*	64	0.35		36756	631	912	1868	4255

Table C.3-6B. Alternative 6C Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	56	0.07		42859	376	544	1019	2908
15536	Mainline	64	0.38		27342	527	717	1519	3987
15549	Mainline*	56	0.20		42859	376	544	1019	2908
15552	Mainline*	63	0.33		20001	407	582	1284	3987
15581	Mainline	60	0.44		31247	194	279	555	2710
15586	Mainline*	64	0.23		22213	470	611	1265	4217
15588	Mainline*	64	0.08		22213	470	611	1265	4217
15591	Mainline	54	0.25		40509	367	514	1060	4630
15615	Mainline	64	0.27		22213	470	611	1265	4217
15655	Mainline	53	0.40		45363	428	583	1184	5107
15700	Mainline	61	0.45		32368	602	746	1505	4548
15749	Mainline	53	0.69		41996	391	530	1083	5410
15782	Mainline	54	0.53		35601	279	371	737	5410
15785	Mainline	61	0.45		28794	543	671	1429	4548
15915	Mainline*	59	0.20		30665	583	708	1433	4702
15954	Mainline	52	0.44		40328	592	821	1560	5866
16041	Mainline	58	0.96		17784	183	193	346	4880
16042	Mainline	58	0.12		29897	362	397	765	6416
16050	Mainline*	60	0.87		36656	471	517	983	7034
16053	Mainline	57	0.43		27174	329	356	648	5814
16086	Mainline	60	0.40		31369	468	510	962	7155
16121	Mainline	59	0.48		28099	432	498	963	7034
16123	Mainline	60	0.45		22210	302	339	645	5819
16134	Mainline	61	0.04		17206	193	217	400	3006
16135	Mainline	63	0.01		10984	126	141	262	2418
16152	Shoreline On	60	0.79		9281	110	123	221	77
16168	Mainline	62	0.33		8258	122	145	348	5046
16185	Mainline*	61	0.16		17206	193	217	400	3006
16187	Mainline	64	0.13		8258	122	135	299	2538
16199	Shoreline Off	54	0.08		16138	181	186	330	781
16237	Mainline	61	0.37		27975	354	375	693	5115
16247	Mainline	54	0.49		32644	536	728	1261	6319
16254	Mainline	57	0.21		25268	387	537	920	4880
16266	Mainline*	55	0.29		23831	284	304	606	5726
88574	Mainline*	51	0.13		53788	601	854	1507	22
88575	Mainline	61	0.89		40209	751	1010	1673	2739
88576	Mainline	45	0.55		61977	716	1016	1783	1044

Table C.3-6B. Alternative 6C Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	62	0.34		10466	134	153	362	5810
127416	Mainline	51	0.33		39726	362	495	1034	5107
127435	Mainline	65	0.15		1811	33	36	75	2103
127443	Mainline	65	0.36		4680	57	59	123	2638
1643216	Mainline	58	0.28		564	16	18	41	1952
1656691	Mainline	55	0.28		23831	284	304	606	5726
1657648	Mainline	55	0.48		39628	339	512	979	2541
1657653	Mainline*	59	0.09		30665	583	708	1433	4702
1657654	Mainline	53	0.13		40328	338	438	815	5745
1657662	Mainline	58	0.61		26652	498	583	1124	4702
1657665	Mainline	59	0.07		30665	583	708	1433	4702
1657668	Mainline	61	0.59		19888	294	329	627	5814
1658094	Mainline*	63	0.14		10984	126	141	262	2418
1658097	Mainline*	63	0.13		10984	126	141	262	2418
2669480	Freight Corridor Mainline*	60	1.53		0	104	164	315	10437
2669481	Freight Corridor Mainline*	63	1.93		0	84	123	325	9162
2669482	Freight Corridor Mainline	64	1.70		0	43	64	176	6393
2669483	Freight Corridor Mainline*	64	0.39		0	43	64	176	6393
2669484	Freight Corridor Mainline*	64	2.17		0	43	64	176	6393
2669485	Freight Corridor Mainline	63	2.21		0	84	123	325	9162
2669486	Freight Corridor Mainline	64	0.63		0	18	27	79	6736
2669487	Freight Corridor Mainline	62	0.64		0	16	24	70	4712
2669488	Freight Corridor Mainline*	64	4.56		0	255	423	911	5689
2669489	Freight Corridor Mainline*	62	1.13		0	91	144	274	9119
2669494	Freight Corridor Mainline	60	0.27		0	104	164	315	10437
2669495	Pico Off	65	0.54		0	2	3	8	1584
2669498	Pico On	18	0.45		0	2	3	8	2024
2669502	Harbour Scenic On	6	0.25		0	7	11	32	2791
2669505	Frt Off	15	0.19		0	10	13	38	1921
2669511	Pico On Freight Corridor*	18	0.22		0	2	3	8	2024
2669512	Pico Off Freight Corridor*	21	0.10		0	2	3	8	1584
2669523	Anaheim On	12	0.80		0	68	98	242	2425
2669524	Anaheim Off	8	0.30		0	33	49	131	2300
2669548	Mainline	51	0.45		49437	542	779	1376	22
2669556	Mainline	55	0.29	0.30	35726	683	919	1532	2628
2669564	Mainline	45	0.28		56036	872	1261	2357	3115
2669594	Mixed Flow Pico On*	14	0.13		955	2	3	8	2751

Table C.3-6B. Alternative 6C Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	63	0.10		11837	164	186	376	4334
2669599	Shoreline Off*	54	0.27		16138	181	186	330	781
2669600	Shoreline Off	54	0.59		16138	181	186	330	781
2669601	Mainline	62	0.19		6259	93	108	243	2162
2669604	Freight Corridor Mainline	65	0.44		0	35	52	138	3884
2669606	SB Frt Corr On	7	0.47		0	8	12	38	2508
2669608	Mainline	60	0.08		36656	471	517	983	7034
2669612	Mainline	59	0.29		27300	343	382	771	5866
2669619	SB Frt Corr to GP On	20	0.73		0	231	385	767	121
2669628	Mainline	64	0.09		36756	631	912	1868	4255
2669632	Mainline	63	0.17		20001	407	582	1284	3987
2669643	Mainline*	61	0.21		37267	710	936	1492	2739
2669645	Mainline	50	0.32		64535	736	1037	1801	1219
2669651	Mainline	49	0.32		57357	662	957	1697	954
2669653	Mainline	58	0.14		37397	729	969	1631	2739
2669659	Mainline*	47	0.20		56167	674	976	1740	591
2669661	Mainline*	56	0.18		36818	741	996	1670	2640
2669676	Mainline	51	0.10		53788	601	854	1507	22
2669687	Mainline*	50	0.20		39297	581	805	1498	2712
2669689	Mainline	64	0.21		1703	16	18	41	2341
2669696	NB Frt Corr Off	12	0.64		0	9	15	26	1276
2669697	Mainline	57	0.21		32644	602	689	1184	5043
2669698	Freight Corridor Mainline	65	0.35	0.34	0	11	24	51	1747
2669704	Mainline	49	0.38		27891	503	654	1175	7531
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	11	24	51	1747
2669714	Mainline	53	0.53		55352	636	908	1593	307
2669749	Mainline	51	0.11		35726	645	918	1624	8153
2669751	Mainline*	45	0.18		61977	716	1016	1783	1044
2669759	Freight Corridor Mainline	64	1.12		0	255	423	911	5689
2669760	Patata On	65	0.32		0	19	22	30	851
2669763	Patata Off	65	0.26		0	52	66	94	1381
2669764	Freight Corridor Mainline	62	4.45		0	91	144	274	9119
2669766	SR 91 EB Off	40	0.97		0	13	17	43	1318
2669768	Freight Corridor Mainline	63	1.48		0	271	439	956	6513
2669769	WB SR 91 On	40	1.31		0	14	18	45	824
2669788	Mainline	49	0.30		49687	827	1115	2092	2712
88573	Mainline	56	0.69	0.48	40349	794	1047	1713	2640

Table C.3-6B. Alternative 6C Post Processed Mid Day Traffic Flows (9:00 AM - 3:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	48	0.70	0.53	59168	701	994	1742	771
2669553	Mainline	60	0.40	0.33	35374	722	974	1595	2628
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	13	0.93	0.52	0	11	22	53	1747
2669717	Freight Corridor Mainline	65	3.02	2.10	0	230	399	890	4839
2669718	SB Frt Corr Off	63	0.60	0.50	0	220	374	838	3092
2669748	End of Frt Corridor Mainline	65	1.71	1.20	0	34	69	140	2213
2669750	Frt Corr NB On	61	0.66	0.62	0	9	15	29	5525
2669761	Freight Corridor Mainline	64	2.66	2.05	0	50	83	164	7738
2669699	Mainline	59	0.33	0.39	31399	620	839	1387	2628

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-6C. Alternative 6C Post Processed PM Traffic Flows (3:00 PM - 7:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	26	0.39		42929	173	347	602	704
14604	Mainline	33	0.38		31982	384	741	1187	264
14610	Mainline	29	0.63		47114	191	379	653	726
14700	Mainline	36	0.78		34127	391	749	1192	264
14705	Mainline	27	0.36		41419	159	319	554	726
14712	Mainline	40	0.36		28583	350	680	1102	264
14729	Mainline	37	0.18		23820	239	552	1143	2995
14740	Mainline	27	0.65		37548	406	909	2036	1491
14748	Mainline*	9	0.11		25065	282	573	1240	4590
14761	Mainline	9	0.20		25065	282	573	1240	4590
14768	Mainline	12	0.17		21666	264	552	1220	4584
14775	Mainline	24	0.17		39921	430	947	2109	1534
14776	Mainline	15	0.46		30820	324	732	1662	4584
14784	Mainline*	25	0.19		33401	284	599	1218	4672
14790	Mainline*	25	0.36		39874	374	844	1823	1649
14791	Mainline	16	0.17		30052	321	722	1643	4584
14794	Mainline	30	0.20		29197	271	599	1326	1498
14799	Mainline	23	0.06		32106	367	793	1769	1534
14828	Mainline	28	0.17		37444	346	789	1706	1648
14858	Mainline	25	0.37		33401	284	599	1218	4672
14864	Mainline*	32	0.10		28751	248	530	1068	4672
14886	Mainline*	32	0.06		37444	133	267	466	56
14898	Mainline	30	0.73		41910	157	318	556	788
14944	Mainline	41	0.39		32733	370	709	1136	262
14964	Mainline	43	0.41		36877	392	739	1169	263
14991	Mainline	26	0.25		35728	97	204	342	835
15081	Mainline	29	0.74		32211	82	175	293	835
15102	Mainline	44	0.25		25698	308	619	949	263
15182	Mainline	49	0.90		23848	289	599	924	263
15209	Mainline	28	0.26		32824	85	178	296	841
15290	Mainline	28	0.25		40132	106	218	399	841
15352	Mainline	28	0.19		40711	108	223	408	848
15353	Mainline	44	0.47		34545	323	658	1213	441
15393	Mainline	25	0.40		42040	113	231	417	863
15412	Mainline	45	0.31		38644	343	691	1264	576
15433	Mainline	31	0.21		38371	94	194	352	863
15489	Mainline*	48	0.35		36259	324	663	1225	576

Table C.3-6C. Alternative 6C Post Processed PM Traffic Flows (3:00 PM - 7:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	43	0.07		31326	46	94	171	960
15536	Mainline	49	0.38		28168	291	570	1068	547
15549	Mainline*	43	0.20		31326	46	94	171	960
15552	Mainline*	47	0.33		21947	224	457	847	546
15581	Mainline	53	0.44		24344	29	56	99	960
15586	Mainline*	57	0.23		24623	249	473	839	605
15588	Mainline*	57	0.08		24623	249	473	839	605
15591	Mainline	45	0.25		31842	59	114	215	1022
15615	Mainline	57	0.27		24623	249	473	839	605
15655	Mainline	39	0.40		36162	81	150	271	1124
15700	Mainline	46	0.45		34098	286	521	916	738
15749	Mainline	40	0.69		34754	74	133	239	1183
15782	Mainline	40	0.53		30696	44	73	117	1182
15785	Mainline	46	0.45		31293	273	484	881	738
15915	Mainline*	43	0.20		32768	286	495	874	776
15954	Mainline	34	0.44		33841	276	644	1359	1279
16041	Mainline	48	0.96		19132	58	86	125	1192
16042	Mainline	51	0.12		26899	89	133	208	1352
16050	Mainline*	54	0.87		29769	105	156	243	1397
16053	Mainline	47	0.43		24295	90	138	210	1414
16086	Mainline	55	0.40		25747	97	136	208	1469
16121	Mainline	54	0.48		22462	90	133	207	1397
16123	Mainline	51	0.45		21547	80	122	186	1415
16134	Mainline	52	0.04		17898	59	89	129	1025
16135	Mainline	57	0.01		13482	46	70	103	934
16152	Shoreline On	46	0.79		8490	31	47	63	0
16168	Mainline	63	0.33		2479	27	43	99	2332
16185	Mainline*	52	0.16		17898	59	89	129	1025
16187	Mainline	65	0.13		2479	18	24	39	900
16199	Shoreline Off	33	0.08		14797	28	39	60	11
16237	Mainline	57	0.37		20939	48	67	103	1308
16247	Mainline	33	0.49		34005	275	642	1260	1475
16254	Mainline	42	0.21		24474	219	521	1015	1192
16266	Mainline*	43	0.29		20696	59	87	138	1221
88574	Mainline*	32	0.13		37444	133	267	466	56
88575	Mainline	43	0.89		35150	385	739	1190	264
88576	Mainline	23	0.55		46489	180	355	612	788

Table C.3-6C. Alternative 6C Post Processed PM Traffic Flows (3:00 PM - 7:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	63	0.34		3828	32	50	113	2603
127416	Mainline	37	0.33		32782	64	118	219	1124
127435	Mainline	64	0.15		4056	15	20	39	865
127443	Mainline	65	0.36		4917	20	24	47	969
1643216	Mainline	52	0.28		3205	13	20	40	648
1656691	Mainline	43	0.28		20696	59	87	138	1221
1657648	Mainline	41	0.48		29154	37	82	153	863
1657653	Mainline*	43	0.09		32768	286	495	874	776
1657654	Mainline	40	0.13		33841	58	96	145	1278
1657662	Mainline	41	0.61		28632	283	459	720	776
1657665	Mainline	43	0.07		32768	286	495	874	776
1657668	Mainline	55	0.59		19116	80	122	186	1414
1658094	Mainline*	57	0.14		13482	46	70	103	934
1658097	Mainline*	57	0.13		13482	46	70	103	934
2669480	Freight Corridor Mainline*	56	1.53		0	143	349	767	7868
2669481	Freight Corridor Mainline*	62	1.93		0	94	180	435	7371
2669482	Freight Corridor Mainline	64	1.70		0	86	168	378	3443
2669483	Freight Corridor Mainline*	64	0.39		0	86	168	378	3443
2669484	Freight Corridor Mainline*	64	2.17		0	86	168	378	3443
2669485	Freight Corridor Mainline	62	2.21		0	94	180	435	7371
2669486	Freight Corridor Mainline	64	0.63		0	42	81	214	6074
2669487	Freight Corridor Mainline	62	0.64		0	30	59	158	4038
2669488	Freight Corridor Mainline*	63	4.56		0	264	658	1528	2787
2669489	Freight Corridor Mainline*	60	1.13		0	127	317	698	6775
2669494	Freight Corridor Mainline	56	0.27		0	143	349	767	7868
2669495	Pico Off	65	0.54		0	20	37	95	839
2669498	Pico On	13	0.45		0	12	22	55	2035
2669502	Harbour Scenic On	7	0.25		0	20	40	101	918
2669505	Frt Off	13	0.19		0	10	19	57	3120
2669511	Pico On Freight Corridor*	13	0.22		0	12	22	55	2035
2669512	Pico Off Freight Corridor*	21	0.10		0	20	37	95	839
2669523	Anaheim On	9	0.80		0	52	100	220	1298
2669524	Anaheim Off	7	0.30		0	57	110	225	1173
2669548	Mainline	31	0.45		34048	117	240	422	56
2669556	Mainline	36	0.29	0.30	28751	312	594	937	241
2669564	Mainline	25	0.28		39874	374	844	1823	1649
2669594	Mixed Flow Pico On*	18	0.13		320	20	37	95	1154

Table C.3-6C. Alternative 6C Post Processed PM Traffic Flows (3:00 PM - 7:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	63	0.10		6142	21	28	43	1297
2669599	Shoreline Off*	33	0.27		14797	28	39	60	11
2669600	Shoreline Off	33	0.59		14797	28	39	60	11
2669601	Mainline	63	0.19		1591	7	9	15	809
2669604	Freight Corridor Mainline	65	0.44		0	77	147	320	2011
2669606	SB Frt Corr On	9	0.47		0	9	20	59	1432
2669608	Mainline	54	0.08		29769	105	156	243	1397
2669612	Mainline	47	0.29		25058	104	187	364	1279
2669619	SB Frt Corr to GP On	6	0.73		0	202	538	1240	1
2669628	Mainline	48	0.09		36259	324	663	1225	576
2669632	Mainline	47	0.17		21947	224	457	847	546
2669643	Mainline*	41	0.21		32733	370	709	1136	262
2669645	Mainline	32	0.32		47535	183	362	621	835
2669651	Mainline	27	0.32		42901	166	333	578	764
2669653	Mainline	36	0.14		30495	368	704	1132	264
2669659	Mainline*	26	0.20		42929	173	347	602	704
2669661	Mainline*	33	0.18		31982	384	741	1187	264
2669676	Mainline	32	0.10		37444	133	267	466	56
2669687	Mainline*	30	0.20		29197	271	599	1326	1498
2669689	Mainline	62	0.21		4992	15	21	43	934
2669696	NB Frt Corr Off	7	0.64		0	59	157	334	496
2669697	Mainline	39	0.21		34005	327	534	766	978
2669698	Freight Corridor Mainline	65	0.35	0.34	0	40	108	212	890
2669704	Mainline	26	0.38		24222	218	449	946	4475
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	40	108	212	890
2669714	Mainline	34	0.53		40471	173	353	621	686
2669749	Mainline	32	0.11		28751	248	530	1068	4672
2669751	Mainline*	23	0.18		46489	180	355	612	788
2669759	Freight Corridor Mainline	63	1.12		0	264	658	1528	2787
2669760	Patata On	65	0.32		0	22	39	53	304
2669763	Patata Off	65	0.26		0	43	84	127	855
2669764	Freight Corridor Mainline	60	4.45		0	127	317	698	6775
2669766	SR 91 EB Off	40	0.97		0	19	32	66	1093
2669768	Freight Corridor Mainline	61	1.48		0	291	705	1615	3444
2669769	WB SR 91 On	40	1.31		0	28	47	87	657
2669788	Mainline	29	0.30		40309	432	948	2106	1534
88573	Mainline	35	0.69	0.48	34067	403	767	1202	264

Table C.3-6C. Alternative 6C Post Processed PM Traffic Flows (3:00 PM - 7:00 PM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light- Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	28	0.70	0.53	44419	188	381	669	704
2669553	Mainline	42	0.40	0.33	29819	376	726	1127	241
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	11	0.93	0.52	0	41	107	213	890
2669717	Freight Corridor Mainline	64	3.02	2.10	0	242	619	1474	2483
2669718	SB Frt Corr Off	57	0.60	0.50	0	202	512	1261	1592
2669748	End of Frt Corridor Mainline	64	1.71	1.20	0	89	254	541	1488
2669750	Frt Corr NB On	59	0.66	0.62	0	0	1	2	4431
2669761	Freight Corridor Mainline	62	2.66	2.05	0	92	240	555	5919
2669699	Mainline	42	0.33	0.39	25974	294	564	878	241

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.3-6D. Alternative 6C Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light-Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
14541	Mainline	65	0.39		15641	147	311	1207	1914
14604	Mainline	65	0.38		15023	145	305	1150	1526
14610	Mainline	65	0.63		16516	153	317	1218	1927
14700	Mainline	65	0.78		16210	154	316	1180	1584
14705	Mainline	65	0.36		13930	127	272	1023	1927
14712	Mainline	65	0.36		14001	129	275	1005	1584
14729	Mainline	65	0.18		13997	131	245	884	134
14740	Mainline	65	0.65		16465	157	294	1178	76
14748	Mainline	65	0.11		12991	128	212	849	158
14761	Mainline	65	0.20		12991	128	212	849	158
14768	Mainline	65	0.17		11058	107	196	813	146
14775	Mainline	65	0.17		16367	160	295	1180	76
14776	Mainline	65	0.46		16950	160	301	1192	146
14784	Mainline	65	0.19		19849	182	368	1468	459
14790	Mainline	65	0.36		19091	178	366	1482	412
14791	Mainline	65	0.17		15817	153	293	1172	146
14794	Mainline	65	0.20		10862	93	168	620	76
14799	Mainline	65	0.06		11297	108	187	794	76
14828	Mainline	65	0.17		16127	144	303	1160	412
14858	Mainline	65	0.37		19849	182	368	1468	459
14864	Mainline	65	0.10		16461	145	300	1115	459
14886	Mainline	65	0.06		16127	144	303	1160	412
14898	Mainline	65	0.73		13804	128	277	1050	2390
14944	Mainline	65	0.39		13985	131	280	1029	2042
14964	Mainline	65	0.41		15522	145	300	1088	2084
14991	Mainline	65	0.25		13075	118	247	916	2558
15081	Mainline	65	0.74		12505	113	240	888	2558
15102	Mainline	65	0.25		12971	116	245	895	2084
15182	Mainline	65	0.90		12804	114	243	881	2084
15209	Mainline	65	0.26		12890	116	244	897	2558
15290	Mainline	65	0.25		20016	188	399	1727	4780
15352	Mainline	65	0.19		20502	193	406	1749	4789
15353	Mainline	64	0.47		21118	195	418	1824	5032
15393	Mainline	65	0.40		20502	193	406	1749	4789
15412	Mainline	65	0.31		22363	206	433	1865	5252
15433	Mainline	65	0.21		18054	168	363	1570	4789
15489	Mainline	65	0.35		20129	183	393	1693	5252

Table C.3-6D. Alternative 6C Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light-Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
15497	Mainline	65	0.07		16085	151	328	1458	5142
15536	Mainline	65	0.38		16842	154	319	1359	5249
15549	Mainline	65	0.20		16085	151	328	1458	5142
15552	Mainline	64	0.33		13430	122	263	1193	5249
15581	Mainline	65	0.44		11950	114	241	1080	5138
15586	Mainline	65	0.23		13847	125	266	1200	5260
15588	Mainline	65	0.08		13847	125	266	1200	5260
15591	Mainline	64	0.25		17540	160	335	1718	8024
15615	Mainline	65	0.27		13847	125	266	1200	5260
15655	Mainline	64	0.40		18025	165	340	1732	8115
15700	Mainline	64	0.45		19267	170	348	1727	7975
15749	Mainline	64	0.69		16976	155	315	1637	8249
15782	Mainline	64	0.53		14955	130	260	1309	8249
15785	Mainline	64	0.45		16575	147	305	1585	7975
15915	Mainline	64	0.20		18382	164	330	1657	8248
15954	Mainline	64	0.44		17691	157	304	1428	8609
16041	Mainline	64	0.96		10465	87	153	818	8489
16042	Mainline	65	0.12		13740	115	208	1101	9037
16050	Mainline	65	0.87		14956	128	230	1176	9248
16053	Mainline	64	0.43		13472	113	205	1065	8946
16086	Mainline	65	0.40		12106	110	195	1022	7636
16121	Mainline	65	0.48		11178	98	186	996	7578
16123	Mainline	64	0.45		11913	103	182	948	7320
16134	Mainline	65	0.04		9839	82	144	752	5831
16135	Mainline	65	0.01		8323	64	109	561	5178
16152	Shoreline On	65	0.79		6077	49	80	374	0
16168	Mainline	65	0.33		1221	13	24	156	3914
16185	Mainline	65	0.16		9839	82	144	752	5831
16187	Mainline	65	0.13		1221	13	24	156	3914
16199	Shoreline Off	65	0.08		6413	52	82	385	539
16237	Mainline	65	0.37		9528	85	147	766	5578
16247	Mainline	64	0.49		18521	164	318	1464	8711
16254	Mainline	64	0.21		15357	131	256	1147	8489
16266	Mainline	64	0.29		10569	88	153	846	8596
88574	Mainline	65	0.13		16127	144	303	1160	412
88575	Mainline	65	0.89		15961	148	305	1111	2042
88576	Mainline	65	0.55		16019	147	305	1139	2390

Table C.3-6D. Alternative 6C Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light-Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
97956	Mainline	65	0.34		1358	16	26	162	4035
127416	Mainline	64	0.33		16165	147	305	1609	8115
127435	Mainline	64	0.15		2275	16	29	188	4999
127443	Mainline	65	0.36		2437	18	31	191	5088
1643216	Mainline	56	0.28		2204	15	29	187	4932
1656691	Mainline	64	0.28		10569	88	153	846	8596
1657648	Mainline	65	0.48		14844	140	316	1430	4789
1657653	Mainline	64	0.09		18382	164	330	1657	8248
1657654	Mainline	64	0.13		17691	157	304	1428	8609
1657662	Mainline	64	0.61		16394	142	281	1359	8248
1657665	Mainline	64	0.07		18382	164	330	1657	8248
1657668	Mainline	65	0.59		10655	91	171	921	7274
1658094	Mainline	65	0.14		8323	64	109	561	5178
1658097	Mainline	65	0.13		8323	64	109	561	5178
2669480	Freight Corridor Mainline	65	1.53		0	0	0	8	393
2669481	Freight Corridor Mainline	65	1.93		0	0	0	1	104
2669482	Freight Corridor Mainline	65	1.70		0	0	0	0	44
2669483	Freight Corridor Mainline	65	0.39		0	0	0	0	44
2669484	Freight Corridor Mainline	65	2.17		0	0	0	0	44
2669485	Freight Corridor Mainline	65	2.21		0	0	0	1	104
2669486	Freight Corridor Mainline	65	0.63		0	0	0	0	83
2669487	Freight Corridor Mainline	65	0.64		0	0	0	0	62
2669488	Freight Corridor Mainline	65	4.56		0	0	0	0	36
2669489	Freight Corridor Mainline	65	1.13		0	0	0	8	393
2669494	Freight Corridor Mainline	65	0.27		0	0	0	8	393
2669495	Pico Off	65	0.54		0	0	0	0	36
2669498	Pico On	20	0.45		0	0	0	0	21
2669502	Harbour Scenic On	20	0.25		0	0	0	0	62
2669505	Frt Off	20	0.19		0	0	0	0	0
2669511	Pico On Freight Corridor	20	0.22		0	0	0	0	21
2669512	Pico Off Freight Corridor	30	0.10		0	0	0	0	36
2669523	Anaheim On	20	0.80		0	0	0	0	21
2669524	Anaheim Off	20	0.30		0	0	0	0	8
2669548	Mainline	65	0.45		14312	126	266	997	412
2669556	Mainline	65	0.29	0.30	16461	145	300	1115	459
2669564	Mainline	65	0.28		19091	178	366	1482	412
2669594	Mixed Flow Pico On	30	0.13		144	0	0	0	412

Table C.3-6D. Alternative 6C Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light-Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669598	Mainline	65	0.10		3115	34	65	381	5039
2669599	Shoreline Off	65	0.27		6413	52	82	385	539
2669600	Shoreline Off	65	0.59		6413	52	82	385	539
2669601	Mainline	65	0.19		1152	12	23	154	3691
2669604	Freight Corridor Mainline	65	0.44		0	0	0	0	44
2669606	SB Frt Corr On	20	0.47		0	0	0	0	0
2669608	Mainline	65	0.08		14956	128	230	1176	9248
2669612	Mainline	64	0.29		13124	115	206	1125	8609
2669619	SB Frt Corr to GP On	20	0.73		0	0	0	0	0
2669628	Mainline	65	0.09		20129	183	393	1693	5252
2669632	Mainline	64	0.17		13430	122	263	1193	5249
2669643	Mainline	65	0.21		13985	131	280	1029	2042
2669645	Mainline	65	0.32		16245	153	310	1142	2558
2669651	Mainline	65	0.32		15618	143	300	1124	2339
2669653	Mainline	65	0.14		14903	140	293	1090	1584
2669659	Mainline	65	0.20		15641	147	311	1207	1914
2669661	Mainline	65	0.18		15023	145	305	1150	1526
2669676	Mainline	65	0.10		16127	144	303	1160	412
2669687	Mainline	65	0.20		10862	93	168	620	76
2669689	Mainline	64	0.21		2246	15	29	187	5178
2669696	NB Frt Corr Off	20	0.64		0	0	0	8	289
2669697	Mainline	64	0.21		18521	164	318	1456	8422
2669698	Freight Corridor Mainline	65	0.35	0.34	0	0	0	0	36
2669704	Mainline	65	0.38		12045	103	183	664	158
2669712	SB MF Washinton Ramp to Frt Corr On	65	0.09		0	0	0	0	36
2669714	Mainline	65	0.53		14703	133	280	1050	802
2669749	Mainline	65	0.11		16461	145	300	1115	459
2669751	Mainline	65	0.18		16019	147	305	1139	2390
2669759	Freight Corridor Mainline	65	1.12		0	0	0	0	36
2669760	Patata On	65	0.32		0	0	0	0	0
2669763	Patata Off	65	0.26		0	0	0	0	0
2669764	Freight Corridor Mainline	65	4.45		0	0	0	8	393
2669766	SR 91 EB Off	40	0.97		0	0	0	0	0
2669768	Freight Corridor Mainline	65	1.48		0	0	0	0	44
2669769	WB SR 91 On	40	1.31		0	0	0	0	8
2669788	Mainline	65	0.30		17403	167	302	1196	76
88573	Mainline	65	0.69	0.48	16792	160	326	1217	1526

Table C.3-6D. Alternative 6C Post Processed Night Time Traffic Flows (7:00 PM - 6:00 AM) ¹

Link ID ²	Segment Description	Speed (mph)	Length (mi) ³		Auto	Light-Heavy Duty Truck	Medium- Heavy Duty Truck	Heavy-Heavy Duty Truck	Port Truck
			Option 1	Option 2					
2669551	Mainline	65	0.70	0.53	17588	163	333	1275	1914
2669553	Mainline	65	0.40	0.33	14450	131	271	976	462
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	20	0.93	0.52	0	0	0	0	36
2669717	Freight Corridor Mainline	65	3.02	2.10	0	0	0	0	36
2669718	SB Frt Corr Off	65	0.60	0.50	0	0	0	0	0
2669748	End of Frt Corridor Mainline	65	1.71	1.20	0	0	0	8	393
2669750	Frt Corr NB On	65	0.66	0.62	0	0	0	0	0
2669761	Freight Corridor Mainline	65	2.66	2.05	0	0	0	8	393
2669699	Mainline	65	0.33	0.39	14197	124	260	944	459

Notes:

¹ Post processed traffic data is compiled by URS

² Link ID is a descriptor used in the Southern California Association of Governments (SCAG) traffic model

³ Link length is calculated based on the URS freeway design. The beginning and end of the links were transcribed based on the SCAG network.

Table C.4-1. 2008 Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)									
		CO	NO _x	SO ₂	PM ₁₀ (Exhaust)	PM ₁₀ (Entrained)	PM ₁₀ (Total)	PM _{2.5} (Exhaust)	PM _{2.5} (Entrained)	PM _{2.5} (Total)	ROG
14541	Florence OFF and Florence ON	451	307	0.66	15	18	32	12	4.3	16	36
14604	Florence ON and Florence OFF	522	458	0.81	20	24	44	17	5.8	22	48
14610	Florence ON and Firestone OFF	493	309	0.71	15	18	33	12	4.4	16	41
14620	Third Off and SR60 ON	148	52	0.19	2.7	4.2	6.9	1.9	1.0	2.9	9.7
14698	3rd / Ford ON and 3rd / Ford Off	11	8.7	0.02	0.38	0.48	0.86	0.30	0.12	0.42	0.91
14700	Florence OFF and Firestone ON	615	463	0.92	22	24	47	18	5.9	24	60
14705	Firestone OFF and Firestone ON	487	342	0.71	16	19	36	13	4.8	18	40
14712	Firestone ON and Firestone OFF	513	474	0.81	21	25	45	17	6.0	23	47
14729	3rd / Ford Off and SR60 Off	99	71	0.15	3.2	4.0	7.2	2.5	0.98	3.5	8.4
14740	SR60 ON and EasternWhittierOlympic OFF	145	54	0.19	2.8	4.1	6.9	2.0	1.0	3.1	10
14748	Olympic Off and NB i5 Off	137	82	0.20	4.3	4.6	8.9	3.5	1.1	4.6	13
14761	NB i5 Off and Washington ON	408	216	0.59	12	12	24	9.6	3.0	13	40
14765	SB i5 ON and Washington Off	262	103	0.35	5.4	7.5	13	3.9	1.8	5.8	18
14768	NB i5 ON and Olympic Off	140	95	0.21	4.6	5.3	9.9	3.7	1.3	5.0	12
14772	Washington Off and Washington ON	203	74	0.27	3.9	5.7	9.6	2.8	1.4	4.2	13
14775	EasternWhittierOlympic OFF and SB i5 Off	201	73	0.27	3.9	5.5	9.4	2.9	1.3	4.2	14
14776	SR60 Off and Olympic ON	248	147	0.35	7.2	8.7	16	5.6	2.1	7.8	21
14784	Washington ON and Washington OFF	200	117	0.29	5.6	7.2	13	4.3	1.8	6.1	16
14790	Washington ON and Bandini/Atlantic OFF	122	49	0.16	2.6	3.6	6.1	1.9	0.88	2.7	8.6
14791	Olympic ON and NB i5 ON	138	80	0.19	4.1	4.6	8.7	3.3	1.1	4.4	13
14794	Eastern ON and SB i5 ON	213	73	0.28	4.1	5.6	9.6	3.0	1.4	4.3	16
14799	SB i5 Off and Eastern ON	48	18	0.06	0.95	1.3	2.3	0.68	0.33	1.0	3.3
14817	Washington OFF and Atlantic/Bandini ON	187	108	0.27	5.3	6.5	12	4.1	1.6	5.7	15
14828	Bandini/Atlantic OFF and WB Atlantic ON	251	99	0.33	5.2	7.2	12	3.8	1.8	5.6	18
14858	Atlantic/Bandini ON and WB Atlantic OFF	139	91	0.20	4.1	5.4	9.5	3.2	1.3	4.5	11
14864	WB Atlantic OFF and EB Atlantic OFF	284	205	0.42	9.7	11	21	7.9	2.7	11	26
14886	WB Atlantic ON and EB Atlantic ON	129	82	0.19	4.0	4.7	8.7	3.1	1.2	4.3	11
14898	Wright Rd OFF and Imperial OFF	547	373	0.79	18	22	39	14	5.3	19	44
14944	Imperial ON and Imperial OFF	550	527	0.88	23	27	50	18	6.7	25	50
14964	Imperial OFF and EBnWb 105 ON	229	201	0.36	8.9	11	20	7.2	2.6	9.8	20
14970	Imperial ON and MLK OFF	64	41	0.09	2.0	2.4	4.4	1.6	0.60	2.2	5.0
14973	MLK OFF and 105 OFF	134	91	0.20	4.3	5.3	9.6	3.4	1.3	4.7	10
14991	105 OFF and Rosecrans OFF	141	113	0.22	5.5	6.0	12	4.5	1.5	5.9	12
15081	Rosecrans OFF and MLK ON	474	399	0.73	19	21	40	16	5.1	21	41
15102	EBnWb 105 ON and Rosecrans ON	161	184	0.27	8.2	9.0	17	6.7	2.2	9.0	16
15182	Rosecrans ON and EBnWb 105/Garfield OFF	552	651	0.94	30	31	61	25	7.6	32	55

Table C.4-1. 2008 Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)									
		CO	NO _x	SO ₂	PM ₁₀ (Exhaust)	PM ₁₀ (Entrained)	PM ₁₀ (Total)	PM _{2.5} (Exhaust)	PM _{2.5} (Entrained)	PM _{2.5} (Total)	ROG
15209	MLK ON and 105 ON	133	107	0.20	5.2	5.7	11	4.2	1.4	5.6	11
15290	105 ON and WB Rosecrans ON	260	203	0.40	9.6	11	21	7.7	2.7	10	22
15352	WB Rosecrans ON and EB Rosecrans ON	228	175	0.35	8.3	10	18	6.7	2.4	9.0	19
15353	WB Rosecrans ON and EB Rosecrans ON	293	314	0.48	15	15	30	12	3.8	16	28
15393	EBnWb 105/Garfield OFF and Rosecrans OFF	231	177	0.35	8.4	10	18	6.7	2.4	9.1	19
15412	EB Rosecrans ON and WB Alondra OFF	377	384	0.61	18	19	37	15	4.7	19	35
15433	Rosecrans OFF and Alondra ON	158	123	0.24	5.8	6.7	13	4.7	1.7	6.3	14
15489	Rosecrans OFF and Alondra ON	407	434	0.67	20	21	41	16	5.2	22	39
15497	WB Alondra OFF and EB Alondra OFF	103	81	0.16	3.8	4.4	8.2	3.0	1.1	4.1	8.6
15536	Alondra ON and Alondra OFF	157	159	0.26	7.3	8.0	15	6.0	2.0	7.9	15
15549	Alondra ON and EB 91/Atlantic/Artesia OFF	221	208	0.35	9.6	11	20	7.9	2.6	10	20
15552	Alondra OFF and WB 91/Atlantic ON	193	210	0.32	9.3	10	20	7.7	2.5	10	19
15581	EB 91/Atlantic/Artesia OFF and WB 91 OFF	243	276	0.41	12	14	26	9.9	3.3	13	24
15586	WB 91/Atlantic ON and EB 91 ON	195	252	0.34	11	12	23	9.0	2.9	12	21
15588	WB 91 OFF and WB 91 ON	42	53	0.07	2.3	2.5	4.8	1.9	0.62	2.5	4.3
15591	EB 91 ON and WB 91 OFF	114	119	0.19	5.1	6.0	11	4.2	1.5	5.7	11
15615	WB 91 OFF and Artesia/EB 91 OFF	145	182	0.25	7.9	8.7	17	6.6	2.1	8.7	15
15655	WB 91 ON and EB 91 & Artesia ON	139	138	0.23	6.0	7.1	13	4.9	1.8	6.7	13
15696	WB 91 OFF and Artesia/EB 91 OFF	364	374	0.59	16	19	35	13	4.6	18	34
15700	EB 91 & Artesia ON and NB LB OFF	278	337	0.48	14	16	31	12	4.0	16	28
15749	SB LB OFF and LB ON	436	426	0.69	19	22	40	15	5.3	21	41
15782	Artesia/EB 91 OFF and LB Blvd ON	152	169	0.26	7.2	8.4	16	5.9	2.1	8.0	15
15785	LB ON and Del Amo OFF	380	486	0.67	21	23	44	17	5.7	23	39
15915	Del Amo OFF and Del Amo ON	413	499	0.71	21	24	45	18	5.9	24	42
15954	LB Blvd ON and LB Blvd OFF	635	611	1.00	27	31	58	22	7.6	30	61
16041	LB Blvd OFF and WB Del Amo ON	344	585	0.67	24	26	50	20	6.4	27	40
16042	Del Amo ON and 405 OFF	111	123	0.18	5.4	5.9	11	4.5	1.4	5.9	11
16050	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	634	627	0.99	29	30	59	24	7.5	31	66
16053	EB 405 ON and WB 405 ON	810	1029	1.41	43	49	92	36	12	48	84
16063	WB 405 ON and WB Willow OFF	142	176	0.24	7.7	8.1	16	6.5	2.0	8.5	16
16073	WB 405 ON and WB Willow OFF	140	146	0.22	6.5	7.0	14	5.4	1.7	7.2	15
16086	405/Wardlow/Pacific OFF and WB Willow ON	400	442	0.66	19	21	41	16	5.3	21	41
16121	405/Wardlow/Pacific OFF and WB Willow ON	115	117	0.18	5.3	5.7	11	4.4	1.4	5.8	12
16123	EB Willow ON and EB Willow OFF	401	492	0.68	22	23	44	18	5.6	24	45
16134	WB Willow OFF and WB Willow ON	47	63	0.08	2.7	3.0	5.6	2.2	0.73	3.0	4.8
16135	EB Willow ON and PCH OFF	3.2	4.2	0.01	0.178	0.197	0.375	0.149	0.048	0.197	0.335

Table C.4-1. 2008 Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)									
		CO	NO _x	SO ₂	PM ₁₀ (Exhaust)	PM ₁₀ (Entrained)	PM ₁₀ (Total)	PM _{2.5} (Exhaust)	PM _{2.5} (Entrained)	PM _{2.5} (Total)	ROG
16152	WB Willow ON and EB Willow OFF	82	41	0.11	2.1	2.7	4.8	1.5	0.67	2.2	5.8
16157	EB Willow OFF and WB PCH ON	76	100	0.13	4.2	4.7	8.9	3.5	1.2	4.7	8.0
16168	PCH OFF and WB Anaheim ON	54	59	0.09	2.4	3.0	5.4	2.0	0.7	2.7	5.0
16174	EB Anaheim ON and Shoreline Dr ON	49	52	0.08	2.2	2.7	4.8	1.8	0.7	2.4	4.5
16185	Shoreline Dr ON	81	104	0.14	4.5	4.8	9.3	3.8	1.2	5.0	9.1
16187	EB PCH ON and PCH OFF	78	86	0.13	3.6	4.3	7.9	3.0	1.0	4.0	7.6
16237	WB Anaheim OFF and WB Anaheim ON	216	264	0.37	11	13	24	9.0	3	12	21
16247	WB Anaheim ON and EB Anaheim OFF	545	641	0.92	27	31	58	23	7.6	30	55
16254	WB PCH OFF and EB PCH ON	58	77	0.10	3.2	3.6	6.9	2.7	0.89	3.6	6.1
16266	PCH ON and WB Anaheim OFF	138	202	0.26	8.5	9.4	18	7.1	2.3	9.4	15
88573	PCH OFF and PCH ON	1691	1213	2.49	60	63	124	50	16	65	167
88574	EB Del Amo OFF and EB 405 ON	1042	643	1.50	31	38	69	25	9.2	34	87
88575	EB 405 ON and Wardlow/WB 405 ON	720	601	1.10	27	32	59	22	7.7	30	67
88576	405 OFF and EB 405 ON	554	359	0.79	17	21	38	14	5.1	19	46
97956	EB Atlantic OFF and Florence ON	103	162	0.19	8.3	6.9	15	7.2	1.7	8.9	14
127416	EB Atlantic OFF and Florence ON	55	57	0.09	2.5	2.9	5.4	2.0	0.72	2.7	5.0
127435	EB Atlantic ON and Florence OFF	47	93	0.09	4.8	3.8	8.6	4.2	0.93	5.1	7.4
127443	EB Atlantic ON and Florence OFF	115	219	0.23	11	8.9	20	10	2	12	18
1643212	Firestone OFF and Imperial ON	53	95	0.10	4.6	4.0	8.7	4.0	0.99	5.0	7.3
1643213	Firestone ON and Wright Rd OFF	87	30	0.12	1.7	2.2	3.9	1.2	0.54	1.8	5.6
1643214	Pico OFF and Harbor Scenic Dr OFF	5.9	11	0.01	0.54	0.45	0.99	0.47	0.11	0.58	0.84
1643216	NB LB OFF and SB LB OFF	20	41	0.04	2.0	1.7	3.7	1.8	0.41	2.2	3.1
1656691	Anaheim OFF and Pico ON	215	316	0.40	13	15	28	11	3.6	15	23
1657648	Pico ON and Harbor Scenic Drive ON	210	168	0.32	7.9	9.2	17	6.3	2.3	8.6	18
1657653	EB Anaheim ON and Pico OFF	189	224	0.32	9.7	11	20	8.0	2.6	11	20
1657654	Shoreline Dr OFF	132	127	0.21	5.6	6.4	12	4.6	1.6	6.2	13
1657662	Shoreline Dr OFF and EB Anaheim ON	114	136	0.19	5.9	6.5	12	4.9	1.6	6.5	12
1657665	Shoreline Dr ON and Anaheim OFF	142	177	0.25	7.5	8.5	16	6.2	2.1	8.3	14
1657668	405 OFF and EB 405 ON	118	136	0.20	6.1	6.3	12	5.1	1.5	6.7	13
1657669	EB Alondra OFF and Alondra ON	102	117	0.17	5.0	5.6	11	4.2	1.4	5.5	10
1657672	WB Del Amo ON and WB Del Amo OFF	134	163	0.23	7.1	7.6	15	6.0	1.9	7.8	15
1657678	Del Amo ON and 405 OFF	86	119	0.15	5.0	5.5	10	4.2	1.3	5.5	9.6
1658094	EB Del Amo ON and EB Del Amo OFF	79	107	0.14	4.6	5.0	9.6	3.8	1.2	5.1	8.3
1658095	WB Del Amo OFF and EB Del Amo ON	8.2	9.4	0.01	0.39	0.47	0.86	0.32	0.12	0.44	0.76
1658097	WB Willow OFF and EB Willow ON	70	100	0.13	4.3	4.6	8.9	3.6	1.1	4.7	7.5

Table C.4-2. Alternative 1 Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)									
		CO	NO _x	SO ₂	PM ₁₀ (Exhaust)	PM ₁₀ (Entrained)	PM ₁₀ (Total)	PM _{2.5} (Exhaust)	PM _{2.5} (Entrained)	PM _{2.5} (Total)	ROG
14541	Florence OFF and Florence ON	131	66	0.88	9.5	24	34	6.5	6.0	12	8.8
14604	Florence ON and Florence OFF	128	92	0.92	9.4	28	38	6.3	6.9	13	12
14610	Florence ON and Firestone OFF	137	65	0.91	9.4	24	33	6.3	5.8	12	10
14620	Third Off and SR60 ON	41	7.5	0.24	2.3	5.3	7.6	1.4	1.3	2.7	2.4
14698	3rd / Ford ON and 3rd / Ford Off	3.1	1.6	0.02	0.21	0.60	0.81	0.14	0.15	0.29	0.25
14700	Florence OFF and Firestone ON	145	101	1.1	10	29	39	6.9	7.0	14	16
14705	Firestone OFF and Firestone ON	139	72	0.92	10	26	36	6.8	6.3	13	10
14712	Firestone ON and Firestone OFF	131	98	0.96	10	30	40	6.7	7.3	14	12
14729	3rd / Ford Off and SR60 Off	27	13	0.19	1.8	4.9	6.7	1.2	1.2	2.4	2.3
14740	SR60 ON and EasternWhittierOlympic OFF	40	7.6	0.24	2.3	5.2	7.4	1.5	1.3	2.7	2.6
14748	Olympic Off and NB i5 Off	36	18	0.24	2.3	5.6	7.9	1.5	1.4	2.9	4.0
14761	NB i5 Off and Washington ON	99	43	0.66	6.1	14	20	4.2	3.5	7.7	11
14765	SB i5 ON and Washington Off	67	14	0.41	3.9	9.0	13	2.5	2.2	4.7	4.1
14768	NB i5 ON and Olympic Off	37	19	0.25	2.4	6.6	9.0	1.6	1.6	3.2	3.4
14772	Washington Off and Washington ON	55	11	0.33	3.2	7.3	11	2.0	1.8	3.8	3.1
14775	EasternWhittierOlympic OFF and SB i5 Off	56	11	0.34	3.2	7.1	10	2.1	1.7	3.8	3.8
14776	SR60 Off and Olympic ON	64	27	0.42	4.0	10	14	2.7	2.6	5.2	5.6
14784	Washington ON and Washington OFF	52	22	0.34	3.3	8.6	12	2.1	2.1	4.2	4.1
14790	Washington ON and Bandini/Atlantic OFF	34	9.2	0.21	2.1	4.9	6.9	1.3	1.2	2.5	2.1
14791	Olympic ON and NB i5 ON	36	16	0.24	2.2	5.5	7.8	1.5	1.4	2.9	3.7
14794	Eastern ON and SB i5 ON	57	11	0.34	3.2	6.9	10	2.1	1.7	3.8	4.1
14799	SB i5 Off and Eastern ON	13	2.6	0.08	0.73	1.7	2.4	0.47	0.41	0.88	0.83
14817	Washington OFF and Atlantic/Bandini ON	48	22	0.32	3.1	8.1	11	2.0	2.0	4.0	4.1
14828	Bandini/Atlantic OFF and WB Atlantic ON	74	22	0.46	4.6	11	15	3.0	2.6	5.6	4.7
14858	Atlantic/Bandini ON and WB Atlantic OFF	35	18	0.23	2.3	6.5	8.9	1.5	1.6	3.1	2.7
14864	WB Atlantic OFF and EB Atlantic OFF	66	40	0.46	4.4	12	17	2.9	3.0	6.0	6.3
14886	WB Atlantic ON and EB Atlantic ON	38	18	0.25	2.6	6.6	9.3	1.8	1.6	3.4	2.9
14898	Wright Rd OFF and Imperial OFF	165	86	1.08	12	31	42	7.9	7.5	15	12
14944	Imperial ON and Imperial OFF	143	111	1.05	11	34	45	7.8	8.3	16	13
14964	Imperial OFF and EBnWb 105 ON	60	42	0.43	4.6	13	18	3.1	3.2	6.4	5.2
14970	Imperial ON and MLK OFF	18	9.1	0.12	1.3	3.3	4.6	0.87	0.81	1.7	1.2
14973	MLK OFF and 105 OFF	38	20	0.26	2.8	7.2	10	1.9	1.8	3.7	2.5
14991	105 OFF and Rosecrans OFF	42	26	0.29	3.4	8.6	12	2.4	2.1	4.5	2.8
15081	Rosecrans OFF and MLK ON	141	93	1.01	12	30	42	8.3	7.4	16	9.7
15102	EBnWb 105 ON and Rosecrans ON	48	40	0.36	4.3	12	16	3.1	2.9	6.0	3.9
15182	Rosecrans ON and EBnWb 105/Garfield OFF	171	145	1.30	16	43	59	12	11	22	13

Table C.4-2. Alternative 1 Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)									ROG
		CO	NO _x	SO ₂	PM ₁₀ (Exhaust)	PM ₁₀ (Entrained)	PM ₁₀ (Total)	PM _{2.5} (Exhaust)	PM _{2.5} (Entrained)	PM _{2.5} (Total)	
15209	MLK ON and 105 ON	39	25	0.28	3.2	8.2	11	2.2	2.0	4.2	2.7
15290	105 ON and WB Rosecrans ON	78	53	0.55	6.4	17	23	4.4	4.2	8.6	5.9
15352	WB Rosecrans ON and EB Rosecrans ON	69	45	0.48	5.6	15	20	3.9	3.6	7.5	5.1
15353	WB Rosecrans ON and EB Rosecrans ON	100	82	0.75	9.1	25	34	6.5	6.1	13	8.0
15393	EBnWb 105/Garfield OFF and Rosecrans OFF	68	45	0.47	5.4	14	20	3.7	3.5	7.3	5.3
15412	EB Rosecrans ON and WB Alondra OFF	120	96	0.89	11	29	40	7.4	7.1	15	9.8
15433	Rosecrans OFF and Alondra ON	47	32	0.32	3.7	10	14	2.5	2.4	5.0	3.8
15489	Rosecrans OFF and Alondra ON	130	111	0.98	12	33	44	8.2	8.0	16	11
15497	WB Alondra OFF and EB Alondra OFF	31	21	0.21	2.5	6.7	9.2	1.7	1.6	3.4	2.4
15536	Alondra ON and Alondra OFF	49	40	0.36	4.3	12	16	3.0	2.9	6.0	4.1
15549	Alondra ON and EB 91/Atlantic/Artesia OFF	69	55	0.50	6.2	17	23	4.3	4.1	8.4	5.5
15552	Alondra OFF and WB 91/Atlantic ON	61	58	0.48	5.3	16	21	3.7	3.9	7.5	6.4
15581	EB 91/Atlantic/Artesia OFF and WB 91 OFF	83	85	0.65	7.6	23	30	5.3	5.6	11	8.4
15586	WB 91/Atlantic ON and EB 91 ON	62	72	0.52	5.8	18	24	4.1	4.5	8.6	7.3
15588	WB 91 OFF and WB 91 ON	13	14	0.11	1.3	3.8	5.1	0.90	0.94	1.8	1.3
15591	EB 91 ON and WB 91 OFF	39	39	0.30	3.3	10	14	2.3	2.6	4.9	4.2
15615	WB 91 OFF and Artesia/EB 91 OFF	46	49	0.37	4.4	13	18	3.1	3.3	6.4	4.6
15655	WB 91 ON and EB 91 & Artesia ON	46	43	0.35	4.0	12	16	2.8	3.0	5.7	4.6
15696	WB 91 OFF and Artesia/EB 91 OFF	118	123	0.92	10	32	42	7.1	7.9	15	13
15700	EB 91 & Artesia ON and NB LB OFF	90	97	0.72	8.3	26	34	5.8	6.4	12	9.7
15749	SB LB OFF and LB ON	140	142	1.1	12	36	48	8.1	9.0	17	16
15782	Artesia/EB 91 OFF and LB Blvd ON	52	56	0.41	4.7	15	19	3.3	3.6	6.9	5.7
15785	LB ON and Del Amo OFF	125	146	1.0	12	37	49	8.1	9.2	17	15
15915	Del Amo OFF and Del Amo ON	134	155	1.1	12	39	51	8.3	9.5	18	16
15954	LB Blvd ON and LB Blvd OFF	173	209	1.4	16	51	66	11	12	23	22
16041	LB Blvd OFF and WB Del Amo ON	123	186	1.1	13	44	57	9.0	11	20	17
16042	Del Amo ON and 405 OFF	35	45	0.30	3.1	11	14	2.2	2.6	4.8	4.8
16050	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	199	243	1.7	16	53	69	11	13	24	29
16053	EB 405 ON and WB 405 ON	256	322	2.1	23	76	99	16	19	35	34
16063	WB 405 ON and WB Willow OFF	41	59	0.36	3.7	13	16	2.6	3.1	5.7	6.4
16073	WB 405 ON and WB Willow OFF	43	56	0.37	3.7	12	16	2.6	3.0	5.6	6.3
16086	405/Wardlow/Pacific OFF and WB Willow ON	129	163	1.1	11	37	48	7.8	9.1	17	18
16121	405/Wardlow/Pacific OFF and WB Willow ON	35	45	0.30	3.0	9.7	13	2.1	2.4	4.5	5.1
16123	EB Willow ON and EB Willow OFF	117	165	1.0	10	35	46	7.3	8.7	16	18
16134	WB Willow OFF and WB Willow ON	15	18	0.12	1.5	4.7	6.1	1.0	1.1	2.2	1.7
16135	EB Willow ON and PCH OFF	1.1	1.3	0.01	0.10	0.32	0.42	0.07	0.08	0.15	0.13

Table C.4-2. Alternative 1 Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)									
		CO	NO _x	SO ₂	PM ₁₀ (Exhaust)	PM ₁₀ (Entrained)	PM ₁₀ (Total)	PM _{2.5} (Exhaust)	PM _{2.5} (Entrained)	PM _{2.5} (Total)	ROG
16152	WB Willow ON and EB Willow OFF	22	7.2	0.14	1.4	3.4	4.8	0.95	0.83	1.8	1.3
16157	EB Willow OFF and WB PCH ON	25	32	0.21	2.2	7.5	9.7	1.6	1.8	3.4	3.4
16168	PCH OFF and WB Anaheim ON	20	22	0.16	1.7	5.5	7.2	1.2	1.3	2.5	2.3
16174	EB Anaheim ON and Shoreline Dr ON	18	19	0.14	1.5	4.9	6.4	1.1	1.2	2.3	2.0
16185	Shoreline Dr ON	25	35	0.22	2.2	7.4	9.6	1.5	1.8	3.4	3.8
16187	EB PCH ON and PCH OFF	27	32	0.22	2.3	7.5	9.8	1.6	1.8	3.4	3.5
16237	WB Anaheim OFF and WB Anaheim ON	74	89	0.61	6.8	22	29	4.8	5.5	10	8.9
16247	WB Anaheim ON and EB Anaheim OFF	176	207	1.5	15	50	66	11	12	23	22
16254	WB PCH OFF and EB PCH ON	19	23	0.16	1.8	5.8	7.6	1.3	1.4	2.7	2.3
16266	PCH ON and WB Anaheim OFF	53	69	0.45	5.6	18	23	4.0	4.4	8.4	5.9
88573	PCH OFF and PCH ON	393	265	2.8	27	74	101	18	18	37	43
88574	EB Del Amo OFF and EB 405 ON	301	144	2.0	21	52	73	14	13	27	23
88575	EB 405 ON and Wardlow/WB 405 ON	181	133	1.3	13	39	52	8.9	9.6	18	18
88576	405 OFF and EB 405 ON	159	83	1.1	11	29	40	7.6	7.0	15	12
97956	EB Atlantic OFF and Florence ON	40	57	0.34	5.2	14	19	4.0	3.4	7.3	4
127416	EB Atlantic OFF and Florence ON	18	18	0.14	1.6	4.9	6.5	1.1	1.2	2.3	2
127435	EB Atlantic ON and Florence OFF	17	27	0.15	2.4	6.3	8.6	1.8	1.5	3.4	2
127443	EB Atlantic ON and Florence OFF	44	67	0.37	6.0	16	22	4.6	3.9	8.5	4
1643212	Firestone OFF and Imperial ON	21	31	0.18	2.7	7.5	10	2.0	1.8	3.9	2
1643213	Firestone ON and Wright Rd OFF	22	5.0	0.14	1.3	2.8	4.1	0.86	0.68	1.5	0.99
1643214	Pico OFF and Harbor Scenic Dr OFF	2.6	3.8	0.02	0.33	0.92	1.3	0.25	0.23	0.48	0.26
1643216	NB LB OFF and SB LB OFF	7.7	12	0.07	1.0	2.9	4.0	0.77	0.72	1.5	0.85
1656691	Anaheim OFF and Pico ON	82	107	0.70	8.8	28	36	6.3	6.8	13	9.2
1657648	Pico ON and Harbor Scenic Drive ON	63	44	0.44	5.1	14	19	3.5	3.4	6.9	5.0
1657653	EB Anaheim ON and Pico OFF	61	75	0.52	5.4	18	23	3.7	4.3	8.1	8.2
1657654	Shoreline Dr OFF	36	43	0.30	3.2	11	14	2.2	2.6	4.8	4.6
1657662	Shoreline Dr OFF and EB Anaheim ON	37	47	0.31	3.3	11	14	2.3	2.6	4.9	5.1
1657665	Shoreline Dr ON and Anaheim OFF	48	55	0.39	4.3	14	18	3.0	3.4	6.5	5.6
1657668	405 OFF and EB 405 ON	34	46	0.29	2.9	9.8	13	2.0	2.4	4.4	5.1
1657669	EB Alondra OFF and Alondra ON	33	43	0.28	2.9	9.7	13	2.0	2.4	4.4	4.7
1657672	WB Del Amo ON and WB Del Amo OFF	39	54	0.34	3.5	12	15	2.4	2.9	5.3	5.9
1657678	Del Amo ON and 405 OFF	26	38	0.23	2.4	8.4	11	1.7	2.1	3.8	3.9
1658094	EB Del Amo ON and EB Del Amo OFF	26	31	0.21	2.5	7.9	10	1.7	1.9	3.7	3.0
1658095	WB Del Amo OFF and EB Del Amo ON	3.0	3.3	0.02	0.27	0.85	1.1	0.19	0.21	0.40	0.33
1658097	WB Willow OFF and EB Willow ON	23	29	0.19	2.3	7.3	9.6	1.6	1.8	3.4	2.6

Table C.4-3. Alternative 5A Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)									ROG
		CO	NO _x	SO ₂	PM ₁₀ (Exhaust)	PM ₁₀ (Entrained)	PM ₁₀ (Total)	PM _{2.5} (Exhaust)	PM _{2.5} (Entrained)	PM _{2.5} (Total)	
14541	Florence OFF and Florence ON	134	61	0.88	8.8	23	32	5.8	5.7	11	10
14604	Florence OFF and Florence ON	115	73	0.81	8.1	23	31	5.5	5.7	11	11
14610	Florence ON and Firestone OFF	186	82	1.2	12	31	43	7.9	7.6	16	15
14620	Third Off and SR60 ON	59	12	0.36	3.3	7.2	11	2.2	1.8	4.0	4.5
14698	3rd/Ford ON and 3rd Ford OFF	4.1	1.8	0.03	0.26	0.70	0.96	0.17	0.17	0.34	0.34
14700	Florence OFF and WB Firestone ON	176	108	1.2	12	34	46	8.1	8.3	16	17
14705	Firestone OFF and WB Firestone ON	116	55	0.75	7.8	21	29	5.2	5.1	10	8.8
14712	EB Firestone ON and Firestone OFF	99	66	0.70	7.5	21	29	5.1	5.3	10	8.4
14729	3rd Ford OFF and SR 60 OFF	36	16	0.24	2.2	5.7	8.0	1.5	1.4	2.9	3.4
14740	SR60 ON and EasternWhittierOlympic OFF	60	13	0.37	3.4	6.9	10	2.4	1.7	4.1	5.3
14748	Olympic Off and NB i5 OFF	54	23	0.36	3.6	9.7	13	2.4	2.4	4.8	3.8
14761	NB i5 OFF and Washington/710 Truck Lane ON	85	33	0.55	5.2	13	19	3.5	3.3	6.7	6.9
14768	NB i5 ON and Olympic Off	41	18	0.27	2.8	7.5	10	1.9	1.9	3.7	2.8
14775	EasternWhittierOlympic OFF and SB i5 Off	25	5.5	0.16	1.5	3.7	5.2	0.95	0.91	1.9	1.4
14776	SR 60 OFF and Olympic ON	104	44	0.70	6.3	15	21	4.4	3.6	8.0	12
14784	Washington/710 Truck Lane ON and Washington OFF	66	25	0.42	4.2	11	15	2.7	2.7	5.4	4.8
14790	Washington Off and Washington ON	71	16	0.42	4.1	9.7	14	2.6	2.4	4.9	4.3
14791	Olympic ON and NB i5 ON	37	15	0.24	2.4	6.5	8.9	1.6	1.6	3.2	2.6
14794	SB i5 Off and Eastern ON	47	11	0.29	2.8	6.9	9.7	1.8	1.7	3.5	2.7
14799	SB i5 Off and Eastern ON	49	11	0.30	2.9	7.1	10.0	1.8	1.7	3.6	2.7
14828	Washington ON and Bandini/Atlantic OFF	82	21	0.49	4.8	11	16	3.1	2.7	5.8	5.7
14858	Washington OFF and WB Atlantic OFF	67	27	0.43	4.3	11	15	2.8	2.8	5.5	5.1
14864	Slauson ON and Atlantic ON	186	90	1.3	12	25	37	8.3	6.2	15	23
14886	Bandini/Atlantic OFF and Atlantic ON	130	36	0.78	7.7	18	25	5.0	4.3	9.4	9.7
14898	Imperial/Wright Rd OFF and Imperial ON	97	50	0.64	6.8	18	25	4.6	4.5	9.1	7.3
14944	Imperial OFF and Imperial ON	105	74	0.76	8.3	24	32	5.7	5.8	12	8.8
14964	Imperial OFF and EBnWB 105 ON	68	45	0.48	5.3	15	20	3.6	3.6	7.2	5.3
14970	Imperial ON and 105 OFF	21	10	0.14	1.5	3.9	5.4	1.0	0.97	2.0	1.5
14973	Imperial ON and 105 OFF	48	23	0.32	3.4	8.8	12	2.2	2.2	4.4	3.3
14991	105 OFF and Rosecrans OFF	51	30	0.36	4.1	10	14	2.9	2.5	5.4	3.3
15081	Rosecrans OFF and MLK ON	174	107	1.2	14	36	50	10.0	8.7	19	11
15102	EBnWB 105 ON and Rosecrans ON	57	44	0.42	5.1	14	19	3.6	3.3	6.9	4.3
15182	Rosecrans ON and EBnWb 105/Garfield OFF	205	161	1.5	19	49	67	13	12	25	15
15209	MLK ON and 105 ON	48	29	0.34	3.9	9.8	14	2.7	2.4	5.1	3.2
15290	105 ON and WB Rosecrans ON	95	62	0.67	7.0	19	26	4.8	4.7	9.5	8.4
15352	WB Rosecrans ON and EB Rosecrans ON	84	54	0.58	6.1	17	23	4.2	4.1	8.3	7.4

Table C.4-3. Alternative 5A Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)									ROG
		CO	NO _x	SO ₂	PM ₁₀ (Exhaust)	PM ₁₀ (Entrained)	PM ₁₀ (Total)	PM _{2.5} (Exhaust)	PM _{2.5} (Entrained)	PM _{2.5} (Total)	
15353	EBnWb 105/Garfield OFF and Rosecrans Off	114	89	0.85	10	27	38	7.5	6.7	14	8.4
15393	EB Rosecrans ON and WB Alondra OFF	81	51	0.56	6.0	16	22	4.1	4.0	8.1	6.8
15412	Rosecrans OFF and Alondra ON	135	105	0.99	12	32	44	8.2	7.9	16	11
15433	WB Alondra OFF and EB Alondra OFF	52	35	0.36	4.0	11	15	2.8	2.7	5.5	4.2
15489	Alondra ON and EB 91/Atlantic ON	150	122	1.1	13	37	50	9.5	9.0	19	12
15497	Alondra ON and WB 91 OFF	30	22	0.21	2.5	6.9	9.3	1.7	1.7	3.4	2.4
15536	EB 91/Atlantic ON and WB 91/Atlantic ON	75	67	0.57	7.2	19	26	5.2	4.7	9.9	6.1
15549	Alondra ON and WB 91 OFF	83	62	0.59	6.9	19	26	4.8	4.7	9.5	6.7
15552	WB 91/Atlantic ON and Alondra Blvd OFF	80	84	0.64	7.7	23	31	5.5	5.6	11	7.9
15581	WB 91 OFF and WB 91 ON	107	91	0.79	9.9	27	37	7.0	6.6	14	8.6
15591	WB 91 ON and EB 91 & Artesia ON	46	40	0.34	3.9	12	16	2.7	2.9	5.6	4.2
15615	Alondra Blvd OFF and 91/Artesia OFF	128	125	0.99	13	35	48	9.2	8.7	18	11
15655	EB 91 & Artesia ON and NB LB OFF	56	47	0.41	4.6	14	18	3.2	3.3	6.5	5.4
15696	NB LB OFF and LB ON	149	135	1.1	12	36	49	8.4	9.0	17	16
15700	91/Artesia Blvd OFF and LB Blvd ON	57	54	0.44	5.3	15	21	3.7	3.8	7.5	5.2
15749	LB ON and Del Amo OFF	166	142	1.2	14	42	56	9.9	10	20	15
15782	Del Amo OFF and Del Amo ON	66	62	0.49	5.5	17	22	3.8	4.1	7.9	6.8
15785	LB Blvd ON and LB Blvd OFF	149	150	1.2	14	42	56	10	10	20	14
15915	LB Blvd OFF and EB Del Amo ON	154	153	1.2	14	43	57	10	10	20	15
15954	710 Truck Lane ON and EB 405 OFF	214	188	1.6	18	54	72	13	13	26	20
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	148	181	1.2	15	47	62	11	12	22	16
16042	EB 405 ON and WB 405 ON	27	28	0.21	2.8	7.7	11	2.0	1.9	3.9	2.4
16050	WB 405 ON and Willow OFF	234	227	1.8	23	64	87	16	16	32	20
16053	405/Wardlow/Pacific OFF and Willow ON	231	234	1.8	24	64	88	17	16	33	20
16086	Willow ON and PCH OFF	99	107	0.78	9.0	28	37	6.3	6.9	13	11
16121	Willow OFF and Willow ON	115	136	0.94	11	34	45	7.3	8.4	16	14
16123	Willow OFF and PCH ON	95	110	0.77	9.8	29	39	7.0	7.2	14	9.5
16134	PCH ON and WB Anaheim ON	36	42	0.29	3.8	11	15	2.7	2.7	5.4	3.5
16152	Shoreline Dr ON	30	4.9	0.19	1.8	3.7	5.4	1.1	0.90	2.0	1.3
16168	711 Truck Lane ON and EB Anaheim ON	8.5	13	0.07	1.1	3.2	4.3	0.87	0.78	2	0.91
16187	PCH ON and 710 Truck Lane ON	33	58	0.32	3.9	13	17	2.9	3.3	6.2	4.7
16237	PCH OFF and Shoreline Dr OFF	70	73	0.55	7.1	20	27	5.1	4.9	10	6.3
16247	EB Del Amo OFF and EB 405 ON	208	199	1.6	20	56	76	14	14	28	19
16254	EB 405 ON and Wardlow/WB 405 ON	23	24	0.18	2.1	6.4	8.5	1.5	1.6	3.0	2.4
88573	Florence ON and Slauson OFF	195	118	1.4	13	36	49	8.9	8.8	18	19
88574	EB Atlantic ON and Slauson OFF	88	36	0.56	5.5	14	20	3.6	3.5	7.1	6.9

Table C.4-3. Alternative 5A Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)									ROG
		CO	NO _x	SO ₂	PM ₁₀ (Exhaust)	PM ₁₀ (Entrained)	PM ₁₀ (Total)	PM _{2.5} (Exhaust)	PM _{2.5} (Entrained)	PM _{2.5} (Total)	
88575	Imperial ON and Firestone OFF	215	142	1.5	16	45	61	11	11	22	19
88576	Firestone ON and Wright Rd OFF	204	99	1.4	14	36	50	9.1	8.8	18	16
97956	Anaheim ON and Harbor Scenic Dr OFF	31	44	0.26	4.0	11	15	3.1	2.6	5.7	3.0
127416	EB 91 & Artesia ON and NB LB OFF	24	20	0.17	1.9	5.7	7.6	1.3	1.4	2.7	2.3
127435	Anaheim OFF and PCH OFF	41	62	0.35	5.5	15	20	4.2	3.7	7.8	4.3
127443	Harbor Scenic Drive ON and Anaheim OFF	40	57	0.33	5.2	14	19	4.0	3.3	7.3	3.9
1643216	PCH OFF and Pico ON	23	39	0.22	2.8	9.3	12	2.0	2.3	4.3	3.1
1656691	WB 405 OFF and EB 405 ON	122	147	1.00	12	38	50	8.5	9.3	18	13
1657648	EB Alondra OFF and Alondra ON	60	46	0.43	5.0	14	19	3.5	3.5	7.0	5.0
1657653	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	68	74	0.54	6.0	19	25	4.2	4.6	8.8	7.9
1657654	Del Amo ON and Long Beach Fwy Truck Lane ON	52	47	0.39	4.2	12	17	2.9	3.0	5.9	5.7
1657662	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	41	46	0.33	3.7	12	15	2.6	2.8	5.4	4.8
1657665	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	53	58	0.43	4.7	15	20	3.3	3.6	6.9	6.2
1657668	Willow ON and Willow OFF	109	133	0.90	11	34	45	7.7	8.5	16	12
1658094	WB Anaheim ON and Shoreline Dr ON	40	49	0.33	4.5	13	17	3.4	3.1	6.5	3.8
2669548	Slauson OFF and Slauson ON	185	83	1.2	12	31	44	7.9	7.7	16	14
2669551	Slauson ON and Florence OFF	152	68	0.98	9.8	25	35	6.5	6.1	13	13
2669553	Slauson OFF and Atlantic OFF	105	65	0.73	7.3	21	28	4.9	5.1	10	9.7
2669556	Atlantic OFF and Slauson ON	90	44	0.61	6.3	17	24	4.2	4.2	8.4	6.3
2669564	SB i5 ON and Washington Off	104	23	0.63	5.9	14	20	3.8	3.5	7.3	6.7
2669598	Shoreline Dr OFF and Anaheim & Pico OFF	6.2	11	0.06	0.64	2.3	3.0	0.46	0.57	1.0	1.1
2669600	Shoreline Dr OFF	82	16	0.47	4.6	10	15	2.9	2.5	5.3	4.3
2669601	Anaheim & Pico OFF and PCH ON	21	39	0.21	2.7	9.1	12	2.0	2.2	4.2	3.0
2669608	EB 405 ON and WB 405 ON	20	20	0.15	2.0	5.5	7.5	1.4	1.4	2.8	1.7
2669612	EB 405 OFF and WB 405 OFF	59	63	0.46	5.8	17	23	4.1	4.2	8.3	5.7
2669643	Imperial OFF and Imperial ON	55	39	0.40	4.4	13	17	3.0	3.1	6.1	4.6
2669645	Imperial/Wright Rd OFF and Imperial ON	83	43	0.54	5.8	16	21	3.9	3.8	7.7	6.2
2669651	WB Firestone ON and EB Firestone ON	78	38	0.51	5.2	14	19	3.5	3.4	6.9	6.0
2669653	WB Firestone ON and EB Firestone ON	65	43	0.46	4.8	14	19	3.2	3.4	6.6	5.7
2669659	Florence OFF and Florence ON	68	31	0.44	4.4	12	16	2.9	2.9	5.8	5.3
2669661	Florence ON and Firestone OFF	64	28	0.42	4.1	11	15	2.7	2.6	5.3	5.1
2669687	Eastern ON and SB i5 ON	25	5.4	0.15	1.4	3.5	4.9	0.90	0.86	1.8	1.4

Table C.4-4. Alternative 6A Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
14541	Mainline	102		20		0.58		5.7		12		18		3.6		3.0		6.6		6.2	
14604	Mainline	82		26		0.51		5.1		13		18		3.3		3.2		6.5		5.3	
14610	Mainline	177		35		1.0		9.9		22		32		6.2		5.4		12		10	
14700	Mainline	179		55		1.1		11		28		39		7.2		6.9		14		11	
14705	Mainline	89		18		0.50		5.0		11		16		3.1		2.7		5.8		5.3	
14712	Mainline	68		23		0.44		4.4		11		16		2.9		2.7		5.6		4.0	
14729	Mainline	30		18		0.21		2.2		6.3		8.5		1.5		1.6		3.0		2.3	
14740	Mainline	170		64		1.1		10		28		38		6.7		6.8		14		13	
14748	Mainline	33		27		0.25		2.1		5.0		7.1		1.5		1.2		2.7		6.3	
14761	Mainline	61		50		0.46		3.8		9.4		13		2.8		2.3		5.1		12	
14768	Mainline	40		34		0.30		2.6		7.4		10		1.9		1.8		3.7		6.5	
14775	Mainline	49		18		0.31		3.0		7.8		11		2.0		1.9		3.9		4.0	
14776	Mainline	130		91		0.96		8.5		24		32		5.9		5.8		12		17	
14784	Mainline	53		33		0.37		3.6		10		14		2.4		2.6		4.9		5.0	
14790	Mainline	110		42		0.70		6.7		18		24		4.3		4.3		8.7		8.8	
14791	Mainline	45		32		0.33		3.0		8.6		12		2.1		2.1		4.2		5.6	
14794	Mainline	41		17		0.26		2.6		7.0		9.6		1.7		1.7		3.4		3.2	
14799	Mainline	14		5.8		0.09		0.85		2.2		3.1		0.56		0.55		1.1		1.2	
14828	Mainline	47		18		0.30		2.9		7.8		11		1.9		1.9		3.8		3.6	
14858	Mainline	103		64		0.72		7.0		20		27		4.7		5.0		9.7		9.8	
14864	Mainline	24		16		0.17		1.7		5.2		7.0		1.2		1.3		2.4		2.2	
14886	Mainline	14		1.9		0.08		0.73		1.6		2.3		0.45		0.39		0.83		0.72	
14898	Mainline	184		39		1.0		10		23		33		6.5		5.7		12		11	
14944	Mainline	80		27		0.52		5.3		13		18		3.4		3.2		6.7		4.7	
14964	Mainline	93		30		0.59		6.0		15		21		3.9		3.6		7.5		5.3	
14991	Mainline	59		13		0.33		3.3		7.2		11		2.1		1.8		3.8		3.6	
15081	Mainline	161		37		0.92		9.2		20		30		5.8		5.0		11		9.7	
15102	Mainline	41		16		0.27		2.9		7.1		10		1.9		1.7		3.6		2.4	
15182	Mainline	142		57		0.97		10		25		35		6.8		6.1		13		8.2	
15209	Mainline	59		13		0.33		3.3		7.3		11		2.1		1.8		3.9		3.6	
15290	Mainline	74		21		0.43		4.5		10		15		2.9		2.5		5.4		4.6	
15352	Mainline	56		16		0.33		3.4		7.7		11		2.2		1.9		4.1		3.5	
15353	Mainline	111		48		0.75		8.1		20		28		5.5		4.9		10		6.7	
15433	Mainline	58		17		0.34		3.5		8.1		12		2.3		2.0		4.3		3.5	
15489	Mainline	83		37		0.57		6.1		15		21		4.2		3.7		7.9		5.0	
15497	Mainline	16		5.7		0.10		1.1		2.5		3.5		0.69		0.61		1.3		0.93	
15536	Mainline	76		38		0.53		5.8		14		20		4.0		3.5		7.6		4.7	
15549	Mainline	45		16		0.28		3.0		7.0		10		2.0		1.7		3.7		2.6	
15552	Mainline	53		30		0.37		4.3		11		15		3.0		2.7		5.7		3.5	
15581	Mainline	74		31		0.47		5.3		12		17		3.5		3.0		6.5		4.2	
15586	Mainline	40		23		0.29		3.3		8.1		11		2.3		2.0		4.3		2.5	
15588	Mainline	13		7.5		0.10		1.1		2.7		3.8		0.77		0.66		1.4		0.84	
15591	Mainline	60		29		0.38		4.4		11		15		2.9		2.6		5.5		3.8	
15615	Mainline	46		26		0.33		3.8		9.3		13		2.6		2.3		4.9		2.9	
15655	Mainline	106		49		0.66		7.5		19		26		5.0		4.5		9.5		6.9	
15700	Mainline	104		53		0.70		8.0		20		28		5.4		4.9		10		6.7	
15749	Mainline	173		86		1.1		13		31		44		8.4		7.6		16		11	
15782	Mainline	117		63		0.75		8.8		22		31		5.9		5.3		11		7.8	

Table C.4-4. Alternative 6A Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
15785	Mainline	96		51		0.64		7.4		19		26		5.1		4.7		9.8		6.3	
15915	Mainline	44		23		0.30		3.4		8.6		12		2.3		2.1		4.4		2.9	
15954	Mainline	115		62		0.76		8.5		23		31		5.8		5.6		11		8.4	
16041	Mainline	142		102		0.99		12		31		44		8.6		7.7		16		10	
16042	Mainline	24		16		0.17		2.0		5.0		7.1		1.4		1.2		2.7		1.6	
16086	Mainline	85		55		0.59		7.2		18		25		5.0		4.3		9.3		5.7	
16121	Mainline	93		63		0.65		8.0		20		28		5.6		4.9		11		6.4	
16123	Mainline	75		51		0.53		6.4		16		22		4.5		3.9		8.4		5.1	
16134	Mainline	4.6		2.7		0.03		0.37		0.89		1.3		0.26		0.22		0.48		0.29	
16135	Mainline	0.90		0.57		0.01		0.08		0.18		0.25		0.05		0.04		0.10		0.06	
16152	Shoreline On	41		5.7		0.24		2.3		4.8		7.1		1.4		1.2		2.6		1.9	
16168	Mainline	28		37		0.23		3.5		9.2		13		2.6		2.3		4.9		2.6	
16185	Mainline	20		12		0.14		1.6		3.9		5.5		1.1		0.95		2.1		1.3	
16187	Mainline	7.3		7.7		0.06		0.80		2.0		2.8		0.60		0.49		1.1		0.58	
16199	Shoreline Off	6.8		1.3		0.04		0.38		0.82		1.2		0.23		0.20		0.44		0.38	
16237	Mainline	64		39		0.44		5.3		13		18		3.6		3.1		6.8		4.1	
16247	Mainline	121		70		0.83		9.2		25		34		6.3		6.1		12		9.1	
16254	Mainline	41		25		0.29		3.3		8.8		12		2.3		2.2		4.4		2.9	
16266	Mainline	49		35		0.34		4.2		11		15		2.9		2.7		5.6		3.6	
88574	Mainline	30		4.2		0.17		1.6		3.5		5.1		0.99		0.86		1.8		1.6	
88575	Mainline	193		63		1.2		13		31		44		8.2		7.6		16		11	
88576	Mainline	162		32		0.91		9.0		19		28		5.7		4.7		10		10	
97956	Mainline	33		41		0.27		3.9		10		14		3.0		2.6		5.5		3.0	
127416	Mainline	80		40		0.50		5.7		14		20		3.8		3.5		7.3		5.4	
127435	Mainline	6.8		8.0		0.05		0.80		2.0		2.8		0.60		0.49		1.1		0.58	
127443	Mainline	20		22		0.16		2.3		5.6		7.8		1.7		1.4		3.1		1.7	
1643216	Mainline	10		13		0.08		1.2		3.3		4.5		0.94		0.81		1.7		0.95	
1656691	Mainline	46		33		0.32		4.0		10		14		2.8		2.5		5.3		3.4	
1657648	Mainline	99		34		0.60		6.5		15		22		4.2		3.7		7.9		5.8	
1657653	Mainline	20		11		0.13		1.5		3.9		5.4		1.0		0.96		2.0		1.3	
1657654	Mainline	31		16		0.20		2.3		5.7		8.0		1.5		1.4		2.9		2.1	
1657662	Mainline	121		69		0.83		9.5		24		34		6.5		6.0		13		8.3	
1657665	Mainline	16		8.3		0.11		1.2		3.1		4.3		0.83		0.76		1.6		1.0	
1657668	Mainline	95		67		0.67		8.3		21		29		5.9		5.1		11		6.5	
1658094	Mainline	14		8.5		0.10		1.1		2.7		3.8		0.81		0.66		1.5		0.86	
1658097	Mainline	13		8.0		0.09		1.1		2.5		3.6		0.75		0.61		1.4		0.80	
2669480	Freight Corridor Mainline	146		308		1.6		20		73		93		14		18		32		25	
2669481	Freight Corridor Mainline	179		342		1.8		26		83		109		20		20		40		24	
2669482	Freight Corridor Mainline	115		213		1.1		17		52		69		13		13		26		14	
2669483	Freight Corridor Mainline	27		49		0.26		3.9		12		16		3.0		2.9		6.0		3.3	
2669486	Freight Corridor Mainline	50		91		0.45		7.5		21		29		5.8		5.2		11		5.8	
2669487	Freight Corridor Mainline	32		64		0.33		4.6		15		20		3.5		3.7		7.2		4.6	
2669489	Freight Corridor Mainline	91		175		0.94		13		44		56		9.7		11		20		13	
2669494	Freight Corridor Mainline	26		54		0.28		3.4		13		16		2.5		3.2		5.7		4.4	
2669495	Pico Off	11		19		0.10		1.7		4.4		6.1		1.3		1.1		2.4		1.2	
2669498	Pico On	15		37		0.15		1.00		4.3		5.3		0.71		1.0		1.8		6.2	
2669502	Harbour Scenic On	22		38		0.14		0.78		3.1		3.9		0.57		0.76		1.3		10	
2669505	Frt Off	11		22		0.08		0.52		2.2		2.7		0.37		0.53		0.90		4.8	

Table C.4-4. Alternative 6A Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
2669511	Pico On Freight Corridor	7.5		18		0.07		0.49		2.1		2.6		0.35		0.51		0.86		3.0	
2669512	Pico Off Freight Corridor	3.0		6.9		0.03		0.19		0.83		1.0		0.14		0.20		0.34		1.2	
2669523	Anaheim On	40		73		0.30		1.8		7.5		9.4		1.4		1.8		3.2		16	
2669524	Anaheim Off	24		37		0.14		0.78		3.0		3.8		0.59		0.75		1.3		11	
2669548	Mainline	94		13		0.52		5.0		11		16		3.0		2.6		5.7		5.0	
2669556	Mainline	57	58	18	18	0.36	0.37	3.6	3.7	9.1	9.3	13	13	2.3	2.4	2.2	2.3	4.5	4.7	3.5	3.6
2669564	Mainline	85		32		0.54		5.2		14		19		3.4		3.4		6.7		6.8	
2669594	Mixed Flow Pico On	8.1		15		0.06		0.41		1.6		2.0		0.30		0.38		0.68		3.4	
2669598	Mainline	9.4		9.0		0.07		0.98		2.4		3.4		0.72		0.60		1.3		0.73	
2669599	Shoreline Off	24		4.6		0.13		1.3		2.9		4.2		0.82		0.71		1.5		1.3	
2669600	Shoreline Off	51		9.9		0.28		2.8		6.2		9.0		1.8		1.5		3.3		2.8	
2669601	Mainline	9.2		10		0.07		1.0		2.7		3.7		0.79		0.66		1.4		0.78	
2669604	Freight Corridor Mainline	19		34		0.18		2.9		8.1		11		2.3		2.0		4.3		2.2	
2669606	SB Frt Corr On	46		76		0.27		1.4		5.6		7.0		1.1		1.4		2.4		23	
2669608	Mainline	19		12		0.13		1.6		4.0		5.6		1.1		0.97		2.1		1.3	
2669612	Mainline	56		36		0.38		4.7		12		16		3.3		2.9		6.1		3.8	
2669619	SB Frt Corr to GP On	26		16		0.20		1.2		5.1		6.3		1.0		1.2		2.3		7.7	
2669628	Mainline	23		10		0.16		1.7		4.1		5.8		1.1		1.0		2.2		1.4	
2669632	Mainline	27		16		0.19		2.2		5.7		7.9		1.6		1.4		3.0		1.8	
2669643	Mainline	44		15		0.28		2.9		7.1		10.0		1.9		1.7		3.6		2.6	
2669645	Mainline	93		19		0.52		5.2		12		17		3.3		2.9		6.1		5.4	
2669651	Mainline	85		17		0.48		4.8		11		15		3.0		2.6		5.6		5.1	
2669653	Mainline	28		9.2		0.18		1.8		4.5		6.3		1.2		1.1		2.3		1.7	
2669659	Mainline	52		10		0.30		2.9		6.3		9.3		1.8		1.6		3.4		3.2	
2669661	Mainline	39		12		0.24		2.4		6.2		8.6		1.6		1.5		3.1		2.5	
2669676	Mainline	23		3.2		0.13		1.2		2.7		3.9		0.75		0.65		1.4		1.2	
2669687	Mainline	41		17		0.26		2.6		7.0		9.6		1.7		1.7		3.4		3.2	
2669689	Mainline	9.3		11		0.07		1.1		2.7		3.8		0.83		0.67		1.5		0.80	
2669696	NB Frt Corr Off	19		27		0.14		0.80		3.2		4.0		0.63		0.79		1.4		6.6	
2669697	Mainline	49		26		0.33		3.7		9.6		13		2.5		2.3		4.9		3.4	
2669699	Mainline	57	67	19	23	0.37	0.43	3.7	4.4	9.4	11.1	13	16	2.4	2.9	2.3	2.7	4.7	5.6	3.4	4.0
2669704	Mainline	76		57		0.56		5.5		17		22		3.7		4.1		7.8		7.8	
2669712	SB MF Washinton Ramp to Frt Corr On	1.6		2.8		0.01		0.25		0.67		0.91		0.19		0.16		0.36		0.18	
2669714	Mainline	125		21		0.71		6.8		15		22		4.2		3.7		7.9		6.7	
2669749	Mainline	26		17		0.18		1.9		5.5		7.4		1.2		1.4		2.6		2.3	
2669750	Frt Corr NB On	27	25	58	54	0.29	0.27	3.7	3.4	14	13	17	16	2.7	2.5	3.3	3.1	6.0	5.6	4.5	4.2
2669751	Mainline	53		10		0.30		2.9		6.3		9.2		1.9		1.5		3.4		3.4	
2669759	Freight Corridor Mainline	78		131		0.81		11		37		48		8.4		9.0		17		9.9	
2669760	Patata On	3.1		5.5		0.03		0.48		1.3		1.8		0.38		0.32		0.69		0.35	
2669763	Patata Off	3.6		6.1		0.03		0.53		1.5		2.0		0.42		0.36		0.78		0.39	
2669766	SR 91 EB Off	17		41		0.21		2		9.0		11		1.5		2.2		3.7		3.5	
2669768	Freight Corridor Mainline	113		199		1.2		15		55		71		12		14		25		16	
2669769	WB SR 91 On	11		25		0.13		1.3		5.7		7.1		0.95		1.4		2.4		2.2	
2669788	Mainline	82		30		0.52		5.0		14		19		3.2		3.3		6.6		6.2	
15393	Mainline	124		34		0.72		7.4		17		24		4.8		4.1		8.8		8.0	
15412	Mainline	79		33		0.53		5.7		14		20		3.9		3.4		7.3		4.7	
16050	Mainline	204		128		1.4		17		42		59		12		10		22		13	
16053	Mainline	82		54		0.57		6.8		17		24		4.7		4.3		9.0		5.8	

Table C.4-4. Alternative 6A Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
2669484	Freight Corridor Mainline	147		271		1.4		22		66		87		17		16		33		18	
2669485	Freight Corridor Mainline	205		391		2.0		30		95		124		23		23		46		27	
2669488	Freight Corridor Mainline	319		535		3.3		45		150		195		34		37		71		40	
2669764	Freight Corridor Mainline	356		688		3.7		50		171		222		38		42		80		50	
88573	Mainline	157	110	48	33	0.98	0.68	9.7	6.8	24	17	34	24	6.3	4.4	6.0	4.2	12	8.6	9.8	6.8
2669553	Mainline	77	64	25	20	0.49	0.41	5.0	4.2	13	10	18	15	3.2	2.7	3.1	2.6	6.3	5.3	4.5	3.8
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	32	18	65	36	0.27	0.15	1.7	0.97	7.2	4.0	8.9	5.0	1.3	0.71	1.8	1.0	3.0	1.7	13	7.1
2669698	Freight Corridor Mainline	6.5	6.5	11	11	0.06	0.06	0.98	0.98	2.7	2.7	3.7	3.6	0.77	0.77	0.66	0.65	1.4	1.4	0.72	0.71
2669718	SB Frt Corr Off	24	20	45	37	0.30	0.24	3.0	2.5	13	11	16	13	2.2	1.8	3.2	2.6	5.3	4.4	4.4	3.6
2669748	End of Frt Corridor Mainline	49	35	81	57	0.46	0.32	7.1	5.0	21	15	28	20	5.6	3.9	5.1	3.6	11	7.6	5.5	3.9
2669551	Mainline	190	144	37	28	1.1	0.81	11	8.0	23	18	34	26	6.6	5.0	5.7	4.3	12	9.4	11	8.5
2669717	Freight Corridor Mainline	193	134	310	216	1.9	1.3	27	19	88	61	115	80	21	15	21	15	43	30	23	16
2669761	Freight Corridor Mainline	192	149	354	274	1.9	1.5	28	22	88	68	116	89	22	17	21	17	43	33	24	19

Table C.4-5. Alternative 6B Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
14541	Mainline	100		19		0.57		5.6		12		18		3.5		3.0		6.5		6.1	
14604	Mainline	79		19		0.48		4.7		12		16		3.0		2.8		5.9		4.7	
14610	Mainline	174		34		0.98		9.7		21		31		6.1		5.3		11		10	
14700	Mainline	172		42		1.0		10		25		36		6.6		6.2		13		9.9	
14705	Mainline	87		17		0.49		4.9		11		16		3.1		2.6		5.7		5.2	
14712	Mainline	65		17		0.41		4.1		9.9		14		2.6		2.4		5.1		3.6	
14729	Mainline	30		17		0.21		2.2		6.2		8.4		1.5		1.5		3.0		2.3	
14740	Mainline	170		66		1.1		11		29		39		6.8		7.0		14		13	
14748	Mainline	33		27		0.25		2.1		5.0		7.1		1.5		1.2		2.8		6.4	
14761	Mainline	62		51		0.47		3.9		9.4		13		2.8		2.3		5.2		12	
14768	Mainline	40		35		0.31		2.6		7.4		10		1.9		1.8		3.7		6.6	
14775	Mainline	49		19		0.32		3.0		8.0		11		2.0		2.0		4.0		4.1	
14776	Mainline	133		93		0.98		8.7		24		32		6.1		5.8		12		18	
14784	Mainline	53		33		0.37		3.6		10		14		2.4		2.6		5.0		5.0	
14790	Mainline	110		44		0.71		6.7		18		25		4.4		4.4		8.8		9.0	
14791	Mainline	46		33		0.34		3.0		8.6		12		2.1		2.1		4.2		5.9	
14794	Mainline	41		18		0.27		2.6		7.2		9.8		1.7		1.8		3.5		3.2	
14799	Mainline	14		6.0		0.09		0.86		2.3		3.2		0.57		0.56		1.1		1.2	
14828	Mainline	46		19		0.30		2.9		7.9		11		1.9		1.9		3.8		3.6	
14858	Mainline	103		64		0.72		7.0		21		28		4.7		5.0		9.7		9.8	
14864	Mainline	24		16		0.17		1.8		5.2		7.0		1.2		1.3		2.5		2.2	
14886	Mainline	13		1.8		0.07		0.72		1.5		2.3		0.44		0.38		0.82		0.70	
14898	Mainline	180		38		1.0		10		23		33		6.3		5.5		12		11	
14944	Mainline	77		21		0.49		4.8		12		17		3.1		2.9		6.0		4.3	
14964	Mainline	89		23		0.56		5.6		13		19		3.6		3.3		6.8		4.8	
14991	Mainline	57		13		0.32		3.2		7.0		10		2.0		1.7		3.8		3.5	
15081	Mainline	158		36		0.89		9.0		20		29		5.6		4.9		11		9.5	
15102	Mainline	40		12		0.26		2.6		6.3		8.8		1.7		1.5		3.2		2.2	
15182	Mainline	135		43		0.91		9.1		22		31		6.0		5.4		11		7.3	
15209	Mainline	57		13		0.33		3.3		7.1		10		2.0		1.8		3.8		3.4	
15290	Mainline	73		20		0.42		4.4		9.9		14		2.8		2.4		5.2		4.5	
15352	Mainline	55		15		0.32		3.3		7.5		11		2.1		1.8		4.0		3.4	
15353	Mainline	107		40		0.71		7.5		18		26		5.0		4.5		9.5		6.1	
15433	Mainline	56		16		0.33		3.4		7.9		11		2.2		1.9		4.1		3.4	
15489	Mainline	80		31		0.54		5.7		14		19		3.8		3.4		7.2		4.6	
15497	Mainline	16		5.5		0.09		1.0		2.4		3.4		0.67		0.59		1.3		0.90	
15536	Mainline	72		31		0.50		5.3		13		18		3.6		3.2		6.8		4.2	
15549	Mainline	44		16		0.27		2.9		6.8		9.7		1.9		1.7		3.6		2.6	
15552	Mainline	50		25		0.35		3.9		9.7		14		2.7		2.4		5.1		3.1	
15581	Mainline	72		30		0.46		5.1		12		17		3.4		2.9		6.3		4.0	
15586	Mainline	38		18		0.27		3.0		7.2		10		2.1		1.8		3.8		2.3	
15588	Mainline	13		6.2		0.09		0.99		2.4		3.4		0.69		0.59		1.3		0.75	
15591	Mainline	58		28		0.37		4.2		10		15		2.8		2.5		5.4		3.7	
15615	Mainline	44		21		0.31		3.4		8.3		12		2.4		2.0		4.4		2.6	
15655	Mainline	103		48		0.65		7.3		18		25		4.9		4.4		9.3		6.7	
15700	Mainline	101		45		0.67		7.4		18		26		5.0		4.5		9.6		6.1	
15749	Mainline	169		83		1.1		12		30		42		8.2		7.4		16		11	
15782	Mainline	114		61		0.73		8.5		21		30		5.8		5.2		11		7.6	

Table C.4-5. Alternative 6B Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
15785	Mainline	92		43		0.62		6.9		17		24		4.7		4.2		9.0		5.7	
15915	Mainline	42		20		0.28		3.1		7.9		11		2.1		1.9		4.1		2.6	
15954	Mainline	113		60		0.75		8.3		22		30		5.7		5.4		11		8.2	
16041	Mainline	134		86		0.91		11		27		38		7.7		6.7		14		9.0	
16042	Mainline	23		15		0.16		2.0		4.9		6.8		1.4		1.2		2.6		1.6	
16086	Mainline	83		52		0.57		6.9		17		24		4.8		4.2		9.0		5.5	
16121	Mainline	90		60		0.63		7.7		19		27		5.4		4.7		10		6.1	
16123	Mainline	71		43		0.49		5.8		14		20		4.1		3.5		7.5		4.6	
16134	Mainline	4.3		2.0		0.03		0.32		0.74		1.1		0.22		0.18		0.40		0.25	
16135	Mainline	0.82		0.41		0.01		0.06		0.14		0.21		0.04		0.04		0.08		0.05	
16152	Shoreline On	41		5.7		0.24		2.3		4.8		7.1		1.4		1.2		2.6		1.9	
16168	Mainline	27		37		0.22		3.4		9.1		12		2.6		2.2		4.8		2.6	
16185	Mainline	19		8.8		0.12		1.4		3.2		4.6		0.95		0.79		1.7		1.1	
16187	Mainline	6.5		7.2		0.05		0.73		1.8		2.6		0.55		0.45		1.0		0.53	
16199	Shoreline Off	6.8		1.4		0.04		0.38		0.83		1.2		0.24		0.20		0.44		0.38	
16237	Mainline	62		37		0.43		5.1		12		17		3.5		3.0		6.5		4.0	
16247	Mainline	117		60		0.78		8.6		23		31		5.9		5.6		11		8.3	
16254	Mainline	39		22		0.27		3.1		8.0		11		2.1		2.0		4.1		2.7	
16266	Mainline	47		34		0.33		4.1		10		15		2.8		2.6		5.4		3.5	
88574	Mainline	30		4.1		0.16		1.6		3.4		5.0		0.97		0.84		1.8		1.6	
88575	Mainline	187		48		1.2		12		28		40		7.5		6.9		14		10	
88576	Mainline	159		31		0.90		8.8		19		28		5.6		4.6		10		10	
97956	Mainline	32		41		0.26		3.9		10		14		2.9		2.5		5.4		3.0	
127416	Mainline	78		38		0.49		5.6		14		19		3.7		3.4		7.1		5.2	
127435	Mainline	5.3		5.4		0.04		0.57		1.4		2.0		0.43		0.34		0.77		0.42	
127443	Mainline	17		16		0.13		1.7		4.2		5.9		1.3		1.0		2.3		1.3	
1643216	Mainline	7.5		8.8		0.06		0.86		2.2		3.1		0.65		0.54		1.2		0.65	
1656691	Mainline	45		32		0.31		3.8		9.8		14		2.7		2.4		5.1		3.3	
1657648	Mainline	97		33		0.58		6.3		15		21		4.1		3.6		7.7		5.6	
1657653	Mainline	19		8.9		0.13		1.4		3.6		5.0		0.97		0.87		1.8		1.2	
1657654	Mainline	31		16		0.20		2.3		5.5		7.8		1.5		1.4		2.9		2.0	
1657662	Mainline	116		58		0.77		8.8		22		31		6.0		5.4		11		7.4	
1657665	Mainline	15		7.1		0.10		1.1		2.8		3.9		0.77		0.69		1.5		0.94	
1657668	Mainline	89		56		0.62		7.5		18		26		5.2		4.4		9.7		5.8	
1658094	Mainline	12		6.2		0.08		0.94		2.1		3.1		0.65		0.53		1.2		0.71	
1658097	Mainline	11		5.7		0.08		0.88		2.0		2.9		0.61		0.49		1.1		0.66	
2669480	Freight Corridor Mainline	0.00		0.00		0.00		0.00		81		81		0.00		20		20		0.00	
2669481	Freight Corridor Mainline	0.00		0.00		0.00		0.00		94		94		0.00		23		23		0.00	
2669482	Freight Corridor Mainline	0.00		0.00		0.00		0.00		54		54		0.00		13		13		0.00	
2669483	Freight Corridor Mainline	0.00		0.00		0.00		0.00		13		13		0.00		3.1		3.1		0.00	
2669486	Freight Corridor Mainline	0.00		0.00		0.00		0.00		24		24		0.00		6.0		6.0		0.00	
2669487	Freight Corridor Mainline	0.00		0.00		0.00		0.00		18		18		0.00		4.4		4.4		0.00	
2669489	Freight Corridor Mainline	0.00		0.00		0.00		0.00		48		48		0.00		12		12		0.00	
2669494	Freight Corridor Mainline	0.00		0.00		0.00		0.00		14		14		0.00		3.5		3.5		0.00	
2669495	Pico Off	0.00		0.00		0.00		0.00		4.7		4.7		0.00		1.1		1.1		0.00	
2669498	Pico On	18		41		0.16		1.1		4.5		5.6		0.76		1.1		1.9		7.5	
2669502	Harbour Scenic On	23		40		0.15		0.82		3.2		4.1		0.60		0.80		1.4		11	
2669505	Frt Off	19		35		0.13		0.72		2.9		3.6		0.52		0.71		1.2		9.2	

Table C.4-5. Alternative 6B Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
2669511	Pico On Freight Corridor	8.8		20		0.08		0.52		2.2		2.7		0.37		0.54		0.91		3.7	
2669512	Pico Off Freight Corridor	3.7		7.9		0.03		0.21		0.87		1.1		0.15		0.21		0.36		1.5	
2669523	Anaheim On	49		84		0.34		2.0		8.1		10		1.5		2.0		3.5		21	
2669524	Anaheim Off	25		39		0.15		0.81		3.1		3.9		0.61		0.77		1.4		12	
2669548	Mainline	92		13		0.50		4.9		10		15		3.0		2.6		5.6		4.8	
2669564	Mainline	85		34		0.55		5.2		14		19		3.4		3.4		6.8		7.0	
2669594	Mixed Flow Pico On	9.4		17		0.07		0.43		1.6		2.0		0.31		0.39		0.71		4.1	
2669598	Mainline	8.8		8.6		0.07		0.92		2.3		3.2		0.68		0.56		1.2		0.68	
2669599	Shoreline Off	24		4.7		0.13		1.3		2.9		4.2		0.82		0.71		1.5		1.3	
2669600	Shoreline Off	51		10		0.28		2.9		6.2		9.1		1.8		1.5		3.3		2.8	
2669601	Mainline	8.1		9.7		0.06		0.95		2.4		3.4		0.72		0.60		1.3		0.70	
2669604	Freight Corridor Mainline	0.00		0.00		0.00		0.00		8.4		8.4		0.00		2.1		2.1		0.00	
2669606	SB Frt Corr On	50		82		0.29		1.6		6.0		7.6		1.1		1.5		2.6		25	
2669608	Mainline	19		12		0.13		1.6		3.8		5.4		1.1		0.94		2.0		1.2	
2669612	Mainline	54		35		0.37		4.5		11		16		3.2		2.8		5.9		3.7	
2669619	SB Frt Corr to GP On	28		16		0.21		1.2		5.1		6.3		1.1		1.3		2.3		8.1	
2669628	Mainline	22		8.5		0.15		1.6		3.8		5.3		1.1		0.93		2.0		1.3	
2669632	Mainline	26		13		0.18		2.0		5.1		7.1		1.4		1.2		2.6		1.6	
2669643	Mainline	42		11		0.26		2.6		6.4		9.0		1.7		1.6		3.3		2.3	
2669645	Mainline	91		19		0.51		5.1		11		17		3.2		2.8		6.0		5.2	
2669651	Mainline	84		17		0.47		4.7		10		15		2.9		2.5		5.5		5.0	
2669653	Mainline	27		6.9		0.17		1.7		4.1		5.7		1.1		0.99		2.1		1.6	
2669659	Mainline	51		9.8		0.29		2.9		6.2		9.0		1.8		1.5		3.3		3.1	
2669661	Mainline	38		9.3		0.23		2.2		5.5		7.8		1.5		1.4		2.8		2.3	
2669676	Mainline	23		3.1		0.12		1.2		2.6		3.8		0.74		0.64		1.4		1.2	
2669687	Mainline	41		18		0.27		2.6		7.2		9.8		1.7		1.8		3.5		3.2	
2669689	Mainline	7.3		7.6		0.06		0.80		2.0		2.7		0.60		0.48		1.1		0.58	
2669696	NB Frt Corr Off	19		24		0.13		0.72		2.9		3.6		0.58		0.70		1.3		7.2	
2669697	Mainline	48		22		0.31		3.5		8.7		12		2.4		2.1		4.5		3.1	
2669698	Freight Corridor Mainline	6.6	6.6	11	11	0.06	0.06	1.00	1.0	2.7	2.7	3.7	3.7	0.78	0.78	0.66	0.66	1.4	1.4	0.73	0.72
2669704	Mainline	76		57		0.56		5.5		17		22		3.7		4.1		7.8		7.8	
2669712	SB MF Washinton Ramp to Frt Corr On	1.6		2.9		0.01		0.25		0.67		0.92		0.20		0.17		0.36		0.18	
2669714	Mainline	122		20		0.69		6.7		15		21		4.1		3.6		7.8		6.6	
2669749	Mainline	26		17		0.18		1.9		5.6		7.4		1.2		1.4		2.6		2.3	
2669751	Mainline	52		10		0.29		2.9		6.1		9.0		1.8		1.5		3.3		3.3	
2669759	Freight Corridor Mainline	0.00		0.00		0.00		0.00		38		38		0.00		9.4		9.4		0.00	
2669760	Patata On	3.2		5.7		0.03		0.49		1.3		1.8		0.39		0.33		0.71		0.36	
2669763	Patata Off	3.6		6.1		0.03		0.54		1.5		2.0		0.42		0.36		0.79		0.39	
2669766	SR 91 EB Off	18		44		0.22		2.3		9.8		12		1.6		2.4		4.0		3.8	
2669768	Freight Corridor Mainline	0.00		0.00		0.00		0.00		58		58		0.00		14		14		0.00	
2669769	WB SR 91 On	12		27		0.14		1.4		6.2		7.7		1.0		1.5		2.6		2.4	
2669788	Mainline	82		31		0.53		5.1		14		19		3.3		3.4		6.7		6.3	
15393	Mainline	121		33		0.71		7.2		16		23		4.7		4.0		8.6		7.7	
15412	Mainline	76		28		0.51		5.3		13		18		3.6		3.2		6.7		4.3	
16050	Mainline	199		124		1.4		17		40		57		12		9.9		21		13	
16053	Mainline	79		46		0.53		6.3		16		22		4.3		3.8		8.1		5.2	
2669484	Freight Corridor Mainline	0.00		0.00		0.00		0.00		69		69		0.00		17		17		0.00	
2669485	Freight Corridor Mainline	0.00		0.00		0.00		0.00		107		107		0.00		26		26		0.00	

Table C.4-5. Alternative 6B Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
2669488	Freight Corridor Mainline	0.00		0.00		0.00		0.00		156		156		0.00		38		38		0.00	
2669717	Freight Corridor Mainline	0	0	0	0	0.00	0.00	0.0	0.0	91	63	91	63	0.0	0.0	22.3	15.5	22	15.5	0.0	0.0
2669761	Freight Corridor Mainline	0	0	0	0	0.00	0.00	0.0	0.0	99	76	99	76	0.0	0.0	24.2	18.7	24	18.7	0.0	0.0
2669764	Freight Corridor Mainline	0.00		0.00		0.00		0.00		191		191		0.00		47		47		0.00	
88573	Mainline	151	105	36	25	0.92	0.64	9.0	6.3	22	15	31	22	5.8	4.0	5.4	3.8	11	7.8	8.8	6.1
2669553	Mainline	74	62	18	15	0.46	0.38	4.6	3.8	11	9.3	16	13	2.9	2.4	2.8	2.3	5.7	4.7	4.1	3.4
2669556	Mainline	55	56	13	14	0.34	0.34	3.3	3.4	8.1	8.3	11	12	2.1	2.1	2.0	2.0	4.1	4.2	3.2	3.2
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	34	19	68	38	0.28	0.16	1.8	0.98	7.3	4.1	9.0	5.1	1.3	0.72	1.8	1.0	3.1	1.7	14	7.6
2669699	Mainline	54	64	14	17	0.34	0.41	3.4	4.0	8.3	9.8	12	14	2.2	2.6	2.0	2.4	4.2	5.0	3.0	3.6
2669718	SB Frt Corr Off	27	22	45	37	0.30	0.25	3.6	2.9	13	11	17	14	2.7	2.2	3.3	2.7	6.0	4.9	3.7	3.1
2669748	End of Frt Corridor Mainline	52	37	84	59	0.48	0.34	7.6	5.4	22	15	29	21	6.0	4.2	5.3	3.8	11	8.0	5.7	4.0
2669750	Frt Corr NB On	34	32	68	63	0.34	0.32	5.0	4.7	16	15	21	20	3.8	3.6	3.9	3.7	7.8	7.2	4.6	4.3
2669551	Mainline	186	141	36	27	1.1	0.80	10	7.9	23	17	33	25	6.5	4.9	5.6	4.2	12	9.2	11	8.3

Table C.4-6. Alternative 6C Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
14541	Mainline	105		24		0.60		6.0		13		19		3.8		3.3		7.1		6.7	
14604	Mainline	82		24		0.50		5.1		12		18		3.3		3.1		6.4		5.1	
14610	Mainline	181		41		1.0		10		24		34		6.5		5.8		12		11	
14700	Mainline	178		51		1.1		11		27		38		7.2		6.6		14		11	
14705	Mainline	92		21		0.53		5.3		12		17		3.3		2.9		6.3		5.8	
14712	Mainline	67		22		0.43		4.4		11		15		2.9		2.6		5.5		3.9	
14729	Mainline	29		16		0.20		2.1		6.0		8.1		1.4		1.5		2.9		2.2	
14740	Mainline	167		55		1.1		10		26		36		6.4		6.4		13		12	
14748	Mainline	32		24		0.24		2.0		4.7		6.7		1.5		1.2		2.6		5.9	
14761	Mainline	59		45		0.44		3.7		8.8		13		2.7		2.2		4.9		11	
14768	Mainline	39		31		0.29		2.5		6.9		9.4		1.8		1.7		3.5		6.1	
14775	Mainline	48		16		0.30		2.9		7.3		10		1.9		1.8		3.7		3.8	
14776	Mainline	128		83		0.93		8.3		22		31		5.8		5.5		11		16	
14784	Mainline	52		30		0.36		3.5		9.9		13		2.3		2.4		4.7		4.7	
14790	Mainline	106		36		0.66		6.3		16		23		4.1		4.0		8.1		8.0	
14791	Mainline	45		30		0.33		2.9		8.1		11		2.0		2.0		4.0		5.6	
14794	Mainline	39		14		0.25		2.4		6.4		8.8		1.5		1.6		3.1		2.9	
14799	Mainline	14		4.9		0.08		0.80		2.1		2.9		0.52		0.51		1.0		1.1	
14828	Mainline	45		16		0.28		2.7		7.2		10.0		1.8		1.8		3.5		3.3	
14858	Mainline	102		59		0.70		6.8		19		26		4.5		4.8		9.3		9.3	
14864	Mainline	24		15		0.17		1.7		4.9		6.6		1.1		1.2		2.3		2.0	
14886	Mainline	14		2.0		0.08		0.76		1.7		2.4		0.46		0.41		0.87		0.76	
14898	Mainline	190		48		1.1		11		26		37		7.0		6.3		13		12	
14944	Mainline	80		26		0.51		5.2		13		18		3.4		3.1		6.5		4.6	
14964	Mainline	92		28		0.58		6.0		14		20		3.9		3.5		7.4		5.1	
14991	Mainline	61		16		0.35		3.6		8.0		12		2.3		2.0		4.3		4.0	
15081	Mainline	168		47		0.97		9.9		23		33		6.3		5.6		12		11	
15102	Mainline	41		15		0.27		2.8		6.7		9.5		1.9		1.7		3.5		2.3	
15182	Mainline	140		54		0.94		9.9		24		34		6.7		5.8		12		7.9	
15209	Mainline	61		17		0.35		3.6		8.2		12		2.3		2.0		4.3		3.9	
15290	Mainline	76		25		0.45		4.8		11		16		3.1		2.7		5.9		5.0	
15352	Mainline	58		19		0.35		3.6		8.5		12		2.4		2.1		4.5		3.8	
15353	Mainline	111		49		0.74		8.2		20		28		5.6		4.9		10		6.7	
15433	Mainline	59		21		0.36		3.8		9.0		13		2.5		2.2		4.7		3.8	
15489	Mainline	83		38		0.56		6.2		15		21		4.3		3.7		8.0		5.0	
15497	Mainline	17		7.0		0.10		1.2		2.8		3.9		0.76		0.69		1.4		1.0	
15536	Mainline	76		39		0.52		5.9		15		20		4.1		3.6		7.7		4.7	
15549	Mainline	47		20		0.29		3.3		7.9		11		2.2		1.9		4.1		2.9	
15552	Mainline	53		32		0.37		4.4		11		15		3.1		2.7		5.8		3.5	
15581	Mainline	78		39		0.51		5.9		14		20		4.0		3.4		7.4		4.7	
15586	Mainline	40		23		0.29		3.3		8.1		11		2.4		2.0		4.4		2.5	
15588	Mainline	13		7.8		0.10		1.1		2.7		3.8		0.79		0.67		1.5		0.85	
15591	Mainline	62		34		0.40		4.7		12		17		3.2		3.0		6.1		4.2	
15615	Mainline	46		27		0.33		3.8		9.3		13		2.7		2.3		5.0		2.9	
15655	Mainline	111		58		0.71		8.1		21		29		5.5		5.1		11		7.7	
15700	Mainline	106		59		0.72		8.4		21		30		5.8		5.2		11		6.9	
15749	Mainline	181		101		1.2		14		35		48		9.2		8.6		18		13	
15782	Mainline	124		75		0.81		9.6		25		34		6.5		6.0		13		8.8	

Table C.4-6. Alternative 6C Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
15785	Mainline	97		57		0.66		7.9		20		28		5.5		4.9		10		6.5	
15915	Mainline	45		26		0.31		3.6		9.2		13		2.5		2.3		4.8		3.1	
15954	Mainline	120		71		0.81		9.1		24		33		6.2		6.0		12		9.1	
16041	Mainline	152		125		1.1		14		36		50		10		8.9		19		12	
16042	Mainline	25		18		0.18		2.2		5.6		7.8		1.5		1.4		2.9		1.8	
16086	Mainline	87		62		0.62		7.7		19		27		5.4		4.8		10		6.1	
16121	Mainline	95		72		0.68		8.6		22		31		6.1		5.4		11		6.9	
16123	Mainline	80		61		0.57		7.2		18		26		5.1		4.5		9.6		5.8	
16134	Mainline	5.1		3.5		0.04		0.44		1.1		1.5		0.31		0.27		0.58		0.35	
16135	Mainline	1.0		0.76		0.01		0.09		0.22		0.32		0.07		0.05		0.12		0.07	
16152	Shoreline On	41		6.1		0.24		2.3		4.9		7.2		1.4		1.2		2.6		1.9	
16168	Mainline	27		36		0.22		3.3		8.9		12		2.5		2.2		4.7		2.6	
16185	Mainline	22		15		0.15		1.9		4.7		6.7		1.4		1.2		2.5		1.5	
16187	Mainline	7.8		8.7		0.06		0.88		2.2		3.1		0.66		0.55		1.2		0.65	
16199	Shoreline Off	6.8		1.5		0.04		0.39		0.87		1.3		0.25		0.21		0.46		0.38	
16237	Mainline	67		44		0.46		5.7		14		20		4.0		3.4		7.4		4.5	
16247	Mainline	126		81		0.87		10		27		37		6.9		6.6		14		9.9	
16254	Mainline	43		30		0.30		3.6		9.8		13		2.6		2.4		4.9		3.2	
16266	Mainline	52		41		0.37		4.6		12		17		3.2		3.0		6.3		4.1	
88574	Mainline	31		4.5		0.17		1.7		3.7		5.4		1.0		0.90		1.9		1.7	
88575	Mainline	192		60		1.2		13		30		43		8.2		7.4		16		11	
88576	Mainline	168		39		0.96		9.6		21		31		6.2		5.2		11		11	
97956	Mainline	32		40		0.26		3.8		10		14		2.9		2.5		5.4		2.9	
127416	Mainline	84		47		0.54		6.2		16		22		4.2		3.9		8.1		6.0	
127435	Mainline	8.5		11		0.07		1.0		2.6		3.6		0.77		0.64		1.4		0.75	
127443	Mainline	24		28		0.19		2.8		7.0		9.8		2.1		1.7		3.9		2.1	
1643216	Mainline	12		18		0.11		1.5		4.5		6.0		1.1		1.1		2.2		1.3	
1656691	Mainline	49		39		0.35		4.3		12		16		3.0		2.8		5.9		3.9	
1657648	Mainline	104		42		0.64		7.1		17		24		4.7		4.2		8.9		6.4	
1657653	Mainline	20		12		0.14		1.6		4.2		5.8		1.1		1.0		2.2		1.4	
1657654	Mainline	33		19		0.21		2.5		6.4		8.9		1.7		1.6		3.3		2.3	
1657662	Mainline	125		78		0.86		10		26		36		7.1		6.4		14		8.8	
1657665	Mainline	16		9.4		0.11		1.3		3.3		4.6		0.89		0.81		1.7		1.1	
1657668	Mainline	100		80		0.72		9.3		24		33		6.7		5.8		12		7.3	
1658094	Mainline	15		11		0.11		1.4		3.4		4.7		0.99		0.82		1.8		1.0	
1658097	Mainline	14		11		0.10		1.3		3.1		4.4		0.92		0.77		1.7		0.98	
2669480	Freight Corridor Mainline	0.00		0.00		0.00		0.00		64		64		0.00		16		16		0.00	
2669481	Freight Corridor Mainline	0.00		0.00		0.00		0.00		67		67		0.00		16		16		0.00	
2669482	Freight Corridor Mainline	0.00		0.00		0.00		0.00		40		40		0.00		9.8		9.8		0.00	
2669483	Freight Corridor Mainline	0.00		0.00		0.00		0.00		9.2		9.2		0.00		2.3		2.3		0.00	
2669486	Freight Corridor Mainline	0.00		0.00		0.00		0.00		16		16		0.00		4.0		4.0		0.00	
2669487	Freight Corridor Mainline	0.00		0.00		0.00		0.00		11		11		0.00		2.8		2.8		0.00	
2669489	Freight Corridor Mainline	0.00		0.00		0.00		0.00		40		40		0.00		9.9		9.9		0.00	
2669494	Freight Corridor Mainline	0.00		0.00		0.00		0.00		11		11		0.00		2.8		2.8		0.00	
2669495	Pico Off	0.00		0.00		0.00		0.00		3.1		3.1		0.00		0.77		0.77		0.00	
2669498	Pico On	11		29		0.12		0.84		3.6		4.5		0.59		0.90		1.5		4.3	
2669502	Harbour Scenic On	14		24		0.09		0.50		2.0		2.5		0.36		0.48		0.84		6.6	
2669505	Frt Off	6.3		16		0.06		0.43		1.9		2.3		0.31		0.46		0.76		2.5	

Table C.4-6. Alternative 6C Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
2669511	Pico On Freight Corridor	5.5		14		0.06		0.41		1.8		2.2		0.29		0.44		0.73		2.1	
2669512	Pico Off Freight Corridor	1.3		4.0		0.02		0.13		0.59		0.71		0.09		0.14		0.23		0.44	
2669523	Anaheim On	34		66		0.28		1.7		7.0		8.8		1.3		1.7		3.0		14	
2669524	Anaheim Off	18		30		0.12		0.65		2.6		3.2		0.49		0.63		1.1		8.2	
2669548	Mainline	96		14		0.53		5.2		11		17		3.2		2.8		6.0		5.3	
2669564	Mainline	82		28		0.51		4.9		13		18		3.2		3.1		6.3		6.2	
2669594	Mixed Flow Pico On	5.1		11		0.05		0.34		1.3		1.6		0.24		0.32		0.56		1.9	
2669598	Mainline	10		10		0.08		1.1		2.7		3.8		0.80		0.66		1.5		0.80	
2669599	Shoreline Off	24		5.4		0.13		1.4		3.0		4.4		0.87		0.75		1.6		1.3	
2669600	Shoreline Off	51		12		0.29		3.0		6.5		9.5		1.9		1.6		3.5		2.9	
2669601	Mainline	10.0		12		0.08		1.2		3.0		4.2		0.87		0.74		1.6		0.88	
2669604	Freight Corridor Mainline	0.00		0.00		0.00		0.00		6.3		6.3		0.00		1.5		1.5		0.00	
2669606	SB Frt Corr On	31		54		0.20		1.1		4.3		5.3		0.79		1.0		1.8		15	
2669608	Mainline	20		14		0.14		1.8		4.4		6.2		1.2		1.1		2.3		1.4	
2669612	Mainline	58		42		0.41		5.1		13		18		3.5		3.2		6.7		4.3	
2669619	SB Frt Corr to GP On	20		13		0.15		0.90		3.9		4.8		0.80		0.96		1.8		5.4	
2669628	Mainline	23		11		0.16		1.7		4.2		5.9		1.2		1.0		2.2		1.4	
2669632	Mainline	27		16		0.19		2.3		5.7		8.0		1.6		1.4		3.0		1.8	
2669643	Mainline	43		14		0.27		2.8		6.9		9.7		1.9		1.7		3.5		2.5	
2669645	Mainline	96		23		0.55		5.5		13		18		3.5		3.2		6.6		5.8	
2669651	Mainline	88		21		0.51		5.1		12		17		3.3		2.8		6.1		5.5	
2669653	Mainline	28		8.6		0.17		1.8		4.4		6.1		1.2		1.1		2.2		1.7	
2669659	Mainline	54		12		0.31		3.1		6.9		9.9		1.9		1.7		3.6		3.4	
2669661	Mainline	39		11		0.24		2.4		5.9		8.4		1.6		1.5		3.0		2.4	
2669676	Mainline	24		3.4		0.13		1.3		2.8		4.1		0.78		0.69		1.5		1.3	
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	24	13	52	29	0.22	0.12	1.4	0.79	5.9	3.3	7.3	4.1	1.0	0.57	1.4	0.81	2.5	1.4	9.3	5.2
2669687	Mainline	39		14		0.25		2.4		6.4		8.8		1.5		1.6		3.1		2.9	
2669689	Mainline	12		15		0.09		1.4		3.7		5.2		1.1		0.92		2.0		1.1	
2669696	NB Frt Corr Off	23		37		0.18		1.1		4.5		5.6		0.84		1.1		2.0		8.1	
2669697	Mainline	51		29		0.34		4.0		10		14		2.7		2.5		5.2		3.5	
2669698	Freight Corridor Mainline	5.3	5.3	9.3	9.2	0.05	0.05	0.81	0.80	2.2	2.2	3.0	3.0	0.64	0.63	0.54	0.53	1.2	1.2	0.59	0.59
2669704	Mainline	75		52		0.54		5.3		16		21		3.6		3.9		7.4		7.3	
2669712	SB MF Washinton Ramp to Frt Corr On	1.3		2.3		0.01		0.20		0.55		0.75		0.16		0.13		0.29		0.15	
2669714	Mainline	128		24		0.74		7.2		16		24		4.4		4.0		8.5		7.1	
2669718	SB Frt Corr Off	22	18	34	28	0.22	0.18	3.0	2.5	9.7	8.0	13	11	2.4	1.9	2.4	2.0	4.7	3.9	2.5	2.1
2669749	Mainline	25		16		0.18		1.8		5.2		7.0		1.2		1.3		2.5		2.2	
2669751	Mainline	55		13		0.31		3.1		6.9		10		2.0		1.7		3.7		3.7	
2669759	Freight Corridor Mainline	0.00		0.00		0.00		0.00		28		28		0.00		7.0		7.0		0.00	
2669760	Patata On	2.3		4.0		0.02		0.34		0.93		1.3		0.27		0.23		0.50		0.25	
2669763	Patata Off	3.2		5.4		0.03		0.48		1.3		1.8		0.38		0.32		0.70		0.35	
2669766	SR 91 EB Off	11		27		0.13		1.4		5.9		7.3		0.98		1.4		2.4		2.3	
2669768	Freight Corridor Mainline	0.00		0.00		0.00		0.00		42.8		42.8		0.00		10.5		10.5		0.00	
2669769	WB SR 91 On	8.7		20		0.11		1.1		4.7		5.7		0.77		1.1		1.9		1.8	
2669788	Mainline	81		26		0.50		4.8		13		17		3.1		3.1		6.2		5.8	
15393	Mainline	128		41		0.76		7.9		18		26		5.2		4.5		9.6		8.7	
15412	Mainline	79		35		0.53		5.8		14		20		4.0		3.5		7.4		4.7	
16050	Mainline	214		147		1.5		18		46		65		13		11		24		15	
16053	Mainline	87		64		0.61		7.5		20		27		5.3		4.8		10		6.4	

Table C.4-6. Alternative 6C Criteria Pollutant Mass Emissions Based on Post Processed Traffic for the I-710 Freeway

Link ID	Segment Description	Daily Mass Emissions (lb/day)																			
		CO		NO _x		SO ₂		PM ₁₀ (Exhaust)		PM ₁₀ (Entrained)		PM ₁₀ (Total)		PM _{2.5} (Exhaust)		PM _{2.5} (Entrained)		PM _{2.5} (Total)		ROG	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
2669484	Freight Corridor Mainline	0.00		0.00		0.00		0.00		50.8		50.8		0.00		12.5		12.5		0.00	
2669485	Freight Corridor Mainline	0.00		0.00		0.00		0.00		76.7		76.7		0.00		18.8		18.8		0.00	
2669488	Freight Corridor Mainline	0.00		0.00		0.00		0.00		115.2		115.2		0.00		28.3		28.3		0.00	
2669717	Freight Corridor Mainline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.8	47.2	67.8	47.2	0.00	0.00	16.7	11.6	16.7	11.6	0.00	0.00
2669761	Freight Corridor Mainline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.4	62.9	81.4	62.9	0.00	0.00	20.0	15.4	20.0	15.4	0.00	0.00
2669764	Freight Corridor Mainline	0.00		0.00		0.00		0.00		158.4		158.4		0.00		38.9		38.9		0.00	
88573	Mainline	156	109	44	31	0.96	0.67	9.6	6.7	24	16	33	23	6.3	4.4	5.8	4.0	12	8.4	9.5	6.6
2669553	Mainline	76	63	21	17	0.47	0.39	4.8	4.0	12	9.7	16	14	3.1	2.5	2.9	2.4	5.9	4.9	4.3	3.6
2669556	Mainline	56	58	15	15	0.35	0.35	3.4	3.5	8.4	8.6	12	12	2.2	2.3	2.1	2.1	4.3	4.4	3.3	3.4
2669699	Mainline	56	66	16	19	0.35	0.41	3.5	4.2	8.6	10	12	14	2.3	2.7	2.1	2.5	4.4	5.2	3.2	3.8
2669748	End of Frt Corridor Mainline	43	30	70	49	0.39	0.28	6.3	4.4	18	13	24	17	4.9	3.5	4.4	3.1	9.3	6.6	4.7	3.3
2669750	Frt Corr NB On	30	28	57	53	0.29	0.27	4.6	4.2	13	12	18	17	3.5	3.3	3.3	3.0	6.8	6.3	3.7	3.4
2669551	Mainline	194	147	44	33	1.1	0.84	11	8.4	25	19	36	28	7.0	5.3	6.2	4.7	13	10	12	9.1

Table C.5-1. 2008 Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)										
		Catalytic Exhaust	Non-Catalytic Exhaust	Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter
				Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	
14541	Florence OFF and Florence ON	8.57	5.91	1.1E-02	1.1E-02	2.3E-02	5.8E-02	1.3E-01	1.8E-01	2.1E-01	2.0E-01	4.5E-02	4.9E-02	10
14604	Florence ON and Florence OFF	9.14	5.73	1.2E-02	1.1E-02	2.5E-02	5.6E-02	1.4E-01	1.7E-01	2.2E-01	1.9E-01	4.8E-02	4.8E-02	15
14610	Florence ON and Firestone OFF	10.34	6.56	1.3E-02	1.2E-02	2.8E-02	6.4E-02	1.6E-01	2.0E-01	2.5E-01	2.2E-01	5.5E-02	5.5E-02	10
14620	Third Off and SR60 ON	3.33	2.20	4.3E-03	4.1E-03	9.0E-03	2.2E-02	5.1E-02	6.6E-02	8.0E-02	7.5E-02	1.8E-02	1.8E-02	1.2
14698	3rd / Ford ON and 3rd / Ford Off	0.20	0.13	2.6E-04	2.5E-04	5.4E-04	1.3E-03	3.1E-03	4.0E-03	4.8E-03	4.5E-03	1.1E-03	1.1E-03	0.27
14700	Florence OFF and Firestone ON	12.25	7.17	1.6E-02	1.3E-02	3.3E-02	7.0E-02	1.9E-01	2.2E-01	2.9E-01	2.4E-01	6.5E-02	6.0E-02	17
14705	Firestone OFF and Firestone ON	9.34	6.26	1.2E-02	1.2E-02	2.5E-02	6.1E-02	1.4E-01	1.9E-01	2.2E-01	2.1E-01	4.9E-02	5.2E-02	11
14712	Firestone ON and Firestone OFF	8.66	5.55	1.1E-02	1.0E-02	2.3E-02	5.4E-02	1.3E-01	1.7E-01	2.1E-01	1.9E-01	4.6E-02	4.6E-02	16
14729	3rd / Ford Off and SR60 Off	1.89	1.21	2.4E-03	2.2E-03	5.1E-03	1.2E-02	2.9E-02	3.6E-02	4.5E-02	4.1E-02	1.0E-02	1.0E-02	2.2
14740	SR60 ON and EasternWhittierOlympic OFF	3.39	2.15	4.4E-03	4.0E-03	9.2E-03	2.1E-02	5.2E-02	6.5E-02	8.1E-02	7.3E-02	1.8E-02	1.8E-02	1.4
14748	Olympic Off and NB i5 Off	3.09	1.80	4.0E-03	3.3E-03	8.4E-03	1.8E-02	4.7E-02	5.4E-02	7.4E-02	6.1E-02	1.6E-02	1.5E-02	3.0
14761	NB i5 Off and Washington ON	10.06	5.71	1.3E-02	1.1E-02	2.7E-02	5.6E-02	1.5E-01	1.7E-01	2.4E-01	1.9E-01	5.3E-02	4.8E-02	8.1
14765	SB i5 ON and Washington Off	6.00	3.91	7.7E-03	7.2E-03	1.6E-02	3.8E-02	9.2E-02	1.2E-01	1.4E-01	1.3E-01	3.2E-02	3.3E-02	2.8
14768	NB i5 ON and Olympic Off	2.81	1.74	3.6E-03	3.2E-03	7.6E-03	1.7E-02	4.3E-02	5.2E-02	6.7E-02	5.9E-02	1.5E-02	1.4E-02	3.3
14772	Washington Off and Washington ON	4.54	3.05	5.8E-03	5.6E-03	1.2E-02	3.0E-02	6.9E-02	9.2E-02	1.1E-01	1.0E-01	2.4E-02	2.5E-02	1.9
14775	EasternWhittierOlympic OFF and SB i5 Off	4.85	3.02	6.2E-03	5.6E-03	1.3E-02	3.0E-02	7.4E-02	9.1E-02	1.2E-01	1.0E-01	2.6E-02	2.5E-02	1.9
14776	SR60 Off and Olympic ON	5.28	3.22	6.8E-03	5.9E-03	1.4E-02	3.1E-02	8.1E-02	9.7E-02	1.3E-01	1.1E-01	2.8E-02	2.7E-02	4.8
14784	Washington ON and Washington OFF	4.13	2.64	5.3E-03	4.9E-03	1.1E-02	2.6E-02	6.3E-02	7.9E-02	9.9E-02	8.9E-02	2.2E-02	2.2E-02	3.6
14790	Washington ON and Bandini/Atlantic OFF	2.79	1.81	3.6E-03	3.3E-03	7.6E-03	1.8E-02	4.3E-02	5.5E-02	6.7E-02	6.1E-02	1.5E-02	1.5E-02	1.3
14791	Olympic ON and NB i5 ON	3.11	1.81	4.0E-03	3.3E-03	8.4E-03	1.8E-02	4.8E-02	5.4E-02	7.4E-02	6.1E-02	1.6E-02	1.5E-02	2.8
14794	Eastern ON and SB i5 ON	5.40	3.31	6.9E-03	6.1E-03	1.5E-02	3.2E-02	8.3E-02	9.9E-02	1.3E-01	1.1E-01	2.9E-02	2.8E-02	1.9
14799	SB i5 Off and Eastern ON	1.11	0.72	1.4E-03	1.3E-03	3.0E-03	7.0E-03	1.7E-02	2.2E-02	2.7E-02	2.4E-02	5.9E-03	6.0E-03	0.46
14817	Washington OFF and Atlantic/Bandini ON	4.02	2.47	5.2E-03	4.5E-03	1.1E-02	2.4E-02	6.2E-02	7.4E-02	9.6E-02	8.4E-02	2.1E-02	2.1E-02	3.4
14828	Bandini/Atlantic OFF and WB Atlantic ON	5.78	3.75	7.4E-03	6.9E-03	1.6E-02	3.7E-02	8.8E-02	1.1E-01	1.4E-01	1.3E-01	3.1E-02	3.1E-02	2.7
14858	Atlantic/Bandini ON and WB Atlantic OFF	2.71	1.78	3.5E-03	3.3E-03	7.3E-03	1.7E-02	4.1E-02	5.3E-02	6.5E-02	6.0E-02	1.4E-02	1.5E-02	2.7
14864	WB Atlantic OFF and EB Atlantic OFF	5.65	3.42	7.3E-03	6.3E-03	1.5E-02	3.3E-02	8.6E-02	1.0E-01	1.4E-01	1.2E-01	3.0E-02	2.8E-02	7.0
14886	WB Atlantic ON and EB Atlantic ON	2.73	1.72	3.5E-03	3.2E-03	7.4E-03	1.7E-02	4.2E-02	5.2E-02	6.5E-02	5.8E-02	1.4E-02	1.4E-02	2.7
14898	Wright Rd OFF and Imperial OFF	10.69	7.04	1.4E-02	1.3E-02	2.9E-02	6.9E-02	1.6E-01	2.1E-01	2.6E-01	2.4E-01	5.6E-02	5.9E-02	12
14944	Imperial ON and Imperial OFF	9.11	5.99	1.2E-02	1.1E-02	2.5E-02	5.8E-02	1.4E-01	1.8E-01	2.2E-01	2.0E-01	4.8E-02	5.0E-02	17
14964	Imperial OFF and EBnWb 105 ON	3.97	2.62	5.1E-03	4.8E-03	1.1E-02	2.6E-02	6.1E-02	7.9E-02	9.5E-02	8.9E-02	2.1E-02	2.2E-02	6.6
14970	Imperial ON and MLK OFF	1.23	0.84	1.6E-03	1.6E-03	3.3E-03	8.2E-03	1.9E-02	2.5E-02	3.0E-02	2.9E-02	6.5E-03	7.0E-03	1.3
14973	MLK OFF and 105 OFF	2.53	1.77	3.3E-03	3.2E-03	6.9E-03	1.7E-02	3.9E-02	5.3E-02	6.1E-02	6.0E-02	1.3E-02	1.5E-02	3.0
14991	105 OFF and Rosecrans OFF	2.49	1.81	3.2E-03	3.3E-03	6.7E-03	1.8E-02	3.8E-02	5.4E-02	6.0E-02	6.1E-02	1.3E-02	1.5E-02	4.1
15081	Rosecrans OFF and MLK ON	8.24	5.99	1.1E-02	1.1E-02	2.2E-02	5.8E-02	1.3E-01	1.8E-01	2.0E-01	2.0E-01	4.4E-02	5.0E-02	14.69
15102	EBnWb 105 ON and Rosecrans ON	2.42	1.71	3.1E-03	3.1E-03	6.5E-03	1.7E-02	3.7E-02	5.1E-02	5.8E-02	5.8E-02	1.3E-02	1.4E-02	6.5
15182	Rosecrans ON and EBnWb 105/Garfield OFF	8.10	5.86	1.0E-02	1.1E-02	2.2E-02	5.7E-02	1.2E-01	1.8E-01	1.9E-01	2.0E-01	4.3E-02	4.9E-02	24
15209	MLK ON and 105 ON	2.34	1.69	3.0E-03	3.1E-03	6.3E-03	1.6E-02	3.6E-02	5.1E-02	5.6E-02	5.7E-02	1.2E-02	1.4E-02	3.9
15290	105 ON and WB Rosecrans ON	4.70	3.27	6.0E-03	6.0E-03	1.3E-02	3.2E-02	7.2E-02	9.8E-02	1.1E-01	1.1E-01	2.5E-02	2.7E-02	7.0
15352	WB Rosecrans ON and EB Rosecrans ON	4.13	2.87	5.3E-03	5.3E-03	1.1E-02	2.8E-02	6.3E-02	8.6E-02	9.9E-02	9.7E-02	2.2E-02	2.4E-02	6.1
15353	WB Rosecrans ON and EB Rosecrans ON	4.51	3.23	5.8E-03	5.9E-03	1.2E-02	3.2E-02	6.9E-02	9.7E-02	1.1E-01	1.1E-01	2.4E-02	2.7E-02	12
15393	EBnWb 105/Garfield OFF and Rosecrans OFF	4.23	2.88	5.4E-03	5.3E-03	1.1E-02	2.8E-02	6.5E-02	8.7E-02	1.0E-01	9.7E-02	2.2E-02	2.4E-02	6.0
15412	EB Rosecrans ON and WB Alondra OFF	6.00	4.23	7.7E-03	7.8E-03	1.6E-02	4.1E-02	9.2E-02	1.3E-01	1.4E-01	1.4E-01	3.2E-02	3.5E-02	14
15433	Rosecrans OFF and Alondra ON	2.94	1.95	3.8E-03	3.6E-03	7.9E-03	1.9E-02	4.5E-02	5.9E-02	7.0E-02	6.6E-02	1.6E-02	1.6E-02	4.2
15489	Rosecrans OFF and Alondra ON	6.31	4.39	8.1E-03	8.1E-03	1.7E-02	4.3E-02	9.7E-02	1.3E-01	1.5E-01	1.5E-01	3.3E-02	3.7E-02	16
15497	WB Alondra OFF and EB Alondra OFF	1.87	1.28	2.4E-03	2.4E-03	5.1E-03	1.2E-02	2.9E-02	3.8E-02	4.5E-02	4.3E-02	9.9E-03	1.1E-02	2.8

Table C.5-1. 2008 Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)										
		Catalytic Exhaust	Non-Catalytic Exhaust	Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter
				Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	
15536	Alondra ON and Alondra OFF	2.51	1.76	3.2E-03	3.2E-03	6.8E-03	1.7E-02	3.8E-02	5.3E-02	6.0E-02	6.0E-02	1.3E-02	1.5E-02	5.7
15549	Alondra ON and EB 91/Atlantic/Artesia OFF	3.70	2.62	4.7E-03	4.8E-03	1.0E-02	2.6E-02	5.7E-02	7.9E-02	8.9E-02	8.9E-02	2.0E-02	2.2E-02	7.4
15552	Alondra OFF and WB 91/Atlantic ON	3.03	1.97	3.9E-03	3.6E-03	8.2E-03	1.9E-02	4.6E-02	5.9E-02	7.3E-02	6.7E-02	1.6E-02	1.6E-02	7.4
15581	EB 91/Atlantic/Artesia OFF and WB 91 OFF	3.69	2.47	4.7E-03	4.5E-03	1.0E-02	2.4E-02	5.6E-02	7.4E-02	8.8E-02	8.3E-02	1.9E-02	2.1E-02	9.5
15586	WB 91/Atlantic ON and EB 91 ON	2.64	1.71	3.4E-03	3.2E-03	7.1E-03	1.7E-02	4.0E-02	5.2E-02	6.3E-02	5.8E-02	1.4E-02	1.4E-02	8.9
15588	WB 91 OFF and WB 91 ON	0.59	0.40	7.5E-04	7.4E-04	1.6E-03	3.9E-03	9.0E-03	1.2E-02	1.4E-02	1.4E-02	3.1E-03	3.4E-03	1.9
15591	EB 91 ON and WB 91 OFF	1.82	1.18	2.3E-03	2.2E-03	4.9E-03	1.2E-02	2.8E-02	3.6E-02	4.4E-02	4.0E-02	9.6E-03	9.9E-03	4.0
15615	WB 91 OFF and Artesia/EB 91 OFF	2.03	1.39	2.6E-03	2.6E-03	5.5E-03	1.4E-02	3.1E-02	4.2E-02	4.9E-02	4.7E-02	1.1E-02	1.2E-02	6.4
15655	WB 91 ON and EB 91 & Artesia ON	2.28	1.51	2.9E-03	2.8E-03	6.2E-03	1.5E-02	3.5E-02	4.5E-02	5.5E-02	5.1E-02	1.2E-02	1.3E-02	4.6
15696	WB 91 OFF and Artesia/EB 91 OFF	5.87	3.77	7.5E-03	6.9E-03	1.6E-02	3.7E-02	9.0E-02	1.1E-01	1.4E-01	1.3E-01	3.1E-02	3.1E-02	13
15700	EB 91 & Artesia ON and NB LB OFF	4.01	2.73	5.1E-03	5.0E-03	1.1E-02	2.7E-02	6.1E-02	8.2E-02	9.6E-02	9.3E-02	2.1E-02	2.3E-02	12
15749	SB LB OFF and LB ON	7.32	4.60	9.4E-03	8.5E-03	2.0E-02	4.5E-02	1.1E-01	1.4E-01	1.8E-01	1.6E-01	3.9E-02	3.8E-02	14
15782	Artesia/EB 91 OFF and LB Blvd ON	2.35	1.55	3.0E-03	2.9E-03	6.4E-03	1.5E-02	3.6E-02	4.7E-02	5.6E-02	5.3E-02	1.2E-02	1.3E-02	5.7
15785	LB ON and Del Amo OFF	5.23	3.53	6.7E-03	6.5E-03	1.4E-02	3.4E-02	8.0E-02	1.1E-01	1.3E-01	1.2E-01	2.8E-02	2.9E-02	17
15915	Del Amo OFF and Del Amo ON	5.92	3.88	7.6E-03	7.1E-03	1.6E-02	3.8E-02	9.1E-02	1.2E-01	1.4E-01	1.3E-01	3.1E-02	3.2E-02	17
15954	LB Blvd ON and LB Blvd OFF	10.82	6.73	1.4E-02	1.2E-02	2.9E-02	6.6E-02	1.7E-01	2.0E-01	2.6E-01	2.3E-01	5.7E-02	5.6E-02	21
16041	LB Blvd OFF and WB Del Amo ON	3.49	2.42	4.5E-03	4.4E-03	9.4E-03	2.4E-02	5.3E-02	7.3E-02	8.4E-02	8.2E-02	1.8E-02	2.0E-02	20
16042	Del Amo ON and 405 OFF	1.64	1.03	2.1E-03	1.9E-03	4.4E-03	1.0E-02	2.5E-02	3.1E-02	3.9E-02	3.5E-02	8.7E-03	8.6E-03	4.4
16050	OFF	10.31	6.19	1.3E-02	1.1E-02	2.8E-02	6.0E-02	1.6E-01	1.9E-01	2.5E-01	2.1E-01	5.5E-02	5.2E-02	23
16053	EB 405 ON and WB 405 ON	10.91	7.16	1.4E-02	1.3E-02	3.0E-02	7.0E-02	1.7E-01	2.2E-01	2.6E-01	2.4E-01	5.8E-02	6.0E-02	35
16063	WB 405 ON and WB Willow OFF	1.84	1.15	2.4E-03	2.1E-03	5.0E-03	1.1E-02	2.8E-02	3.4E-02	4.4E-02	3.9E-02	9.7E-03	9.6E-03	6.5
16073	WB 405 ON and WB Willow OFF	2.18	1.33	2.8E-03	2.4E-03	5.9E-03	1.3E-02	3.3E-02	4.0E-02	5.2E-02	4.5E-02	1.1E-02	1.1E-02	5.2
16086	405/Wardlow/Pacific OFF and WB Willow ON	5.99	3.73	7.7E-03	6.9E-03	1.6E-02	3.6E-02	9.2E-02	1.1E-01	1.4E-01	1.3E-01	3.2E-02	3.1E-02	15
16121	405/Wardlow/Pacific OFF and WB Willow ON	1.81	1.10	2.3E-03	2.0E-03	4.9E-03	1.1E-02	2.8E-02	3.3E-02	4.3E-02	3.7E-02	9.6E-03	9.2E-03	4.2
16123	EB Willow ON and EB Willow OFF	5.30	3.30	6.8E-03	6.1E-03	1.4E-02	3.2E-02	8.1E-02	9.9E-02	1.3E-01	1.1E-01	2.8E-02	2.7E-02	18
16134	WB Willow OFF and WB Willow ON	0.63	0.44	8.1E-04	8.1E-04	1.7E-03	4.3E-03	9.7E-03	1.3E-02	1.5E-02	1.5E-02	3.3E-03	3.7E-03	2.2
16135	EB Willow ON and PCH OFF	0.04	0.03	5.5E-05	5.4E-05	1.2E-04	2.9E-04	6.6E-04	8.9E-04	1.0E-03	1.0E-03	2.3E-04	2.5E-04	0.15
16152	WB Willow ON and EB Willow OFF	1.70	1.16	2.2E-03	2.1E-03	4.6E-03	1.1E-02	2.6E-02	3.5E-02	4.1E-02	3.9E-02	9.0E-03	9.7E-03	1.2
16157	EB Willow OFF and WB PCH ON	0.99	0.66	1.3E-03	1.2E-03	2.7E-03	6.4E-03	1.5E-02	2.0E-02	2.4E-02	2.2E-02	5.3E-03	5.5E-03	3.4
16168	PCH OFF and WB Anaheim ON	0.82	0.54	1.1E-03	9.9E-04	2.2E-03	5.3E-03	1.3E-02	1.6E-02	2.0E-02	1.8E-02	4.3E-03	4.5E-03	1.9
16174	EB Anaheim ON and Shoreline Dr ON	0.76	0.50	9.7E-04	9.1E-04	2.0E-03	4.8E-03	1.2E-02	1.5E-02	1.8E-02	1.7E-02	4.0E-03	4.1E-03	1.7
16185	Shoreline Dr ON	1.03	0.65	1.3E-03	1.2E-03	2.8E-03	6.3E-03	1.6E-02	2.0E-02	2.5E-02	2.2E-02	5.5E-03	5.4E-03	3.8
16187	EB PCH ON and PCH OFF	1.18	0.75	1.5E-03	1.4E-03	3.2E-03	7.3E-03	1.8E-02	2.2E-02	2.8E-02	2.5E-02	6.2E-03	6.2E-03	2.9
16237	WB Anaheim OFF and WB Anaheim ON	3.08	2.02	4.0E-03	3.7E-03	8.3E-03	2.0E-02	4.7E-02	6.1E-02	7.4E-02	6.8E-02	1.6E-02	1.7E-02	8.7
16247	WB Anaheim ON and EB Anaheim OFF	7.91	5.14	1.0E-02	9.5E-03	2.1E-02	5.0E-02	1.2E-01	1.5E-01	1.9E-01	1.7E-01	4.2E-02	4.3E-02	22
16254	WB PCH OFF and EB PCH ON	0.76	0.51	9.8E-04	9.4E-04	2.1E-03	5.0E-03	1.2E-02	1.5E-02	1.8E-02	1.7E-02	4.0E-03	4.3E-03	2.7
16266	PCH ON and WB Anaheim OFF	1.71	1.20	2.2E-03	2.2E-03	4.6E-03	1.2E-02	2.6E-02	3.6E-02	4.1E-02	4.0E-02	9.1E-03	1.0E-02	7.0
88573	PCH OFF and PCH ON	35.08	20.29	4.5E-02	3.7E-02	9.5E-02	2.0E-01	5.4E-01	6.1E-01	8.4E-01	6.9E-01	1.9E-01	1.7E-01	45
88574	EB Del Amo OFF and EB 405 ON	22.16	13.95	2.8E-02	2.6E-02	6.0E-02	1.4E-01	3.4E-01	4.2E-01	5.3E-01	4.7E-01	1.2E-01	1.2E-01	21
88575	EB 405 ON and Wardlow/WB 405 ON	13.14	8.06	1.7E-02	1.5E-02	3.6E-02	7.9E-02	2.0E-01	2.4E-01	3.1E-01	2.7E-01	6.9E-02	6.7E-02	20
88576	405 OFF and EB 405 ON	11.40	7.26	1.5E-02	1.3E-02	3.1E-02	7.1E-02	1.7E-01	2.2E-01	2.7E-01	2.5E-01	6.0E-02	6.0E-02	12
97956	EB Atlantic OFF and Florence ON	1.09	0.81	1.4E-03	1.5E-03	2.9E-03	8.0E-03	1.7E-02	2.4E-02	2.6E-02	2.8E-02	5.7E-03	6.8E-03	7.4
127416	EB Atlantic OFF and Florence ON	0.87	0.59	1.1E-03	1.1E-03	2.4E-03	5.7E-03	1.3E-02	1.8E-02	2.1E-02	2.0E-02	4.6E-03	4.9E-03	1.9
127435	EB Atlantic ON and Florence OFF	0.32	0.24	4.2E-04	4.5E-04	8.8E-04	2.4E-03	5.0E-03	7.3E-03	7.8E-03	8.3E-03	1.7E-03	2.0E-03	4.4
127443	EB Atlantic ON and Florence OFF	0.86	0.65	1.1E-03	1.2E-03	2.3E-03	6.4E-03	1.3E-02	2.0E-02	2.1E-02	2.2E-02	4.6E-03	5.4E-03	10

Table C.5-1. 2008 Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)										
		Catalytic Exhaust	Non-Catalytic Exhaust	Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter
				Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	Catalytic	Non-Catalytic	
1643212	Firestone OFF and Imperial ON	0.49	0.36	6.3E-04	6.6E-04	1.3E-03	3.5E-03	7.5E-03	1.1E-02	1.2E-02	1.2E-02	2.6E-03	3.0E-03	4.1
1643213	Firestone ON and Wright Rd OFF	1.88	1.41	2.4E-03	2.6E-03	5.1E-03	1.4E-02	2.9E-02	4.2E-02	4.5E-02	4.8E-02	9.9E-03	1.2E-02	0.86
1643214	Pico OFF and Harbor Scenic Dr OFF	0.05	0.04	6.4E-05	6.9E-05	1.4E-04	3.6E-04	7.7E-04	1.1E-03	1.2E-03	1.3E-03	2.6E-04	3.1E-04	0.48
1643216	NB LB OFF and SB LB OFF	0.14	0.10	1.7E-04	1.9E-04	3.7E-04	1.0E-03	2.1E-03	3.1E-03	3.3E-03	3.5E-03	7.2E-04	8.5E-04	1.8
1656691	Anaheim OFF and Pico ON	2.67	1.87	3.4E-03	3.4E-03	7.2E-03	1.8E-02	4.1E-02	5.6E-02	6.4E-02	6.3E-02	1.4E-02	1.6E-02	11
1657648	Pico ON and Harbor Scenic Drive ON	3.80	2.56	4.9E-03	4.7E-03	1.0E-02	2.5E-02	5.8E-02	7.7E-02	9.1E-02	8.7E-02	2.0E-02	2.1E-02	5.7
1657653	EB Anaheim ON and Pico OFF	2.73	1.73	3.5E-03	3.2E-03	7.4E-03	1.7E-02	4.2E-02	5.2E-02	6.5E-02	5.8E-02	1.4E-02	1.4E-02	7.8
1657654	Shoreline Dr OFF	2.24	1.40	2.9E-03	2.6E-03	6.1E-03	1.4E-02	3.4E-02	4.2E-02	5.4E-02	4.7E-02	1.2E-02	1.2E-02	4.3
1657662	Shoreline Dr OFF and EB Anaheim ON	1.62	1.02	2.1E-03	1.9E-03	4.4E-03	1.0E-02	2.5E-02	3.1E-02	3.9E-02	3.5E-02	8.6E-03	8.5E-03	4.8
1657665	Shoreline Dr ON and Anaheim OFF	2.01	1.35	2.6E-03	2.5E-03	5.4E-03	1.3E-02	3.1E-02	4.1E-02	4.8E-02	4.6E-02	1.1E-02	1.1E-02	6.0
1657668	405 OFF and EB 405 ON	1.65	1.01	2.1E-03	1.9E-03	4.5E-03	9.8E-03	2.5E-02	3.0E-02	4.0E-02	3.4E-02	8.7E-03	8.4E-03	5.0
1657669	EB Alondra OFF and Alondra ON	1.47	0.93	1.9E-03	1.7E-03	4.0E-03	9.0E-03	2.3E-02	2.8E-02	3.5E-02	3.1E-02	7.8E-03	7.7E-03	4.0
1657672	WB Del Amo ON and WB Del Amo OFF	1.78	1.11	2.3E-03	2.0E-03	4.8E-03	1.1E-02	2.7E-02	3.3E-02	4.3E-02	3.8E-02	9.4E-03	9.3E-03	5.9
1657678	Del Amo ON and 405 OFF	1.05	0.68	1.3E-03	1.3E-03	2.8E-03	6.6E-03	1.6E-02	2.0E-02	2.5E-02	2.3E-02	5.6E-03	5.7E-03	4.2
1658094	EB Del Amo ON and EB Del Amo OFF	1.04	0.73	1.3E-03	1.3E-03	2.8E-03	7.1E-03	1.6E-02	2.2E-02	2.5E-02	2.5E-02	5.5E-03	6.1E-03	3.8
1658095	WB Del Amo OFF and EB Del Amo ON	0.12	0.08	1.6E-04	1.6E-04	3.3E-04	8.2E-04	1.9E-03	2.5E-03	3.0E-03	2.9E-03	6.5E-04	7.0E-04	0.31
1658097	WB Willow OFF and EB Willow ON	0.89	0.63	1.1E-03	1.2E-03	2.4E-03	6.2E-03	1.4E-02	1.9E-02	2.1E-02	2.1E-02	4.7E-03	5.3E-03	3.6

Table C.5-2. Alternative 1 Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)	MSAT Daily Mass Emissions (lb/day)					
		Catalytic Exhaust	Acrolein	Acetaldehyde	Formaldehyde	Benzene	1,3-Butadiene	Diesel Particulate Matter
14541	Florence OFF and Florence ON	2.07	2.3E-03	4.9E-03	2.8E-02	4.3E-02	9.6E-03	3.3
14604	Florence ON and Florence OFF	1.86	2.1E-03	4.4E-03	2.5E-02	3.9E-02	8.6E-03	3.4
14610	Florence ON and Firestone OFF	2.42	2.7E-03	5.7E-03	3.2E-02	5.1E-02	1.1E-02	2.9
14620	Third Off and SR60 ON	0.79	8.8E-04	1.9E-03	1.1E-02	1.7E-02	3.6E-03	0.29
14698	3rd / Ford ON and 3rd / Ford Off	0.05	5.6E-05	1.2E-04	6.6E-04	1.0E-03	2.3E-04	0.06
14700	Florence OFF and Firestone ON	2.58	2.9E-03	6.1E-03	3.4E-02	5.4E-02	1.2E-02	3.2
14705	Firestone OFF and Firestone ON	2.23	2.5E-03	5.3E-03	3.0E-02	4.7E-02	1.0E-02	3.5
14712	Firestone ON and Firestone OFF	1.82	2.0E-03	4.3E-03	2.4E-02	3.8E-02	8.4E-03	3.8
14729	3rd / Ford Off and SR60 Off	0.46	5.2E-04	1.1E-03	6.2E-03	9.7E-03	2.1E-03	0.48
14740	SR60 ON and EasternWhittierOlympic OFF	0.82	9.2E-04	1.9E-03	1.1E-02	1.7E-02	3.8E-03	0.31
14748	Olympic Off and NB i5 Off	0.77	8.6E-04	1.8E-03	1.0E-02	1.6E-02	3.5E-03	0.52
14761	NB i5 Off and Washington ON	2.31	2.6E-03	5.5E-03	3.1E-02	4.8E-02	1.1E-02	1.2
14765	SB i5 ON and Washington Off	1.34	1.5E-03	3.2E-03	1.8E-02	2.8E-02	6.2E-03	0.63
14768	NB i5 ON and Olympic Off	0.67	7.6E-04	1.6E-03	9.0E-03	1.4E-02	3.1E-03	0.65
14772	Washington Off and Washington ON	1.07	1.2E-03	2.5E-03	1.4E-02	2.2E-02	4.9E-03	0.52
14775	EasternWhittierOlympic OFF and SB i5 Off	1.22	1.4E-03	2.9E-03	1.6E-02	2.6E-02	5.6E-03	0.43
14776	SR60 Off and Olympic ON	1.26	1.4E-03	3.0E-03	1.7E-02	2.6E-02	5.8E-03	0.90
14784	Washington ON and Washington OFF	0.92	1.0E-03	2.2E-03	1.2E-02	1.9E-02	4.3E-03	0.78
14790	Washington ON and Bandini/Atlantic OFF	0.66	7.4E-04	1.6E-03	8.8E-03	1.4E-02	3.0E-03	0.42
14791	Olympic ON and NB i5 ON	0.77	8.7E-04	1.8E-03	1.0E-02	1.6E-02	3.6E-03	0.48
14794	Eastern ON and SB i5 ON	1.30	1.5E-03	3.1E-03	1.7E-02	2.7E-02	6.0E-03	0.41
14799	SB i5 Off and Eastern ON	0.26	2.9E-04	6.2E-04	3.5E-03	5.5E-03	1.2E-03	0.10
14817	Washington OFF and Atlantic/Bandini ON	0.90	1.0E-03	2.1E-03	1.2E-02	1.9E-02	4.1E-03	0.76
14828	Bandini/Atlantic OFF and WB Atlantic ON	1.43	1.6E-03	3.4E-03	1.9E-02	3.0E-02	6.6E-03	0.99
14858	Atlantic/Bandini ON and WB Atlantic OFF	0.54	6.1E-04	1.3E-03	7.3E-03	1.1E-02	2.5E-03	0.71
14864	WB Atlantic OFF and EB Atlantic OFF	1.14	1.3E-03	2.7E-03	1.5E-02	2.4E-02	5.3E-03	1.3
14886	WB Atlantic ON and EB Atlantic ON	0.68	7.6E-04	1.6E-03	9.1E-03	1.4E-02	3.1E-03	0.82
14898	Wright Rd OFF and Imperial OFF	2.66	3.0E-03	6.3E-03	3.6E-02	5.6E-02	1.2E-02	4.0
14944	Imperial ON and Imperial OFF	1.88	2.1E-03	4.4E-03	2.5E-02	3.9E-02	8.7E-03	4.7
14964	Imperial OFF and EBnWb 105 ON	0.83	9.3E-04	2.0E-03	1.1E-02	1.7E-02	3.8E-03	1.8
14970	Imperial ON and MLK OFF	0.28	3.2E-04	6.7E-04	3.8E-03	5.9E-03	1.3E-03	0.44
14973	MLK OFF and 105 OFF	0.59	6.6E-04	1.4E-03	7.9E-03	1.2E-02	2.7E-03	1.0
14991	105 OFF and Rosecrans OFF	0.62	6.9E-04	1.5E-03	8.2E-03	1.3E-02	2.8E-03	1.5
15081	Rosecrans OFF and MLK ON	2.05	2.3E-03	4.8E-03	2.7E-02	4.3E-02	9.5E-03	5.3
15102	EBnWb 105 ON and Rosecrans ON	0.59	6.6E-04	1.4E-03	7.9E-03	1.2E-02	2.7E-03	2.1
15182	Rosecrans ON and EBnWb 105/Garfield OFF	2.09	2.3E-03	4.9E-03	2.8E-02	4.4E-02	9.6E-03	8.3
15209	MLK ON and 105 ON	0.58	6.5E-04	1.4E-03	7.7E-03	1.2E-02	2.7E-03	1.4
15290	105 ON and WB Rosecrans ON	1.09	1.2E-03	2.6E-03	1.5E-02	2.3E-02	5.0E-03	2.8
15352	WB Rosecrans ON and EB Rosecrans ON	0.96	1.1E-03	2.3E-03	1.3E-02	2.0E-02	4.4E-03	2.4
15353	WB Rosecrans ON and EB Rosecrans ON	1.22	1.4E-03	2.9E-03	1.6E-02	2.6E-02	5.6E-03	4.6

Table C.5-2. Alternative 1 Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)	MSAT Daily Mass Emissions (lb/day)					
		Catalytic Exhaust	Acrolein	Acetaldehyde	Formaldehyde	Benzene	1,3-Butadiene	Diesel Particulate Matter
15393	EBnWb 105/Garfield OFF and Rosecrans OFF	0.98	1.1E-03	2.3E-03	1.3E-02	2.0E-02	4.5E-03	2.3
15412	EB Rosecrans ON and WB Alondra OFF	1.49	1.7E-03	3.5E-03	2.0E-02	3.1E-02	6.9E-03	5.1
15433	Rosecrans OFF and Alondra ON	0.67	7.5E-04	1.6E-03	8.9E-03	1.4E-02	3.1E-03	1.5
15489	Rosecrans OFF and Alondra ON	1.57	1.8E-03	3.7E-03	2.1E-02	3.3E-02	7.2E-03	5.7
15497	WB Alondra OFF and EB Alondra OFF	0.43	4.8E-04	1.0E-03	5.7E-03	8.9E-03	2.0E-03	1.1
15536	Alondra ON and Alondra OFF	0.60	6.7E-04	1.4E-03	8.0E-03	1.3E-02	2.8E-03	2.1
15549	Alondra ON and EB 91/Atlantic/Artesia OFF	0.86	9.6E-04	2.0E-03	1.1E-02	1.8E-02	3.9E-03	3.0
15552	Alondra OFF and WB 91/Atlantic ON	0.76	8.5E-04	1.8E-03	1.0E-02	1.6E-02	3.5E-03	2.5
15581	EB 91/Atlantic/Artesia OFF and WB 91 OFF	0.89	1.0E-03	2.1E-03	1.2E-02	1.9E-02	4.1E-03	3.8
15586	WB 91/Atlantic ON and EB 91 ON	0.64	7.2E-04	1.5E-03	8.6E-03	1.3E-02	3.0E-03	2.9
15588	WB 91 OFF and WB 91 ON	0.14	1.5E-04	3.2E-04	1.8E-03	2.8E-03	6.3E-04	0.67
15591	EB 91 ON and WB 91 OFF	0.44	5.0E-04	1.0E-03	5.9E-03	9.2E-03	2.0E-03	1.6
15615	WB 91 OFF and Artesia/EB 91 OFF	0.47	5.3E-04	1.1E-03	6.3E-03	9.8E-03	2.2E-03	2.3
15655	WB 91 ON and EB 91 & Artesia ON	0.53	5.9E-04	1.2E-03	7.0E-03	1.1E-02	2.4E-03	1.9
15696	WB 91 OFF and Artesia/EB 91 OFF	1.35	1.5E-03	3.2E-03	1.8E-02	2.8E-02	6.2E-03	4.8
15700	EB 91 & Artesia ON and NB LB OFF	0.92	1.0E-03	2.2E-03	1.2E-02	1.9E-02	4.2E-03	4.2
15749	SB LB OFF and LB ON	1.72	1.9E-03	4.1E-03	2.3E-02	3.6E-02	7.9E-03	5.4
15782	Artesia/EB 91 OFF and LB Blvd ON	0.55	6.1E-04	1.3E-03	7.3E-03	1.1E-02	2.5E-03	2.3
15785	LB ON and Del Amo OFF	1.23	1.4E-03	2.9E-03	1.6E-02	2.6E-02	5.7E-03	6.0
15915	Del Amo OFF and Del Amo ON	1.42	1.6E-03	3.4E-03	1.9E-02	3.0E-02	6.5E-03	5.9
15954	LB Blvd ON and LB Blvd OFF	1.79	2.0E-03	4.2E-03	2.4E-02	3.8E-02	8.3E-03	7.7
16041	LB Blvd OFF and WB Del Amo ON	0.86	9.6E-04	2.0E-03	1.1E-02	1.8E-02	4.0E-03	7.2
16042	Del Amo ON and 405 OFF	0.37	4.2E-04	8.8E-04	5.0E-03	7.8E-03	1.7E-03	1.5
16050	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	2.77	3.1E-03	6.6E-03	3.7E-02	5.8E-02	1.3E-02	7.3
16053	EB 405 ON and WB 405 ON	2.61	2.9E-03	6.2E-03	3.5E-02	5.5E-02	1.2E-02	11
16063	WB 405 ON and WB Willow OFF	0.44	4.9E-04	1.0E-03	5.9E-03	9.2E-03	2.0E-03	1.9
16073	WB 405 ON and WB Willow OFF	0.53	6.0E-04	1.3E-03	7.1E-03	1.1E-02	2.5E-03	1.8
16086	405/Wardlow/Pacific OFF and WB Willow ON	1.48	1.7E-03	3.5E-03	2.0E-02	3.1E-02	6.8E-03	5.4
16121	405/Wardlow/Pacific OFF and WB Willow ON	0.44	4.9E-04	1.0E-03	5.9E-03	9.2E-03	2.0E-03	1.4
16123	EB Willow ON and EB Willow OFF	1.28	1.4E-03	3.0E-03	1.7E-02	2.7E-02	5.9E-03	5.2
16134	WB Willow OFF and WB Willow ON	0.14	1.6E-04	3.4E-04	1.9E-03	3.0E-03	6.6E-04	0.78
16135	EB Willow ON and PCH OFF	0.01	1.2E-05	2.6E-05	1.4E-04	2.3E-04	5.0E-05	0.05
16152	WB Willow ON and EB Willow OFF	0.40	4.5E-04	9.5E-04	5.4E-03	8.4E-03	1.9E-03	0.36
16157	EB Willow OFF and WB PCH ON	0.24	2.7E-04	5.8E-04	3.3E-03	5.1E-03	1.1E-03	1.1
16168	PCH OFF and WB Anaheim ON	0.21	2.3E-04	4.9E-04	2.8E-03	4.3E-03	9.5E-04	0.83
16174	EB Anaheim ON and Shoreline Dr ON	0.19	2.2E-04	4.5E-04	2.6E-03	4.0E-03	8.9E-04	0.74
16185	Shoreline Dr ON	0.28	3.1E-04	6.5E-04	3.7E-03	5.8E-03	1.3E-03	1.1
16187	EB PCH ON and PCH OFF	0.31	3.5E-04	7.3E-04	4.2E-03	6.5E-03	1.4E-03	1.1
16237	WB Anaheim OFF and WB Anaheim ON	0.71	7.9E-04	1.7E-03	9.5E-03	1.5E-02	3.3E-03	3.5
16247	WB Anaheim ON and EB Anaheim OFF	1.94	2.2E-03	4.6E-03	2.6E-02	4.1E-02	8.9E-03	7.5

Table C.5-2. Alternative 1 Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)	MSAT Daily Mass Emissions (lb/day)					
		Catalytic Exhaust	Acrolein	Acetaldehyde	Formaldehyde	Benzene	1,3-Butadiene	Diesel Particulate Matter
16254	WB PCH OFF and EB PCH ON	0.18	2.0E-04	4.3E-04	2.4E-03	3.8E-03	8.4E-04	0.94
16266	PCH ON and WB Anaheim OFF	0.40	4.5E-04	9.5E-04	5.4E-03	8.4E-03	1.9E-03	3.3
88573	PCH OFF and PCH ON	7.42	8.3E-03	1.8E-02	9.9E-02	1.6E-01	3.4E-02	8.1
88574	EB Del Amo OFF and EB 405 ON	5.43	6.1E-03	1.3E-02	7.3E-02	1.1E-01	2.5E-02	6.3
88575	EB 405 ON and Wardlow/WB 405 ON	2.76	3.1E-03	6.5E-03	3.7E-02	5.8E-02	1.3E-02	4.7
88576	405 OFF and EB 405 ON	2.74	3.1E-03	6.5E-03	3.7E-02	5.7E-02	1.3E-02	3.6
97956	EB Atlantic OFF and Florence ON	0.22	2.5E-04	5.2E-04	2.9E-03	4.6E-03	1.0E-03	3.6
127416	EB Atlantic OFF and Florence ON	0.19	2.2E-04	4.6E-04	2.6E-03	4.1E-03	9.0E-04	0.80
127435	EB Atlantic ON and Florence OFF	0.07	8.0E-05	1.7E-04	9.5E-04	1.5E-03	3.3E-04	1.7
127443	EB Atlantic ON and Florence OFF	0.18	2.1E-04	4.4E-04	2.5E-03	3.9E-03	8.5E-04	4.3
1643212	Firestone OFF and Imperial ON	0.11	1.2E-04	2.6E-04	1.5E-03	2.3E-03	5.1E-04	1.8
1643213	Firestone ON and Wright Rd OFF	0.45	5.1E-04	1.1E-03	6.1E-03	9.5E-03	2.1E-03	0.24
1643214	Pico OFF and Harbor Scenic Dr OFF	0.01	1.3E-05	2.8E-05	1.6E-04	2.5E-04	5.5E-05	0.23
1643216	NB LB OFF and SB LB OFF	0.03	3.1E-05	6.5E-05	3.7E-04	5.8E-04	1.3E-04	0.71
1656691	Anaheim OFF and Pico ON	0.63	7.0E-04	1.5E-03	8.4E-03	1.3E-02	2.9E-03	5.1
1657648	Pico ON and Harbor Scenic Drive ON	0.87	9.7E-04	2.0E-03	1.2E-02	1.8E-02	4.0E-03	2.2
1657653	EB Anaheim ON and Pico OFF	0.70	7.8E-04	1.6E-03	9.3E-03	1.5E-02	3.2E-03	2.6
1657654	Shoreline Dr OFF	0.37	4.2E-04	8.8E-04	5.0E-03	7.8E-03	1.7E-03	1.6
1657662	Shoreline Dr OFF and EB Anaheim ON	0.43	4.8E-04	1.0E-03	5.7E-03	8.9E-03	2.0E-03	1.6
1657665	Shoreline Dr ON and Anaheim OFF	0.49	5.5E-04	1.2E-03	6.6E-03	1.0E-02	2.3E-03	2.2
1657668	405 OFF and EB 405 ON	0.40	4.5E-04	9.5E-04	5.4E-03	8.4E-03	1.9E-03	1.4
1657669	EB Alondra OFF and Alondra ON	0.36	4.0E-04	8.5E-04	4.8E-03	7.5E-03	1.7E-03	1.4
1657672	WB Del Amo ON and WB Del Amo OFF	0.43	4.9E-04	1.0E-03	5.8E-03	9.1E-03	2.0E-03	1.7
1657678	Del Amo ON and 405 OFF	0.25	2.8E-04	5.9E-04	3.3E-03	5.2E-03	1.2E-03	1.3
1658094	EB Del Amo ON and EB Del Amo OFF	0.24	2.7E-04	5.7E-04	3.2E-03	5.0E-03	1.1E-03	1.3
1658095	WB Del Amo OFF and EB Del Amo ON	0.03	3.5E-05	7.4E-05	4.2E-04	6.5E-04	1.4E-04	0.13
1658097	WB Willow OFF and EB Willow ON	0.20	2.2E-04	4.7E-04	2.7E-03	4.1E-03	9.2E-04	1.3

Table C.5-3. Alternative 5A Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)	MSAT Daily Mass Emissions (lb/day)					
		Catalytic Exhaust	Acrolein	Acetaldehyde	Formaldehyde	Benzene	1,3-Butadiene	Diesel Particulate Matter
14541	Florence OFF and Florence ON	2.32	2.6E-03	5.5E-03	3.1E-02	4.9E-02	1.1E-02	2.4
14604	Florence OFF and Florence ON	1.81	2.0E-03	4.3E-03	2.4E-02	3.8E-02	8.4E-03	2.7
14610	Florence ON and Firestone OFF	3.38	3.8E-03	8.0E-03	4.5E-02	7.1E-02	1.6E-02	3.1
14620	Third Off and SR60 ON	1.37	1.5E-03	3.2E-03	1.8E-02	2.9E-02	6.3E-03	0.41
14698	3rd/Ford ON and 3rd Ford OFF	0.07	8.2E-05	1.7E-04	9.8E-04	1.5E-03	3.4E-04	0.06
14700	Florence OFF and WB Firestone ON	2.98	3.3E-03	7.0E-03	4.0E-02	6.2E-02	1.4E-02	3.7
14705	Firestone OFF and WB Firestone ON	1.91	2.1E-03	4.5E-03	2.6E-02	4.0E-02	8.8E-03	2.3
14712	EB Firestone ON and Firestone OFF	1.39	1.6E-03	3.3E-03	1.9E-02	2.9E-02	6.4E-03	2.9
14729	3rd Ford OFF and SR 60 OFF	0.74	8.3E-04	1.8E-03	9.9E-03	1.6E-02	3.4E-03	0.50
14740	SR60 ON and EasternWhittierOlympic OFF	1.56	1.8E-03	3.7E-03	2.1E-02	3.3E-02	7.2E-03	0.40
14748	Olympic Off and NB i5 OFF	0.88	9.9E-04	2.1E-03	1.2E-02	1.8E-02	4.1E-03	1.0
14761	NB i5 OFF and Washington/710 Truck Lane ON	1.65	1.9E-03	3.9E-03	2.2E-02	3.5E-02	7.6E-03	1.1
14768	NB i5 ON and Olympic Off	0.65	7.3E-04	1.5E-03	8.8E-03	1.4E-02	3.0E-03	0.85
14775	EasternWhittierOlympic OFF and SB i5 Off	0.46	5.2E-04	1.1E-03	6.2E-03	9.6E-03	2.1E-03	0.26
14776	SR 60 OFF and Olympic ON	2.54	2.8E-03	6.0E-03	3.4E-02	5.3E-02	1.2E-02	1.2
14784	Washington/710 Truck Lane ON and Washington OFF	1.14	1.3E-03	2.7E-03	1.5E-02	2.4E-02	5.3E-03	1.0
14790	Washington Off and Washington ON	1.33	1.5E-03	3.1E-03	1.8E-02	2.8E-02	6.1E-03	0.63
14791	Olympic ON and NB i5 ON	0.60	6.8E-04	1.4E-03	8.1E-03	1.3E-02	2.8E-03	0.64
14794	SB i5 Off and Eastern ON	0.85	9.5E-04	2.0E-03	1.1E-02	1.8E-02	3.9E-03	0.49
14799	SB i5 Off and Eastern ON	0.87	9.8E-04	2.1E-03	1.2E-02	1.8E-02	4.0E-03	0.50
14828	Washington ON and Bandini/Atlantic OFF	1.64	1.8E-03	3.9E-03	2.2E-02	3.4E-02	7.6E-03	0.80
14858	Washington OFF and WB Atlantic OFF	1.16	1.3E-03	2.8E-03	1.6E-02	2.4E-02	5.4E-03	1.1
14864	Slauson ON and Atlantic ON	4.86	5.5E-03	1.1E-02	6.5E-02	1.0E-01	2.2E-02	2.3
14886	Bandini/Atlantic OFF and Atlantic ON	2.77	3.1E-03	6.5E-03	3.7E-02	5.8E-02	1.3E-02	1.3
14898	Imperial/Wright Rd OFF and Imperial ON	1.51	1.7E-03	3.6E-03	2.0E-02	3.2E-02	7.0E-03	2.2
14944	Imperial OFF and Imperial ON	1.42	1.6E-03	3.4E-03	1.9E-02	3.0E-02	6.6E-03	3.4
14964	Imperial OFF and EBnWB 105 ON	0.95	1.1E-03	2.2E-03	1.3E-02	2.0E-02	4.4E-03	2.1
14970	Imperial ON and 105 OFF	0.33	3.7E-04	7.9E-04	4.5E-03	7.0E-03	1.5E-03	0.49
14973	Imperial ON and 105 OFF	0.75	8.4E-04	1.8E-03	1.0E-02	1.6E-02	3.5E-03	1.1
14991	105 OFF and Rosecrans OFF	0.78	8.7E-04	1.8E-03	1.0E-02	1.6E-02	3.6E-03	1.7
15081	Rosecrans OFF and MLK ON	2.60	2.9E-03	6.1E-03	3.5E-02	5.4E-02	1.2E-02	6.1
15102	EBnWB 105 ON and Rosecrans ON	0.75	8.4E-04	1.8E-03	1.0E-02	1.6E-02	3.4E-03	2.5
15182	Rosecrans ON and EBnWB 105/Garfield OFF	2.65	3.0E-03	6.3E-03	3.5E-02	5.5E-02	1.2E-02	9.4
15209	MLK ON and 105 ON	0.72	8.1E-04	1.7E-03	9.7E-03	1.5E-02	3.3E-03	1.6
15290	105 ON and WB Rosecrans ON	1.49	1.7E-03	3.5E-03	2.0E-02	3.1E-02	6.9E-03	2.6
15352	WB Rosecrans ON and EB Rosecrans ON	1.34	1.5E-03	3.2E-03	1.8E-02	2.8E-02	6.2E-03	2.2
15353	EBnWB 105/Garfield OFF and Rosecrans Off	1.45	1.6E-03	3.4E-03	1.9E-02	3.0E-02	6.7E-03	5.3
15393	EB Rosecrans ON and WB Alondra OFF	1.24	1.4E-03	2.9E-03	1.7E-02	2.6E-02	5.7E-03	2.2
15412	Rosecrans OFF and Alondra ON	1.72	1.9E-03	4.1E-03	2.3E-02	3.6E-02	8.0E-03	5.5
15433	WB Alondra OFF and EB Alondra OFF	0.74	8.3E-04	1.8E-03	9.9E-03	1.6E-02	3.4E-03	1.6

Table C.5-3. Alternative 5A Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)	MSAT Daily Mass Emissions (lb/day)					
		Catalytic Exhaust	Acrolein	Acetaldehyde	Formaldehyde	Benzene	1,3-Butadiene	Diesel Particulate Matter
15489	Alondra ON and EB 91/Atlantic ON	1.87	2.1E-03	4.4E-03	2.5E-02	3.9E-02	8.6E-03	6.6
15497	Alondra ON and WB 91 OFF	0.38	4.3E-04	9.1E-04	5.1E-03	8.0E-03	1.8E-03	1.1
15536	EB 91/Atlantic ON and WB 91/Atlantic ON	0.86	9.7E-04	2.0E-03	1.2E-02	1.8E-02	4.0E-03	3.8
15549	Alondra ON and WB 91 OFF	1.08	1.2E-03	2.6E-03	1.4E-02	2.3E-02	5.0E-03	3.1
15552	WB 91/Atlantic ON and Alondra Blvd OFF	0.81	9.1E-04	1.9E-03	1.1E-02	1.7E-02	3.8E-03	4.1
15581	WB 91 OFF and WB 91 ON	1.27	1.4E-03	3.0E-03	1.7E-02	2.7E-02	5.9E-03	5.0
15591	WB 91 ON and EB 91 & Artesia ON	0.53	5.9E-04	1.2E-03	7.1E-03	1.1E-02	2.4E-03	1.9
15615	Alondra Blvd OFF and 91/Artesia OFF	1.34	1.5E-03	3.2E-03	1.8E-02	2.8E-02	6.2E-03	7.0
15655	EB 91 & Artesia ON and NB LB OFF	0.72	8.1E-04	1.7E-03	9.6E-03	1.5E-02	3.3E-03	2.0
15696	NB LB OFF and LB ON	1.93	2.2E-03	4.6E-03	2.6E-02	4.0E-02	8.9E-03	5.3
15700	91/Artesia Blvd OFF and LB Blvd ON	0.61	6.9E-04	1.4E-03	8.2E-03	1.3E-02	2.8E-03	2.7
15749	LB ON and Del Amo OFF	1.97	2.2E-03	4.6E-03	2.6E-02	4.1E-02	9.1E-03	6.6
15782	Del Amo OFF and Del Amo ON	0.79	8.9E-04	1.9E-03	1.1E-02	1.7E-02	3.7E-03	2.5
15785	LB Blvd ON and LB Blvd OFF	1.54	1.7E-03	3.6E-03	2.1E-02	3.2E-02	7.1E-03	7.3
15915	LB Blvd OFF and EB Del Amo ON	1.63	1.8E-03	3.9E-03	2.2E-02	3.4E-02	7.5E-03	7.2
15954	710 Truck Lane ON and EB 405 OFF	2.52	2.8E-03	6.0E-03	3.4E-02	5.3E-02	1.2E-02	8.6
16041	Wardlow/WB 405 ON and 405/Wardlow/Pacific OFF	1.25	1.4E-03	2.9E-03	1.7E-02	2.6E-02	5.8E-03	8.6
16042	EB 405 ON and WB 405 ON	0.27	3.0E-04	6.4E-04	3.6E-03	5.7E-03	1.3E-03	1.6
16050	WB 405 ON and Willow OFF	2.47	2.8E-03	5.9E-03	3.3E-02	5.2E-02	1.1E-02	12
16053	405/Wardlow/Pacific OFF and Willow ON	2.36	2.6E-03	5.6E-03	3.2E-02	4.9E-02	1.1E-02	13
16086	Willow ON and PCH OFF	0.99	1.1E-03	2.3E-03	1.3E-02	2.1E-02	4.6E-03	4.6
16121	Willow OFF and Willow ON	1.13	1.3E-03	2.7E-03	1.5E-02	2.4E-02	5.2E-03	5.3
16123	Willow OFF and PCH ON	0.83	9.3E-04	2.0E-03	1.1E-02	1.7E-02	3.8E-03	5.5
16134	PCH ON and WB Anaheim ON	0.30	3.4E-04	7.2E-04	4.1E-03	6.4E-03	1.4E-03	2.2
16152	Shoreline Dr ON	0.65	7.3E-04	1.5E-03	8.6E-03	1.4E-02	3.0E-03	0.22
16168	711 Truck Lane ON and EB Anaheim ON	0.03	3.5E-05	7.4E-05	4.2E-04	6.6E-04	1.5E-04	0.80
16187	PCH ON and 710 Truck Lane ON	0.12	1.4E-04	2.9E-04	1.6E-03	2.5E-03	5.6E-04	2.5
16237	PCH OFF and Shoreline Dr OFF	0.70	7.8E-04	1.7E-03	9.3E-03	1.5E-02	3.2E-03	3.9
16247	EB Del Amo OFF and EB 405 ON	2.24	2.5E-03	5.3E-03	3.0E-02	4.7E-02	1.0E-02	10
16254	EB 405 ON and Wardlow/WB 405 ON	0.25	2.8E-04	5.9E-04	3.4E-03	5.3E-03	1.2E-03	1.0
88573	Florence ON and Slauson OFF	3.54	4.0E-03	8.4E-03	4.7E-02	7.4E-02	1.6E-02	3.8
88574	EB Atlantic ON and Slauson OFF	1.61	1.8E-03	3.8E-03	2.2E-02	3.4E-02	7.4E-03	1.3
88575	Imperial ON and Firestone OFF	3.20	3.6E-03	7.6E-03	4.3E-02	6.7E-02	1.5E-02	5.7
88576	Firestone ON and Wright Rd OFF	3.49	3.9E-03	8.3E-03	4.7E-02	7.3E-02	1.6E-02	3.9
97956	Anaheim ON and Harbor Scenic Dr OFF	0.16	1.8E-04	3.8E-04	2.1E-03	3.3E-03	7.3E-04	2.8
127416	EB 91 & Artesia ON and NB LB OFF	0.30	3.4E-04	7.1E-04	4.0E-03	6.3E-03	1.4E-03	0.84
127435	Anaheim OFF and PCH OFF	0.18	2.0E-04	4.3E-04	2.4E-03	3.8E-03	8.4E-04	3.8
127443	Harbor Scenic Drive ON and Anaheim OFF	0.23	2.5E-04	5.3E-04	3.0E-03	4.7E-03	1.0E-03	3.6
1643216	PCH OFF and Pico ON	0.09	9.8E-05	2.1E-04	1.2E-03	1.8E-03	4.0E-04	1.8
1656691	WB 405 OFF and EB 405 ON	1.08	1.2E-03	2.5E-03	1.4E-02	2.3E-02	5.0E-03	6.6

Table C.5-3. Alternative 5A Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)	MSAT Daily Mass Emissions (lb/day)					
		Catalytic Exhaust	Acrolein	Acetaldehyde	Formaldehyde	Benzene	1,3-Butadiene	Diesel Particulate Matter
1657648	EB Alondra OFF and Alondra ON	0.77	8.6E-04	1.8E-03	1.0E-02	1.6E-02	3.5E-03	2.3
1657653	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	0.77	8.6E-04	1.8E-03	1.0E-02	1.6E-02	3.5E-03	2.9
1657654	Del Amo ON and Long Beach Fwy Truck Lane ON	0.73	8.1E-04	1.7E-03	9.7E-03	1.5E-02	3.3E-03	1.8
1657662	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	0.47	5.3E-04	1.1E-03	6.3E-03	9.8E-03	2.2E-03	1.8
1657665	EB Del Amo ON and 710 Truck Lanes/EB Del Amo OFF	0.60	6.8E-04	1.4E-03	8.1E-03	1.3E-02	2.8E-03	2.3
1657668	Willow ON and Willow OFF	0.93	1.0E-03	2.2E-03	1.2E-02	2.0E-02	4.3E-03	6.0
1658094	WB Anaheim ON and Shoreline Dr ON	0.32	3.5E-04	7.5E-04	4.2E-03	6.6E-03	1.5E-03	2.8
2669548	Slauson OFF and Slauson ON	3.23	3.6E-03	7.6E-03	4.3E-02	6.8E-02	1.5E-02	3.2
2669551	Slauson ON and Florence OFF	2.88	3.2E-03	6.8E-03	3.9E-02	6.0E-02	1.3E-02	2.5
2669553	Slauson OFF and Atlantic OFF	1.71	1.9E-03	4.0E-03	2.3E-02	3.6E-02	7.9E-03	2.3
2669556	Atlantic OFF and Slauson ON	1.39	1.6E-03	3.3E-03	1.9E-02	2.9E-02	6.4E-03	2.0
2669564	SB i5 ON and Washington Off	1.98	2.2E-03	4.7E-03	2.7E-02	4.2E-02	9.2E-03	0.92
2669598	Shoreline Dr OFF and Anaheim & Pico OFF	0.04	4.4E-05	9.3E-05	5.3E-04	8.3E-04	1.8E-04	0.37
2669600	Shoreline Dr OFF	1.54	1.7E-03	3.6E-03	2.1E-02	3.2E-02	7.1E-03	0.62
2669601	Anaheim & Pico OFF and PCH ON	0.05	6.1E-05	1.3E-04	7.3E-04	1.1E-03	2.5E-04	1.8
2669608	EB 405 ON and WB 405 ON	0.19	2.2E-04	4.6E-04	2.6E-03	4.1E-03	9.0E-04	1.1
2669612	EB 405 OFF and WB 405 OFF	0.57	6.4E-04	1.3E-03	7.6E-03	1.2E-02	2.6E-03	3.1
2669643	Imperial OFF and Imperial ON	0.75	8.4E-04	1.8E-03	1.0E-02	1.6E-02	3.5E-03	1.8
2669645	Imperial/Wright Rd OFF and Imperial ON	1.28	1.4E-03	3.0E-03	1.7E-02	2.7E-02	5.9E-03	1.9
2669651	WB Firestone ON and EB Firestone ON	1.27	1.4E-03	3.0E-03	1.7E-02	2.7E-02	5.9E-03	1.6
2669653	WB Firestone ON and EB Firestone ON	0.96	1.1E-03	2.3E-03	1.3E-02	2.0E-02	4.4E-03	1.7
2669659	Florence OFF and Florence ON	1.17	1.3E-03	2.8E-03	1.6E-02	2.5E-02	5.4E-03	1.2
2669661	Florence ON and Firestone OFF	1.16	1.3E-03	2.7E-03	1.6E-02	2.4E-02	5.4E-03	1.1
2669687	Eastern ON and SB i5 ON	0.45	5.0E-04	1.1E-03	6.0E-03	9.4E-03	2.1E-03	0.23

Table C.5-4. Alternative 6A Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
14541	Mainline	2.04		2.3E-03		4.8E-03		2.7E-02		4.3E-02		9.4E-03		0.76	
14604	Mainline	1.43		1.6E-03		3.4E-03		1.9E-02		3.0E-02		6.6E-03		1.2	
14610	Mainline	3.43		3.8E-03		8.1E-03		4.6E-02		7.2E-02		1.6E-02		1.3	
14700	Mainline	3.09		3.5E-03		7.3E-03		4.1E-02		6.5E-02		1.4E-02		2.6	
14705	Mainline	1.73		1.9E-03		4.1E-03		2.3E-02		3.6E-02		8.0E-03		0.69	
14712	Mainline	1.15		1.3E-03		2.7E-03		1.5E-02		2.4E-02		5.3E-03		1.2	
14729	Mainline	0.43		4.9E-04		1.0E-03		5.8E-03		9.1E-03		2.0E-03		0.80	
14740	Mainline	3.00		3.4E-03		7.1E-03		4.0E-02		6.3E-02		1.4E-02		2.3	
14748	Mainline	0.79		8.9E-04		1.9E-03		1.1E-02		1.7E-02		3.6E-03		0.54	
14761	Mainline	1.47		1.7E-03		3.5E-03		2.0E-02		3.1E-02		6.8E-03		1.0	
14768	Mainline	0.81		9.1E-04		1.9E-03		1.1E-02		1.7E-02		3.7E-03		0.80	
14775	Mainline	0.93		1.0E-03		2.2E-03		1.2E-02		1.9E-02		4.3E-03		0.62	
14776	Mainline	2.67		3.0E-03		6.3E-03		3.6E-02		5.6E-02		1.2E-02		2.3	
14784	Mainline	0.86		9.7E-04		2.0E-03		1.2E-02		1.8E-02		4.0E-03		1.1	
14790	Mainline	2.00		2.2E-03		4.7E-03		2.7E-02		4.2E-02		9.3E-03		1.4	
14791	Mainline	0.86		9.6E-04		2.0E-03		1.2E-02		1.8E-02		4.0E-03		0.86	
14794	Mainline	0.69		7.7E-04		1.6E-03		9.2E-03		1.4E-02		3.2E-03		0.62	
14799	Mainline	0.27		3.0E-04		6.3E-04		3.6E-03		5.6E-03		1.2E-03		0.18	
14828	Mainline	0.81		9.1E-04		1.9E-03		1.1E-02		1.7E-02		3.7E-03		0.67	
14858	Mainline	1.69		1.9E-03		4.0E-03		2.3E-02		3.5E-02		7.8E-03		2.1	
14864	Mainline	0.35		4.0E-04		8.3E-04		4.7E-03		7.4E-03		1.6E-03		0.61	
14886	Mainline	0.27		3.0E-04		6.3E-04		3.6E-03		5.6E-03		1.2E-03		0.06	
14898	Mainline	3.48		3.9E-03		8.2E-03		4.7E-02		7.3E-02		1.6E-02		1.5	
14944	Mainline	1.38		1.5E-03		3.3E-03		1.8E-02		2.9E-02		6.4E-03		1.4	
14964	Mainline	1.63		1.8E-03		3.8E-03		2.2E-02		3.4E-02		7.5E-03		1.5	
14991	Mainline	1.14		1.3E-03		2.7E-03		1.5E-02		2.4E-02		5.3E-03		0.49	
15081	Mainline	3.06		3.4E-03		7.2E-03		4.1E-02		6.4E-02		1.4E-02		1.4	
15102	Mainline	0.70		7.8E-04		1.7E-03		9.4E-03		1.5E-02		3.2E-03		0.86	
15182	Mainline	2.42		2.7E-03		5.7E-03		3.2E-02		5.1E-02		1.1E-02		3.2	
15209	Mainline	1.13		1.3E-03		2.7E-03		1.5E-02		2.4E-02		5.2E-03		0.51	
15290	Mainline	1.36		1.5E-03		3.2E-03		1.8E-02		2.9E-02		6.3E-03		0.94	
15352	Mainline	1.04		1.2E-03		2.5E-03		1.4E-02		2.2E-02		4.8E-03		0.71	
15353	Mainline	1.84		2.1E-03		4.3E-03		2.5E-02		3.8E-02		8.5E-03		2.8	
15393	Mainline	2.35		2.6E-03		5.5E-03		3.1E-02		4.9E-02		1.1E-02		1.5	
15412	Mainline	1.32		1.5E-03		3.1E-03		1.8E-02		2.8E-02		6.1E-03		1.9	
15433	Mainline	1.03		1.2E-03		2.4E-03		1.4E-02		2.2E-02		4.8E-03		0.79	
15489	Mainline	1.37		1.5E-03		3.2E-03		1.8E-02		2.9E-02		6.3E-03		2.2	
15497	Mainline	0.27		3.1E-04		6.5E-04		3.7E-03		5.7E-03		1.3E-03		0.29	
15536	Mainline	1.20		1.3E-03		2.8E-03		1.6E-02		2.5E-02		5.5E-03		2.3	
15549	Mainline	0.77		8.7E-04		1.8E-03		1.0E-02		1.6E-02		3.6E-03		0.82	
15552	Mainline	0.77		8.7E-04		1.8E-03		1.0E-02		1.6E-02		3.6E-03		1.8	
15581	Mainline	1.28		1.4E-03		3.0E-03		1.7E-02		2.7E-02		5.9E-03		1.7	

Table C.5-4. Alternative 6A Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
15586	Mainline	0.62		7.0E-04		1.5E-03		8.4E-03		1.3E-02		2.9E-03		1.4	
15588	Mainline	0.21		2.3E-04		4.9E-04		2.8E-03		4.4E-03		9.6E-04		0.46	
15591	Mainline	0.93		1.0E-03		2.2E-03		1.2E-02		1.9E-02		4.3E-03		1.5	
15615	Mainline	0.71		8.0E-04		1.7E-03		9.5E-03		1.5E-02		3.3E-03		1.6	
15655	Mainline	1.64		1.8E-03		3.9E-03		2.2E-02		3.4E-02		7.6E-03		2.5	
15700	Mainline	1.60		1.8E-03		3.8E-03		2.1E-02		3.4E-02		7.4E-03		3.0	
15749	Mainline	2.65		3.0E-03		6.3E-03		3.5E-02		5.5E-02		1.2E-02		4.4	
15782	Mainline	1.76		2.0E-03		4.2E-03		2.4E-02		3.7E-02		8.1E-03		3.3	
15785	Mainline	1.43		1.6E-03		3.4E-03		1.9E-02		3.0E-02		6.6E-03		2.9	
15915	Mainline	0.66		7.4E-04		1.6E-03		8.8E-03		1.4E-02		3.0E-03		1.3	
15954	Mainline	1.69		1.9E-03		4.0E-03		2.3E-02		3.5E-02		7.8E-03		3.2	
16041	Mainline	1.91		2.1E-03		4.5E-03		2.6E-02		4.0E-02		8.8E-03		5.7	
16042	Mainline	0.34		3.8E-04		8.0E-04		4.5E-03		7.1E-03		1.6E-03		0.91	
16050	Mainline	3.01		3.4E-03		7.1E-03		4.0E-02		6.3E-02		1.4E-02		7.5	
16053	Mainline	1.17		1.3E-03		2.8E-03		1.6E-02		2.4E-02		5.4E-03		3.0	
16086	Mainline	1.25		1.4E-03		3.0E-03		1.7E-02		2.6E-02		5.8E-03		3.2	
16121	Mainline	1.30		1.5E-03		3.1E-03		1.7E-02		2.7E-02		6.0E-03		3.6	
16123	Mainline	1.07		1.2E-03		2.5E-03		1.4E-02		2.2E-02		4.9E-03		2.9	
16134	Mainline	0.07		8.2E-05		1.7E-04		9.8E-04		1.5E-03		3.4E-04		0.15	
16135	Mainline	0.01		1.6E-05		3.3E-05		1.9E-04		3.0E-04		6.5E-05		0.03	
16152	Shoreline On	0.84		9.4E-04		2.0E-03		1.1E-02		1.8E-02		3.9E-03		0.21	
16168	Mainline	0.18		2.0E-04		4.2E-04		2.4E-03		3.7E-03		8.2E-04		2.3	
16185	Mainline	0.32		3.6E-04		7.5E-04		4.2E-03		6.6E-03		1.5E-03		0.66	
16187	Mainline	0.07		8.2E-05		1.7E-04		9.8E-04		1.5E-03		3.4E-04		0.49	
16199	Shoreline Off	0.13		1.5E-04		3.1E-04		1.7E-03		2.7E-03		6.0E-04		0.05	
16237	Mainline	0.98		1.1E-03		2.3E-03		1.3E-02		2.1E-02		4.5E-03		2.2	
16247	Mainline	1.75		2.0E-03		4.1E-03		2.3E-02		3.7E-02		8.1E-03		3.5	
16254	Mainline	0.56		6.3E-04		1.3E-03		7.6E-03		1.2E-02		2.6E-03		1.4	
16266	Mainline	0.64		7.2E-04		1.5E-03		8.6E-03		1.3E-02		3.0E-03		2.0	
88574	Mainline	0.59		6.6E-04		1.4E-03		7.8E-03		1.2E-02		2.7E-03		0.14	
88575	Mainline	3.36		3.8E-03		7.9E-03		4.5E-02		7.0E-02		1.6E-02		3.2	
88576	Mainline	3.33		3.7E-03		7.9E-03		4.5E-02		7.0E-02		1.5E-02		1.2	
97956	Mainline	0.24		2.7E-04		5.7E-04		3.2E-03		5.1E-03		1.1E-03		2.6	
127416	Mainline	1.23		1.4E-03		2.9E-03		1.6E-02		2.6E-02		5.7E-03		2.0	
127435	Mainline	0.06		6.7E-05		1.4E-04		8.0E-04		1.2E-03		2.8E-04		0.52	
127443	Mainline	0.21		2.3E-04		4.9E-04		2.8E-03		4.3E-03		9.5E-04		1.4	
1643216	Mainline	0.06		7.3E-05		1.5E-04		8.7E-04		1.4E-03		3.0E-04		0.83	
1656691	Mainline	0.61		6.8E-04		1.4E-03		8.1E-03		1.3E-02		2.8E-03		1.8	
1657648	Mainline	1.70		1.9E-03		4.0E-03		2.3E-02		3.6E-02		7.9E-03		1.7	
1657653	Mainline	0.30		3.3E-04		7.1E-04		4.0E-03		6.3E-03		1.4E-03		0.60	
1657654	Mainline	0.47		5.3E-04		1.1E-03		6.3E-03		9.9E-03		2.2E-03		0.84	
1657662	Mainline	1.77		2.0E-03		4.2E-03		2.4E-02		3.7E-02		8.2E-03		3.8	

Table C.5-4. Alternative 6A Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
1657665	Mainline	0.24		2.7E-04		5.6E-04		3.2E-03		4.9E-03		1.1E-03		0.47	
1657668	Mainline	1.33		1.5E-03		3.1E-03		1.8E-02		2.8E-02		6.1E-03		3.9	
1658094	Mainline	0.21		2.4E-04		5.0E-04		2.8E-03		4.4E-03		9.8E-04		0.51	
1658097	Mainline	0.20		2.2E-04		4.7E-04		2.6E-03		4.1E-03		9.1E-04		0.47	
2669480	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		13	
2669481	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		19	
2669482	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		13	
2669483	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		2.9	
2669484	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		16	
2669485	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		22	
2669486	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		5.7	
2669487	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		3.3	
2669488	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		32	
2669489	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		9.1	
2669494	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		2.3	
2669495	Pico Off	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		1.3	
2669498	Pico On	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.63	
2669502	Harbour Scenic On	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.52	
2669505	Frt Off	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.34	
2669511	Pico On Freight Corridor	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.31	
2669512	Pico Off Freight Corridor	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.12	
2669523	Anaheim On	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		1.2	
2669524	Anaheim Off	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.52	
2669548	Mainline	1.83		2.1E-03		4.3E-03		2.5E-02		3.8E-02		8.5E-03		0.43	
2669564	Mainline	1.55		1.7E-03		3.7E-03		2.1E-02		3.3E-02		7.2E-03		1.1	
2669594	Mixed Flow Pico On	0.03		3.3E-05		6.9E-05		3.9E-04		6.2E-04		1.4E-04		0.24	
2669598	Mainline	0.11		1.2E-04		2.5E-04		1.4E-03		2.2E-03		4.9E-04		0.57	
2669599	Shoreline Off	0.46		5.1E-04		1.1E-03		6.1E-03		9.5E-03		2.1E-03		0.17	
2669600	Shoreline Off	0.98		1.1E-03		2.3E-03		1.3E-02		2.0E-02		4.5E-03		0.37	
2669601	Mainline	0.08		9.2E-05		1.9E-04		1.1E-03		1.7E-03		3.8E-04		0.66	
2669604	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		2.2	
2669606	SB Frt Corr On	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.97	
2669608	Mainline	0.29		3.2E-04		6.8E-04		3.8E-03		6.0E-03		1.3E-03		0.71	
2669612	Mainline	0.78		8.7E-04		1.8E-03		1.0E-02		1.6E-02		3.6E-03		2.1	
2669619	SB Frt Corr to GP On	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.70	
2669628	Mainline	0.38		4.2E-04		8.9E-04		5.0E-03		7.9E-03		1.7E-03		0.60	
2669632	Mainline	0.40		4.5E-04		9.5E-04		5.4E-03		8.4E-03		1.9E-03		0.95	
2669643	Mainline	0.75		8.4E-04		1.8E-03		1.0E-02		1.6E-02		3.5E-03		0.75	
2669645	Mainline	1.74		2.0E-03		4.1E-03		2.3E-02		3.7E-02		8.1E-03		0.74	
2669651	Mainline	1.66		1.9E-03		3.9E-03		2.2E-02		3.5E-02		7.6E-03		0.67	
2669653	Mainline	0.48		5.4E-04		1.1E-03		6.4E-03		1.0E-02		2.2E-03		0.44	
2669659	Mainline	1.04		1.2E-03		2.5E-03		1.4E-02		2.2E-02		4.8E-03		0.39	

Table C.5-4. Alternative 6A Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
2669661	Mainline	0.68		7.6E-04		1.6E-03		9.1E-03		1.4E-02		3.1E-03		0.57	
2669676	Mainline	0.45		5.0E-04		1.1E-03		6.0E-03		9.4E-03		2.1E-03		0.11	
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	0.00	0.00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.1	0.62
2669687	Mainline	0.69		7.7E-04		1.6E-03		9.2E-03		1.4E-02		3.2E-03		0.62	
2669689	Mainline	0.08		8.8E-05		1.9E-04		1.1E-03		1.7E-03		3.6E-04		0.72	
2669696	NB Frt Corr Off	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.51	
2669697	Mainline	0.74		8.3E-04		1.7E-03		9.9E-03		1.5E-02		3.4E-03		1.4	
2669698	Freight Corridor Mainline	0.00	0.00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.75	0.75
2669704	Mainline	1.15		1.3E-03		2.7E-03		1.5E-02		2.4E-02		5.3E-03		1.9	
2669712	SB MF Washinton Ramp to Frt Corr On	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.19	
2669714	Mainline	2.39		2.7E-03		5.6E-03		3.2E-02		5.0E-02		1.1E-02		0.72	
2669717	Freight Corridor Mainline	0.00	0.00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	20	14
2669718	SB Frt Corr Off	0.00	0.00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.9	1.5
2669748	End of Frt Corridor Mainline	0.00	0.00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	5.4	3.8
2669749	Mainline	0.37		4.2E-04		8.8E-04		5.0E-03		7.8E-03		1.7E-03		0.64	
2669750	Frt Corr NB On	0.00	0.00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.5	2.3
2669751	Mainline	1.09		1.2E-03		2.6E-03		1.5E-02		2.3E-02		5.0E-03		0.38	
2669759	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		7.8	
2669760	Patata On	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.37	
2669761	Freight Corridor Mainline	0.00	0.00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	21	16
2669763	Patata Off	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.41	
2669764	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		36	
2669766	SR 91 EB Off	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		1.3	
2669768	Freight Corridor Mainline	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		11	
2669769	WB SR 91 On	0.00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.0E+00		0.8	
2669788	Mainline	1.42		1.6E-03		3.4E-03		1.9E-02		3.0E-02		6.6E-03		1.1	
88573	Mainline	2.72	1.89	3.0E-03	2.1E-03	6.4E-03	4.5E-03	3.6E-02	2.5E-02	5.7E-02	4.0E-02	1.3E-02	8.7E-03	2.2	1.5
2669551	Mainline	3.70	2.80	4.1E-03	3.1E-03	8.7E-03	6.6E-03	4.9E-02	3.7E-02	7.7E-02	5.9E-02	1.7E-02	1.3E-02	1.4	1.1
2669553	Mainline	1.33	1.10	1.5E-03	1.2E-03	3.1E-03	2.6E-03	1.8E-02	1.5E-02	2.8E-02	2.3E-02	6.1E-03	5.1E-03	1.2	1.0
2669556	Mainline	0.98	1.00	1.1E-03	1.1E-03	2.3E-03	2.4E-03	1.3E-02	1.3E-02	2.0E-02	2.1E-02	4.5E-03	4.6E-03	0.82	0.84
2669699	Mainline	0.97	1.15	1.1E-03	1.3E-03	2.3E-03	2.7E-03	1.3E-02	1.5E-02	2.0E-02	2.4E-02	4.5E-03	5.3E-03	0.95	1.1

Table C.5-5. Alternative 6B Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
14541	Mainline	2.00		2.25E-03		4.73E-03		2.68E-02		4.19E-02		9.25E-03		0.74	
14604	Mainline	1.40		1.57E-03		3.32E-03		1.88E-02		2.94E-02		6.48E-03		0.93	
14610	Mainline	3.37		3.78E-03		7.96E-03		4.50E-02		7.05E-02		1.56E-02		1.3	
14700	Mainline	3.06		3.43E-03		7.23E-03		4.09E-02		6.41E-02		1.41E-02		2.0	
14705	Mainline	1.70		1.91E-03		4.03E-03		2.28E-02		3.57E-02		7.86E-03		0.67	
14712	Mainline	1.15		1.29E-03		2.72E-03		1.54E-02		2.40E-02		5.30E-03		0.90	
14729	Mainline	0.43		4.83E-04		1.02E-03		5.76E-03		9.02E-03		1.99E-03		0.77	
14740	Mainline	2.97		3.33E-03		7.02E-03		3.97E-02		6.21E-02		1.37E-02		2.4	
14748	Mainline	0.81		9.07E-04		1.91E-03		1.08E-02		1.69E-02		3.73E-03		0.55	
14761	Mainline	1.51		1.69E-03		3.56E-03		2.02E-02		3.16E-02		6.96E-03		1.0	
14768	Mainline	0.82		9.16E-04		1.93E-03		1.09E-02		1.71E-02		3.77E-03		0.80	
14775	Mainline	0.92		1.03E-03		2.17E-03		1.23E-02		1.92E-02		4.24E-03		0.66	
14776	Mainline	2.77		3.11E-03		6.55E-03		3.70E-02		5.80E-02		1.28E-02		2.4	
14784	Mainline	0.86		9.67E-04		2.04E-03		1.15E-02		1.80E-02		3.98E-03		1.1	
14790	Mainline	2.01		2.25E-03		4.75E-03		2.69E-02		4.20E-02		9.27E-03		1.5	
14791	Mainline	0.90		1.01E-03		2.13E-03		1.20E-02		1.88E-02		4.15E-03		0.86	
14794	Mainline	0.68		7.61E-04		1.60E-03		9.08E-03		1.42E-02		3.13E-03		0.65	
14799	Mainline	0.26		2.97E-04		6.26E-04		3.54E-03		5.55E-03		1.22E-03		0.19	
14828	Mainline	0.79		8.87E-04		1.87E-03		1.06E-02		1.66E-02		3.65E-03		0.69	
14858	Mainline	1.69		1.90E-03		3.99E-03		2.26E-02		3.54E-02		7.80E-03		2.1	
14864	Mainline	0.35		3.94E-04		8.31E-04		4.70E-03		7.36E-03		1.62E-03		0.61	
14886	Mainline	0.26		2.92E-04		6.15E-04		3.48E-03		5.45E-03		1.20E-03		0.06	
14898	Mainline	3.43		3.85E-03		8.11E-03		4.59E-02		7.18E-02		1.58E-02		1.5	
14944	Mainline	1.37		1.54E-03		3.24E-03		1.83E-02		2.87E-02		6.33E-03		1.1	
14964	Mainline	1.62		1.82E-03		3.83E-03		2.17E-02		3.39E-02		7.48E-03		1.2	
14991	Mainline	1.12		1.26E-03		2.66E-03		1.50E-02		2.35E-02		5.19E-03		0.47	
15081	Mainline	3.00		3.37E-03		7.09E-03		4.01E-02		6.28E-02		1.39E-02		1.4	
15102	Mainline	0.71		7.92E-04		1.67E-03		9.44E-03		1.48E-02		3.26E-03		0.67	
15182	Mainline	2.42		2.71E-03		5.71E-03		3.23E-02		5.06E-02		1.12E-02		2.4	
15209	Mainline	1.10		1.24E-03		2.60E-03		1.47E-02		2.31E-02		5.09E-03		0.50	
15290	Mainline	1.35		1.51E-03		3.18E-03		1.80E-02		2.82E-02		6.21E-03		0.90	
15352	Mainline	1.03		1.15E-03		2.43E-03		1.38E-02		2.15E-02		4.75E-03		0.68	
15353	Mainline	1.83		2.06E-03		4.33E-03		2.45E-02		3.84E-02		8.47E-03		2.4	
15393	Mainline	2.31		2.59E-03		5.47E-03		3.09E-02		4.84E-02		1.07E-02		1.4	
15412	Mainline	1.32		1.48E-03		3.12E-03		1.76E-02		2.76E-02		6.08E-03		1.7	
15433	Mainline	1.01		1.13E-03		2.38E-03		1.35E-02		2.11E-02		4.65E-03		0.76	
15489	Mainline	1.37		1.53E-03		3.23E-03		1.83E-02		2.86E-02		6.31E-03		1.8	
15497	Mainline	0.27		3.03E-04		6.38E-04		3.61E-03		5.65E-03		1.25E-03		0.28	
15536	Mainline	1.20		1.34E-03		2.83E-03		1.60E-02		2.51E-02		5.53E-03		1.9	
15549	Mainline	0.76		8.58E-04		1.81E-03		1.02E-02		1.60E-02		3.53E-03		0.79	
15552	Mainline	0.78		8.74E-04		1.84E-03		1.04E-02		1.63E-02		3.60E-03		1.5	
15581	Mainline	1.27		1.42E-03		2.99E-03		1.69E-02		2.65E-02		5.84E-03		1.6	

Table C.5-5. Alternative 6B Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
15586	Mainline	0.63		7.02E-04		1.48E-03		8.37E-03		1.31E-02		2.89E-03		1.1	
15588	Mainline	0.21		2.34E-04		4.93E-04		2.79E-03		4.37E-03		9.64E-04		0.38	
15591	Mainline	0.91		1.02E-03		2.16E-03		1.22E-02		1.91E-02		4.22E-03		1.5	
15615	Mainline	0.72		8.02E-04		1.69E-03		9.57E-03		1.50E-02		3.30E-03		1.3	
15655	Mainline	1.62		1.82E-03		3.83E-03		2.17E-02		3.40E-02		7.49E-03		2.4	
15700	Mainline	1.62		1.82E-03		3.84E-03		2.17E-02		3.40E-02		7.50E-03		2.6	
15749	Mainline	2.62		2.94E-03		6.20E-03		3.51E-02		5.49E-02		1.21E-02		4.3	
15782	Mainline	1.72		1.93E-03		4.08E-03		2.31E-02		3.61E-02		7.96E-03		3.2	
15785	Mainline	1.45		1.63E-03		3.43E-03		1.94E-02		3.03E-02		6.69E-03		2.6	
15915	Mainline	0.66		7.41E-04		1.56E-03		8.83E-03		1.38E-02		3.05E-03		1.1	
15954	Mainline	1.66		1.86E-03		3.91E-03		2.21E-02		3.47E-02		7.64E-03		3.1	
16041	Mainline	1.94		2.18E-03		4.58E-03		2.59E-02		4.06E-02		8.96E-03		4.9	
16042	Mainline	0.33		3.71E-04		7.83E-04		4.43E-03		6.93E-03		1.53E-03		0.88	
16050	Mainline	2.96		3.32E-03		7.00E-03		3.96E-02		6.20E-02		1.37E-02		7.2	
16053	Mainline	1.18		1.33E-03		2.80E-03		1.58E-02		2.48E-02		5.46E-03		2.6	
16086	Mainline	1.22		1.37E-03		2.89E-03		1.64E-02		2.56E-02		5.65E-03		3.0	
16121	Mainline	1.27		1.42E-03		3.00E-03		1.70E-02		2.66E-02		5.86E-03		3.5	
16123	Mainline	1.08		1.22E-03		2.56E-03		1.45E-02		2.27E-02		5.00E-03		2.5	
16134	Mainline	0.07		8.30E-05		1.75E-04		9.90E-04		1.55E-03		3.42E-04		0.11	
16135	Mainline	0.01		1.58E-05		3.33E-05		1.89E-04		2.95E-04		6.51E-05		0.02	
16152	Shoreline On	0.84		9.43E-04		1.99E-03		1.12E-02		1.76E-02		3.88E-03		0.20	
16168	Mainline	0.15		1.67E-04		3.53E-04		1.99E-03		3.12E-03		6.89E-04		2.3	
16185	Mainline	0.32		3.60E-04		7.58E-04		4.29E-03		6.72E-03		1.48E-03		0.50	
16187	Mainline	0.06		6.88E-05		1.45E-04		8.21E-04		1.28E-03		2.83E-04		0.46	
16199	Shoreline Off	0.13		1.46E-04		3.08E-04		1.74E-03		2.73E-03		6.02E-04		0.05	
16237	Mainline	0.96		1.08E-03		2.27E-03		1.29E-02		2.01E-02		4.44E-03		2.2	
16247	Mainline	1.76		1.97E-03		4.16E-03		2.35E-02		3.68E-02		8.12E-03		3.2	
16254	Mainline	0.57		6.37E-04		1.34E-03		7.59E-03		1.19E-02		2.62E-03		1.2	
16266	Mainline	0.63		7.01E-04		1.48E-03		8.36E-03		1.31E-02		2.89E-03		1.9	
88574	Mainline	0.58		6.45E-04		1.36E-03		7.69E-03		1.20E-02		2.66E-03		0.14	
88575	Mainline	3.35		3.76E-03		7.93E-03		4.49E-02		7.02E-02		1.55E-02		2.5	
88576	Mainline	3.28		3.68E-03		7.76E-03		4.39E-02		6.87E-02		1.51E-02		1.1	
97956	Mainline	0.21		2.39E-04		5.03E-04		2.84E-03		4.45E-03		9.82E-04		2.6	
127416	Mainline	1.20		1.35E-03		2.84E-03		1.61E-02		2.52E-02		5.55E-03		1.9	
127435	Mainline	0.06		6.50E-05		1.37E-04		7.75E-04		1.21E-03		2.67E-04		0.35	
127443	Mainline	0.20		2.26E-04		4.77E-04		2.70E-03		4.22E-03		9.31E-04		1.0	
1643216	Mainline	0.06		7.13E-05		1.50E-04		8.50E-04		1.33E-03		2.94E-04		0.55	
1656691	Mainline	0.59		6.60E-04		1.39E-03		7.87E-03		1.23E-02		2.72E-03		1.8	
1657648	Mainline	1.67		1.87E-03		3.94E-03		2.23E-02		3.49E-02		7.70E-03		1.7	
1657653	Mainline	0.30		3.35E-04		7.07E-04		4.00E-03		6.26E-03		1.38E-03		0.52	
1657654	Mainline	0.47		5.25E-04		1.11E-03		6.26E-03		9.80E-03		2.16E-03		0.82	
1657662	Mainline	1.78		2.00E-03		4.21E-03		2.38E-02		3.73E-02		8.22E-03		3.3	

Table C.5-5. Alternative 6B Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
1657665	Mainline	0.24		2.66E-04		5.60E-04		3.17E-03		4.96E-03		1.09E-03		0.41	
1657668	Mainline	1.34		1.50E-03		3.16E-03		1.79E-02		2.80E-02		6.17E-03		3.3	
1658094	Mainline	0.21		2.37E-04		5.00E-04		2.83E-03		4.43E-03		9.77E-04		0.36	
1658097	Mainline	0.20		2.21E-04		4.67E-04		2.64E-03		4.13E-03		9.12E-04		0.33	
2669480	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669481	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669482	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669483	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669484	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669485	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669486	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669487	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669488	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669489	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669494	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669495	Pico Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669498	Pico On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.68	
2669502	Harbour Scenic On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.54	
2669505	Frt Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.48	
2669511	Pico On Freight Corridor	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.34	
2669512	Pico Off Freight Corridor	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.13	
2669523	Anaheim On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		1.3	
2669524	Anaheim Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.54	
2669548	Mainline	1.79		2.01E-03		4.24E-03		2.40E-02		3.76E-02		8.29E-03		0.43	
2669564	Mainline	1.55		1.74E-03		3.68E-03		2.08E-02		3.26E-02		7.18E-03		1.2	
2669594	Mixed Flow Pico On	0.03		3.59E-05		7.57E-05		4.28E-04		6.71E-04		1.48E-04		0.25	
2669598	Mainline	0.10		1.10E-04		2.31E-04		1.31E-03		2.05E-03		4.52E-04		0.54	
2669599	Shoreline Off	0.46		5.12E-04		1.08E-03		6.10E-03		9.55E-03		2.11E-03		0.18	
2669600	Shoreline Off	0.98		1.10E-03		2.31E-03		1.31E-02		2.05E-02		4.51E-03		0.38	
2669601	Mainline	0.07		7.49E-05		1.58E-04		8.93E-04		1.40E-03		3.08E-04		0.62	
2669604	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669606	SB Frt Corr On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		1.0	
2669608	Mainline	0.28		3.16E-04		6.66E-04		3.77E-03		5.90E-03		1.30E-03		0.69	
2669612	Mainline	0.76		8.52E-04		1.80E-03		1.02E-02		1.59E-02		3.51E-03		2.0	
2669619	SB Frt Corr to GP On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.72	
2669628	Mainline	0.38		4.21E-04		8.87E-04		5.02E-03		7.86E-03		1.73E-03		0.50	
2669632	Mainline	0.41		4.54E-04		9.58E-04		5.42E-03		8.48E-03		1.87E-03		0.80	
2669643	Mainline	0.75		8.36E-04		1.76E-03		9.97E-03		1.56E-02		3.44E-03		0.58	
2669645	Mainline	1.70		1.90E-03		4.01E-03		2.27E-02		3.55E-02		7.84E-03		0.73	
2669651	Mainline	1.63		1.83E-03		3.85E-03		2.18E-02		3.41E-02		7.53E-03		0.65	
2669653	Mainline	0.48		5.38E-04		1.13E-03		6.41E-03		1.00E-02		2.21E-03		0.34	
2669659	Mainline	1.02		1.15E-03		2.42E-03		1.37E-02		2.14E-02		4.72E-03		0.38	

Table C.5-5. Alternative 6B Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
2669661	Mainline	0.67		7.51E-04		1.58E-03		8.96E-03		1.40E-02		3.09E-03		0.44	
2669676	Mainline	0.44		4.91E-04		1.04E-03		5.86E-03		9.17E-03		2.02E-03		0.11	
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.1	0.63
2669687	Mainline	0.68		7.61E-04		1.60E-03		9.08E-03		1.42E-02		3.13E-03		0.65	
2669689	Mainline	0.08		8.66E-05		1.82E-04		1.03E-03		1.62E-03		3.56E-04		0.49	
2669696	NB Frt Corr Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.46	
2669697	Mainline	0.74		8.29E-04		1.75E-03		9.88E-03		1.55E-02		3.41E-03		1.2	
2669698	Freight Corridor Mainline	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.76	0.76
2669704	Mainline	1.15		1.29E-03		2.71E-03		1.53E-02		2.40E-02		5.29E-03		1.9	
2669712	SB MF Washinton Ramp to Frt Corr On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.19	
2669714	Mainline	2.34		2.63E-03		5.54E-03		3.13E-02		4.91E-02		1.08E-02		0.71	
2669717	Freight Corridor Mainline	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0.00
2669718	SB Frt Corr Off	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.4	2.0
2669748	End of Frt Corridor Mainline	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.7	4.1
2669749	Mainline	0.37		4.19E-04		8.83E-04		5.00E-03		7.82E-03		1.73E-03		0.65	
2669750	Frt Corr NB On	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.7	3.4
2669751	Mainline	1.07		1.20E-03		2.54E-03		1.43E-02		2.25E-02		4.95E-03		0.37	
2669759	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669760	Patata On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.38	
2669761	Freight Corridor Mainline	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0.00
2669763	Patata Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.41	
2669764	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669766	SR 91 EB Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		1.5	
2669768	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669769	WB SR 91 On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.92	
2669788	Mainline	1.42		1.59E-03		3.35E-03		1.89E-02		2.96E-02		6.54E-03		1.2	
88573	Mainline	2.69	1.87	3.01E-03	2.10E-03	6.35E-03	4.43E-03	3.59E-02	2.51E-02	5.63E-02	3.92E-02	1.24E-02	8.65E-03	1.7	1.19
2669551	Mainline	3.64	2.76	4.08E-03	3.09E-03	8.60E-03	6.51E-03	4.86E-02	3.69E-02	7.61E-02	5.77E-02	1.68E-02	1.27E-02	1.4	1.1
2669553	Mainline	1.32	1.10	1.48E-03	1.23E-03	3.13E-03	2.60E-03	1.77E-02	1.47E-02	2.77E-02	2.30E-02	6.10E-03	5.07E-03	0.91	0.76
2669556	Mainline	0.97	0.99	1.09E-03	1.12E-03	2.29E-03	2.35E-03	1.30E-02	1.33E-02	2.03E-02	2.08E-02	4.48E-03	4.59E-03	0.62	0.64
2669699	Mainline	0.97	1.15	1.09E-03	1.29E-03	2.29E-03	2.71E-03	1.30E-02	1.53E-02	2.03E-02	2.40E-02	4.48E-03	5.29E-03	0.71	0.84

Table C.5-6. Alternative 6C Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
14541	Mainline	2.05		2.29E-03		4.84E-03		2.74E-02		4.28E-02		9.45E-03		0.95	
14604	Mainline	1.43		1.60E-03		3.37E-03		1.91E-02		2.98E-02		6.58E-03		1.2	
14610	Mainline	3.42		3.84E-03		8.09E-03		4.58E-02		7.16E-02		1.58E-02		1.7	
14700	Mainline	3.08		3.46E-03		7.28E-03		4.12E-02		6.45E-02		1.42E-02		2.5	
14705	Mainline	1.77		1.98E-03		4.17E-03		2.36E-02		3.70E-02		8.15E-03		0.86	
14712	Mainline	1.15		1.29E-03		2.73E-03		1.54E-02		2.42E-02		5.33E-03		1.2	
14729	Mainline	0.44		4.91E-04		1.04E-03		5.86E-03		9.17E-03		2.02E-03		0.72	
14740	Mainline	3.02		3.39E-03		7.14E-03		4.04E-02		6.32E-02		1.39E-02		2.0	
14748	Mainline	0.80		8.93E-04		1.88E-03		1.07E-02		1.67E-02		3.68E-03		0.50	
14761	Mainline	1.48		1.67E-03		3.51E-03		1.99E-02		3.11E-02		6.86E-03		0.93	
14768	Mainline	0.82		9.22E-04		1.94E-03		1.10E-02		1.72E-02		3.79E-03		0.73	
14775	Mainline	0.93		1.04E-03		2.19E-03		1.24E-02		1.94E-02		4.28E-03		0.55	
14776	Mainline	2.67		3.00E-03		6.31E-03		3.57E-02		5.59E-02		1.23E-02		2.2	
14784	Mainline	0.87		9.77E-04		2.06E-03		1.16E-02		1.82E-02		4.02E-03		1.0	
14790	Mainline	1.95		2.18E-03		4.60E-03		2.60E-02		4.08E-02		8.99E-03		1.3	
14791	Mainline	0.90		1.01E-03		2.13E-03		1.21E-02		1.89E-02		4.16E-03		0.80	
14794	Mainline	0.68		7.57E-04		1.60E-03		9.03E-03		1.41E-02		3.12E-03		0.52	
14799	Mainline	0.26		2.93E-04		6.17E-04		3.49E-03		5.46E-03		1.20E-03		0.15	
14828	Mainline	0.79		8.86E-04		1.87E-03		1.06E-02		1.65E-02		3.65E-03		0.59	
14858	Mainline	1.71		1.92E-03		4.04E-03		2.28E-02		3.57E-02		7.88E-03		2.0	
14864	Mainline	0.35		3.94E-04		8.31E-04		4.70E-03		7.36E-03		1.62E-03		0.57	
14886	Mainline	0.27		3.02E-04		6.36E-04		3.60E-03		5.63E-03		1.24E-03		0.08	
14898	Mainline	3.47		3.89E-03		8.21E-03		4.64E-02		7.27E-02		1.60E-02		2.0	
14944	Mainline	1.38		1.54E-03		3.25E-03		1.84E-02		2.88E-02		6.35E-03		1.4	
14964	Mainline	1.63		1.83E-03		3.85E-03		2.18E-02		3.41E-02		7.51E-03		1.5	
14991	Mainline	1.17		1.32E-03		2.77E-03		1.57E-02		2.46E-02		5.42E-03		0.66	
15081	Mainline	3.07		3.44E-03		7.25E-03		4.10E-02		6.42E-02		1.42E-02		2.0	
15102	Mainline	0.70		7.82E-04		1.65E-03		9.32E-03		1.46E-02		3.22E-03		0.84	
15182	Mainline	2.41		2.70E-03		5.70E-03		3.22E-02		5.05E-02		1.11E-02		3.1	
15209	Mainline	1.13		1.27E-03		2.67E-03		1.51E-02		2.37E-02		5.22E-03		0.70	
15290	Mainline	1.36		1.53E-03		3.22E-03		1.82E-02		2.85E-02		6.29E-03		1.2	
15352	Mainline	1.04		1.17E-03		2.46E-03		1.39E-02		2.18E-02		4.81E-03		0.88	
15353	Mainline	1.81		2.03E-03		4.27E-03		2.42E-02		3.78E-02		8.34E-03		2.9	
15393	Mainline	2.38		2.67E-03		5.63E-03		3.18E-02		4.98E-02		1.10E-02		1.8	
15412	Mainline	1.31		1.47E-03		3.10E-03		1.75E-02		2.74E-02		6.05E-03		2.1	
15433	Mainline	1.02		1.15E-03		2.42E-03		1.37E-02		2.14E-02		4.73E-03		0.98	
15489	Mainline	1.36		1.52E-03		3.21E-03		1.82E-02		2.84E-02		6.27E-03		2.3	
15497	Mainline	0.27		3.03E-04		6.39E-04		3.61E-03		5.66E-03		1.25E-03		0.36	
15536	Mainline	1.18		1.32E-03		2.79E-03		1.58E-02		2.47E-02		5.45E-03		2.4	
15549	Mainline	0.77		8.59E-04		1.81E-03		1.02E-02		1.60E-02		3.53E-03		1.0	
15552	Mainline	0.76		8.50E-04		1.79E-03		1.01E-02		1.59E-02		3.50E-03		1.9	
15581	Mainline	1.26		1.41E-03		2.97E-03		1.68E-02		2.63E-02		5.80E-03		2.2	

Table C.5-6. Alternative 6C Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
15586	Mainline	0.62		6.91E-04		1.46E-03		8.24E-03		1.29E-02		2.85E-03		1.5	
15588	Mainline	0.21		2.30E-04		4.86E-04		2.75E-03		4.30E-03		9.49E-04		0.48	
15591	Mainline	0.92		1.03E-03		2.17E-03		1.23E-02		1.92E-02		4.23E-03		1.8	
15615	Mainline	0.70		7.90E-04		1.67E-03		9.42E-03		1.47E-02		3.25E-03		1.7	
15655	Mainline	1.65		1.85E-03		3.89E-03		2.20E-02		3.45E-02		7.60E-03		3.0	
15700	Mainline	1.57		1.76E-03		3.71E-03		2.10E-02		3.29E-02		7.25E-03		3.5	
15749	Mainline	2.64		2.96E-03		6.24E-03		3.53E-02		5.53E-02		1.22E-02		5.2	
15782	Mainline	1.76		1.97E-03		4.15E-03		2.35E-02		3.68E-02		8.11E-03		3.9	
15785	Mainline	1.39		1.56E-03		3.29E-03		1.86E-02		2.92E-02		6.43E-03		3.4	
15915	Mainline	0.65		7.25E-04		1.53E-03		8.65E-03		1.35E-02		2.99E-03		1.5	
15954	Mainline	1.71		1.92E-03		4.04E-03		2.28E-02		3.58E-02		7.89E-03		3.6	
16041	Mainline	1.84		2.06E-03		4.34E-03		2.46E-02		3.85E-02		8.48E-03		7.1	
16042	Mainline	0.33		3.74E-04		7.88E-04		4.46E-03		6.98E-03		1.54E-03		1.0	
16050	Mainline	2.98		3.35E-03		7.05E-03		3.99E-02		6.25E-02		1.38E-02		8.5	
16053	Mainline	1.13		1.26E-03		2.66E-03		1.51E-02		2.36E-02		5.20E-03		3.6	
16086	Mainline	1.18		1.32E-03		2.79E-03		1.58E-02		2.47E-02		5.45E-03		3.6	
16121	Mainline	1.23		1.38E-03		2.91E-03		1.65E-02		2.58E-02		5.68E-03		4.2	
16123	Mainline	1.03		1.16E-03		2.45E-03		1.38E-02		2.17E-02		4.78E-03		3.5	
16134	Mainline	0.07		7.94E-05		1.67E-04		9.46E-04		1.48E-03		3.27E-04		0.21	
16135	Mainline	0.01		1.54E-05		3.24E-05		1.83E-04		2.87E-04		6.33E-05		0.05	
16152	Shoreline On	0.81		9.09E-04		1.92E-03		1.08E-02		1.70E-02		3.74E-03		0.23	
16168	Mainline	0.18		2.03E-04		4.29E-04		2.42E-03		3.80E-03		8.37E-04		2.2	
16185	Mainline	0.31		3.44E-04		7.25E-04		4.10E-03		6.42E-03		1.42E-03		0.90	
16187	Mainline	0.07		8.20E-05		1.73E-04		9.78E-04		1.53E-03		3.38E-04		0.56	
16199	Shoreline Off	0.13		1.43E-04		3.01E-04		1.70E-03		2.67E-03		5.88E-04		0.07	
16237	Mainline	0.96		1.08E-03		2.28E-03		1.29E-02		2.02E-02		4.45E-03		2.6	
16247	Mainline	1.76		1.97E-03		4.15E-03		2.35E-02		3.68E-02		8.11E-03		4.2	
16254	Mainline	0.56		6.23E-04		1.31E-03		7.42E-03		1.16E-02		2.56E-03		1.7	
16266	Mainline	0.64		7.17E-04		1.51E-03		8.56E-03		1.34E-02		2.95E-03		2.2	
88574	Mainline	0.59		6.67E-04		1.41E-03		7.96E-03		1.25E-02		2.75E-03		0.17	
88575	Mainline	3.35		3.76E-03		7.93E-03		4.49E-02		7.02E-02		1.55E-02		3.2	
88576	Mainline	3.43		3.85E-03		8.10E-03		4.59E-02		7.18E-02		1.58E-02		1.5	
97956	Mainline	0.25		2.77E-04		5.83E-04		3.30E-03		5.16E-03		1.14E-03		2.5	
127416	Mainline	1.22		1.37E-03		2.88E-03		1.63E-02		2.55E-02		5.63E-03		2.3	
127435	Mainline	0.07		7.39E-05		1.56E-04		8.82E-04		1.38E-03		3.04E-04		0.67	
127443	Mainline	0.22		2.50E-04		5.27E-04		2.98E-03		4.67E-03		1.03E-03		1.8	
1643216	Mainline	0.07		7.63E-05		1.61E-04		9.10E-04		1.42E-03		3.14E-04		0.96	
1656691	Mainline	0.60		6.75E-04		1.42E-03		8.05E-03		1.26E-02		2.78E-03		2.1	
1657648	Mainline	1.67		1.88E-03		3.96E-03		2.24E-02		3.50E-02		7.73E-03		2.2	
1657653	Mainline	0.29		3.28E-04		6.92E-04		3.92E-03		6.13E-03		1.35E-03		0.68	
1657654	Mainline	0.47		5.32E-04		1.12E-03		6.34E-03		9.92E-03		2.19E-03		0.97	
1657662	Mainline	1.74		1.95E-03		4.12E-03		2.33E-02		3.65E-02		8.05E-03		4.4	

Table C.5-6. Alternative 6C Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
1657665	Mainline	0.23		2.60E-04		5.48E-04		3.10E-03		4.85E-03		1.07E-03		0.54	
1657668	Mainline	1.27		1.42E-03		3.00E-03		1.70E-02		2.65E-02		5.85E-03		4.8	
1658094	Mainline	0.21		2.31E-04		4.86E-04		2.75E-03		4.30E-03		9.49E-04		0.69	
1658097	Mainline	0.19		2.15E-04		4.53E-04		2.57E-03		4.02E-03		8.86E-04		0.64	
2669480	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669481	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669482	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669483	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669484	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669485	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669486	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669487	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669488	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669489	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669494	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669495	Pico Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669498	Pico On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.53	
2669502	Harbour Scenic On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.33	
2669505	Frt Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.28	
2669511	Pico On Freight Corridor	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.26	
2669512	Pico Off Freight Corridor	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.08	
2669523	Anaheim On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		1.1	
2669524	Anaheim Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.43	
2669548	Mainline	1.86		2.08E-03		4.39E-03		2.48E-02		3.89E-02		8.57E-03		0.51	
2669564	Mainline	1.51		1.69E-03		3.57E-03		2.02E-02		3.16E-02		6.97E-03		0.98	
2669594	Mixed Flow Pico On	0.03		2.88E-05		6.07E-05		3.44E-04		5.38E-04		1.19E-04		0.19	
2669598	Mainline	0.10		1.16E-04		2.45E-04		1.38E-03		2.17E-03		4.78E-04		0.64	
2669599	Shoreline Off	0.45		5.00E-04		1.05E-03		5.97E-03		9.34E-03		2.06E-03		0.23	
2669600	Shoreline Off	0.96		1.07E-03		2.26E-03		1.28E-02		2.00E-02		4.41E-03		0.49	
2669601	Mainline	0.08		9.10E-05		1.92E-04		1.09E-03		1.70E-03		3.75E-04		0.74	
2669604	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669606	SB Frt Corr On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.72	
2669608	Mainline	0.28		3.18E-04		6.71E-04		3.80E-03		5.94E-03		1.31E-03		0.81	
2669612	Mainline	0.77		8.59E-04		1.81E-03		1.02E-02		1.60E-02		3.53E-03		2.4	
2669619	SB Frt Corr to GP On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.54	
2669628	Mainline	0.37		4.18E-04		8.81E-04		4.99E-03		7.81E-03		1.72E-03		0.63	
2669632	Mainline	0.39		4.42E-04		9.31E-04		5.27E-03		8.25E-03		1.82E-03		0.99	
2669643	Mainline	0.75		8.38E-04		1.77E-03		1.00E-02		1.57E-02		3.45E-03		0.75	
2669645	Mainline	1.73		1.94E-03		4.10E-03		2.32E-02		3.63E-02		8.00E-03		0.97	
2669651	Mainline	1.68		1.88E-03		3.97E-03		2.25E-02		3.52E-02		7.76E-03		0.89	
2669653	Mainline	0.48		5.42E-04		1.14E-03		6.47E-03		1.01E-02		2.23E-03		0.44	
2669659	Mainline	1.04		1.17E-03		2.47E-03		1.40E-02		2.19E-02		4.82E-03		0.48	

Table C.5-6. Alternative 6C Total Organic Gas (TOG) and Mobile Source Air Toxic Mass (MSAT) Emissions for Post Processed Traffic Links of the I-710 Freeway

Link ID	Segment Description	TOG (lb/day)		MSAT Daily Mass Emissions (lb/day)											
		Catalytic Exhaust		Acrolein		Acetylaldehyde		Formaldehyde		Benzene		1,3-Butadiene		Diesel Particulate Matter	
		Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2
2669661	Mainline	0.68		7.63E-04		1.61E-03		9.10E-03		1.42E-02		3.14E-03		0.56	
2669676	Mainline	0.45		5.08E-04		1.07E-03		6.06E-03		9.48E-03		2.09E-03		0.13	
2669677	SB Mixed Flow Washington Ramp On (FC trips only)	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.89	0.50
2669687	Mainline	0.68		7.57E-04		1.60E-03		9.03E-03		1.41E-02		3.12E-03		0.52	
2669689	Mainline	0.08		9.29E-05		1.96E-04		1.11E-03		1.73E-03		3.82E-04		0.97	
2669696	NB Frt Corr Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.70	
2669697	Mainline	0.73		8.17E-04		1.72E-03		9.74E-03		1.52E-02		3.36E-03		1.6	
2669698	Freight Corridor Mainline	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.62	0.62
2669704	Mainline	1.16		1.30E-03		2.74E-03		1.55E-02		2.43E-02		5.36E-03		1.8	
2669712	SB MF Washinton Ramp to Frt Corr On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.16	
2669714	Mainline	2.39		2.68E-03		5.64E-03		3.19E-02		5.00E-02		1.10E-02		0.94	
2669717	Freight Corridor Mainline	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0.00
2669718	SB Frt Corr Off	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.2	1.8
2669748	End of Frt Corridor Mainline	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.8	3.4
2669749	Mainline	0.37		4.19E-04		8.82E-04		4.99E-03		7.82E-03		1.72E-03		0.60	
2669750	Frt Corr NB On	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.4	3.2
2669751	Mainline	1.12		1.26E-03		2.65E-03		1.50E-02		2.35E-02		5.18E-03		0.50	
2669759	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669760	Patata On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.26	
2669761	Freight Corridor Mainline	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0.00
2669763	Patata Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.36	
2669764	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669766	SR 91 EB Off	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.88	
2669768	Freight Corridor Mainline	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00	
2669769	WB SR 91 On	0.00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.69	
2669788	Mainline	1.44		1.61E-03		3.40E-03		1.92E-02		3.01E-02		6.64E-03		0.96	
88573	Mainline	2.71	1.89	3.04E-03	2.12E-03	6.41E-03	4.47E-03	3.62E-02	2.53E-02	5.67E-02	3.96E-02	1.25E-02	8.72E-03	2.2	1.5
2669551	Mainline	3.71	2.81	4.16E-03	3.15E-03	8.77E-03	6.64E-03	4.96E-02	3.76E-02	7.76E-02	5.88E-02	1.71E-02	1.30E-02	1.8	1.3
2669553	Mainline	1.34	1.11	1.50E-03	1.25E-03	3.17E-03	2.63E-03	1.79E-02	1.49E-02	2.81E-02	2.33E-02	6.19E-03	5.14E-03	1.1	0.88
2669556	Mainline	0.99	1.01	1.11E-03	1.14E-03	2.33E-03	2.39E-03	1.32E-02	1.35E-02	2.07E-02	2.12E-02	4.56E-03	4.67E-03	0.71	0.72
2669699	Mainline	0.98	1.16	1.10E-03	1.30E-03	2.31E-03	2.73E-03	1.31E-02	1.55E-02	2.05E-02	2.42E-02	4.52E-03	5.34E-03	0.81	0.96

Table C.6-1. Total Organic Gas (TOG) Speciation Profiles Used to Calculate Mobile Source Air Toxic (MSAT) Emissions for the I-710 Corridor EIR/EIS

ARB Profile ID		ARB # 2108	ARB # 2120	ARB # 665	ARB # 660	ARB # 818 ³
ARB Profile Name		Cat stabilized exhaust 2008 SSD EtOH 2% O (MTBE phase-out)	Cat stabilized exhaust 2020 SSD EtOH 2% O (MTBE phaseout) ¹	Non-cat stabilized exhaust 1996 SSD 2.0% O EtOH (MTBE phase-out)	Liquid gasoline 1996 SSD 2.0% O EtOH (MTBE phase-out)	Farm equipment - diesel - light & heavy - (ems=actual weight)
Applied to:		Onroad catalyst-equipped gasoline vehicles (2008)	Onroad catalyst-equipped gasoline vehicles (2035)	Onroad non-catalyst equipped gasoline vehicles (2008 only) ²	Evaporative emissions from gasoline vehicles	Onroad diesel vehicles (2008 and 2035) and Diesel construction equipment
CHEMICAL NAME	CAS	wt fraction				
1,3-butadiene	106990	0.0053	0.0046	0.0083	-	0.0019
acetaldehyde	75070	0.0027	0.0024	0.0098	-	0.0735
benzene	71432	0.0240	0.0209	0.0338	0.01	0.0200
formaldehyde	50000	0.0153	0.0134	0.0300	-	0.1471
acrolein (2-propenal)	107028	0.0013	0.0011	0.0018	-	-

Notes:

¹ The ARB speciation database cross-reference list for speciation profiles and source categories provides data till year 2030, and the ARB profile #2120 is for gasoline mobile source categories for year 2030. It is assumed that the speciation profile ARB#2120 will be applicable for gasoline mobile sources in 2035.

² It is assumed that all "Non-catalyst" vehicles will be phased out by year 2035.

³ This speciation profile for diesel exhaust will be used for calculating acute health impacts only, as diesel particulate matter (DPM) will be used as a surrogate for calculating cancer and chronic risks.

Table C.7-1A. Incremental Criteria Pollutant Mass Emissions within the South Coast Air Basin as compared to 2008 Baseline

Pollutant	Alternative 1 versus 2008 Baseline		Alternative 5A versus 2008 Baseline		Alternative 6A versus 2008 Baseline		Alternative 6B versus 2008 Baseline		Alternative 6C versus 2008 Baseline		SCAQMD CEQA Mass Emission Thresholds (lb/day)
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	
NO _x	-872165	-84%	-872384	-84%	-872521	-84%	-876763	-85%	-875802	-85%	55
CO	-2004776	-70%	-2004602	-70%	-2005118	-70%	-2007541	-70%	-2006899	-70%	550
PM ₁₀ (Total)	23405	15%	23402	15%	23578	15%	23272	15%	23290	15%	150
PM ₁₀ (Exhaust)	-9476	-16%	-9446	-16%	-9440	-16%	-9774	-17%	-9701	-16%	-
PM ₁₀ (Entrained)	32881	34%	32849	34%	33018	34%	33046	35%	32991	34%	-
PM ₂₅ (Total)	-2282	-3%	-2271	-3%	-2237	-3%	-2485	-4%	-2442	-4%	55
PM ₂₅ (Exhaust)	-10353	-24%	-10334	-24%	-10342	-24%	-10596	-24%	-10540	-24%	-
PM ₂₅ (Entrained)	8071	34%	8063	34%	8104	34%	8111	35%	8098	34%	-
ROG	-165064	-70%	-164927	-70%	-165435	-70%	-165741	-71%	-165654	-71%	55
SO ₂	1276	33%	1275	33%	1269	33%	1245	32%	1251	32%	150

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor. Entrained dust (both PM₁₀ and PM_{2.5}) occur in all Alternatives. Emissions based on the I-710 Traffic Model data.

Table C.7-1B. Incremental Criteria Pollutant Mass Emissions within the Area of Interest (AOI) as compared to 2008 Baseline

Pollutant	Alternative 1 versus 2008 Baseline		Alternative 5A versus 2008 Baseline		Alternative 6A versus 2008 Baseline		Alternative 6B versus 2008 Baseline		Alternative 6C versus 2008 Baseline	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
NO _x	-195862	-82%	-195919	-82%	-195717	-82%	-199893	-84%	-199062	-83%
CO	-507668	-74%	-507634	-74%	-507236	-74%	-509573	-74%	-509082	-74%
PM ₁₀ (Total)	1795	5%	1896	5%	2129	6%	1817	5%	1844	5%
PM ₁₀ (Exhaust)	-3399	-24%	-3377	-24%	-3307	-24%	-3637	-26%	-3570	-26%
PM ₁₀ (Entrained)	5194	23%	5273	23%	5436	24%	5454	24%	5413	24%
PM ₂₅ (Total)	-1967	-12%	-1936	-12%	-1851	-11%	-2099	-13%	-2057	-13%
PM ₂₅ (Exhaust)	-3242	-31%	-3231	-31%	-3186	-30%	-3437	-33%	-3385	-32%
PM ₂₅ (Entrained)	1275	23%	1294	23%	1334	24%	1339	24%	1329	24%
ROG	-43372	-74%	-43413	-74%	-43592	-74%	-43897	-75%	-43837	-75%
SO ₂	165	18%	164	18%	165	18%	141	15%	146	16%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor. Entrained dust (both PM₁₀ and PM_{2.5}) occur in all Alternatives.

Emissions based on the I-710 Traffic Model data.

Table C.7-1C. Incremental Criteria Pollutant Mass Emissions for the I-710 Freeway as compared to 2008 Baseline

Pollutant	Alternative 1 versus 2008 Baseline		Alternative 5A versus 2008 Baseline		Alternative 6A versus 2008 Baseline		Alternative 6B versus 2008 Baseline		Alternative 6C versus 2008 Baseline	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
NO _x	-12938	-72%	-12636	-70%	-10890	-60%	-14964	-83%	-14448	-80%
CO	-18654	-71%	-17274	-66%	-15730	-60%	-18008	-69%	-17719	-68%
PM ₁₀ (Total)	227	12%	583	31%	1294	68%	1019	54%	919	49%
PM ₁₀ (Exhaust)	-299	-34%	-190	-22%	-11	-1%	-334	-39%	-290	-33%
PM ₁₀ (Entrained)	527	51%	773	75%	1305	127%	1353	132%	1209	118%
PM ₂₅ (Total)	-170	-18%	-36	-4%	230	24%	-4.4	0%	-6.1	-1%
PM ₂₅ (Exhaust)	-300	-43%	-225	-33%	-90	-13%	-337	-49%	-303	-44%
PM ₂₅ (Entrained)	129	51%	190	75%	320	127%	332	132%	297	118%
ROG	-1516	-69%	-1487	-67%	-1330	-60%	-1623	-74%	-1598	-73%
SO ₂	15	38%	23	59%	36	93%	13	33%	15	40%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor. Entrained dust (both PM₁₀ and PM_{2.5}) occur in all Alternatives.

Emissions based on the I-710 Traffic Model data.

Table C.7-2 Incremental Criteria Pollutant Mass Emissions for the I-710 Freeway as Compared to 2008 Baseline, using Post-Processed Traffic Data

Pollutant	Alternative 1 versus 2008 Baseline		Alternative 5A versus 2008 Baseline		Alternative 6A versus 2008 Baseline		Alternative 6B versus 2008 Baseline		Alternative 6C versus 2008 Baseline	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
NO _x	-17560	-73%	-17488	-72%	-15741	-65%	-20214	-84%	-19826	-82%
CO	-18794	-71%	-17359	-65%	-15781	-59%	-18245	-69%	-18002	-68%
PM ₁₀ (Total)	124	5%	443	19%	1128	48%	807	34%	683	29%
<i>PM₁₀ (Exhaust)</i>	-471	-43%	-363	-33%	-188	-17%	-537	-49%	-496	-45%
<i>PM₁₀ (Entrained)</i>	595	48%	806	65%	1316	106%	1344	108%	1179	95%
PM _{2.5} (Total)	-318	-26%	-191	-16%	66	5%	-192	-16%	-201	-17%
<i>PM_{2.5} (Exhaust)</i>	-463	-52%	-389	-43%	-257	-29%	-522	-58%	-491	-55%
<i>PM_{2.5} (Entrained)</i>	146	48%	198	65%	323	106%	330	108%	289	95%
ROG	-1701	-69%	-1679	-68%	-1492	-60%	-1803	-73%	-1813	-73%
SO ₂	17	40%	24	58%	37	89%	12	29%	14	34%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are travelling on the freight corridor. Entrained dust (both PM₁₀ and PM_{2.5}) emissions occur in all alternatives

Emissions based on I-710 Traffic Model data, post-processed to incorporate traffic count information and detailed I-710 geometrics information

**Table C.7-3A. Incremental Criteria Pollutant Mass Emissions within the South Coast Air Basin
as compared to 2035 Alternative 1 (No Build)**

Pollutant	Alternative 5A versus Alternative 1		Alternative 6A versus Alternative 1		Alternative 6B versus Alternative 1		Alternative 6C versus Alternative 1	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
NO _x	-218	0%	-356	0%	-4597	-3%	-3637	-2%
CO	174	0%	-343	0%	-2766	0%	-2123	0%
PM ₁₀ (Total)	-2.7	0%	173	0%	-133	0%	-115	0%
<i>PM₁₀ (Exhaust)</i>	29	0%	35	0%	-298	-1%	-225	0%
<i>PM₁₀ (Entrained)</i>	-32	0%	138	0%	165	0%	110	0%
PM ₂₅ (Total)	11	0%	45	0%	-203	0%	-160	0%
<i>PM₂₅ (Exhaust)</i>	19	0%	11	0%	-243	-1%	-187	-1%
<i>PM₂₅ (Entrained)</i>	-7.9	0%	34	0%	41	0%	27	0%
ROG	137	0%	-371	-1%	-677	-1%	-590	-1%
SO ₂	-1.4	0%	-6.8	0%	-31	-1%	-26	0%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor. Entrained dust (both PM₁₀ and PM_{2.5}) occur in all Alternatives.

Emissions based on the I-710 Traffic Model data.

Table C.7-3B. Incremental Criteria Pollutant Mass Emissions within the Area of Interest (AOI) as compared to 2035 Alternative 1 (No Build)

Pollutant	Alternative 5A versus Alternative 1		Alternative 6A versus Alternative 1		Alternative 6B versus Alternative 1		Alternative 6C versus Alternative 1	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
NO _x	-57	0%	144	0%	-4031	-9%	-3200	-7%
CO	34	0%	431	0%	-1906	-1%	-1415	-1%
PM ₁₀ (Total)	101	0%	334	1%	22	0%	49	0%
<i>PM₁₀ (Exhaust)</i>	22	0%	92	1%	-238	-2%	-171	-2%
<i>PM₁₀ (Entrained)</i>	79	0%	242	1%	260	1%	219	1%
PM ₂₅ (Total)	31	0%	116	1%	-132	-1%	-90	-1%
<i>PM₂₅ (Exhaust)</i>	11	0%	56	1%	-195	-3%	-144	-2%
<i>PM₂₅ (Entrained)</i>	19	0%	59	1%	64	1%	54	1%
ROG	-41	0%	-219	-1%	-525	-3%	-465	-3%
SO ₂	-0.82	0%	0.18	0%	-24	-2%	-19	-2%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor. Entrained dust (both PM₁₀ and PM_{2.5}) occur in all Alternatives.

Emissions based on the I-710 Traffic Model data.

Table C.7-3C. Incremental Criteria Pollutant Mass Emissions for the I-710 Freeway as compared to 2035 Alternative 1 (No Build)

Pollutant	Alternative 5A versus Alternative 1		Alternative 6A versus Alternative 1		Alternative 6B versus Alternative 1		Alternative 6C versus Alternative 1	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
NO _x	302	6%	2048	40%	-2025	-40%	-1510	-30%
CO	1381	18%	2924	39%	647	9%	935	12%
PM ₁₀ (Total)	356	17%	1067	50%	792	37%	692	33%
<i>PM₁₀ (Exhaust)</i>	<i>109</i>	<i>19%</i>	<i>289</i>	<i>51%</i>	<i>-35</i>	<i>-6%</i>	<i>9.3</i>	<i>2%</i>
<i>PM₁₀ (Entrained)</i>	<i>247</i>	<i>16%</i>	<i>779</i>	<i>50%</i>	<i>827</i>	<i>53%</i>	<i>683</i>	<i>44%</i>
PM ₂₅ (Total)	135	17%	401	52%	166	22%	164	21%
<i>PM₂₅ (Exhaust)</i>	<i>74</i>	<i>19%</i>	<i>209</i>	<i>54%</i>	<i>-37</i>	<i>-9%</i>	<i>-3.3</i>	<i>-1%</i>
<i>PM₂₅ (Entrained)</i>	<i>61</i>	<i>16%</i>	<i>191</i>	<i>50%</i>	<i>203</i>	<i>53%</i>	<i>168</i>	<i>44%</i>
ROG	30	4%	186	27%	-107	-16%	-82	-12%
SO ₂	8.1	15%	21	40%	-2.0	-4%	0.59	1%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor. Entrained dust (both PM₁₀ and PM_{2.5}) occur in all Alternatives.

Emissions based on the I-710 Traffic Model data.

Table C.7-4 Incremental Criteria Pollutant Mass Emissions for the I-710 Freeway as Compared to 2035 Alternative 1 (No Build), using Post-Processed Traffic Data

Pollutant	Alternative 5A versus Alternative 1		Alternative 6A versus Alternative 1		Alternative 6B versus Alternative 1		Alternative 6C versus Alternative 1	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
NO _x	72	1%	1819	27%	-2654	-40%	-2267	-34%
CO	1434	18%	3013	39%	549	7%	792	10%
PM ₁₀ (Total)	320	13%	1004	41%	684	28%	560	23%
<i>PM₁₀ (Exhaust)</i>	<i>108</i>	<i>17%</i>	<i>283</i>	<i>45%</i>	<i>-66</i>	<i>-11%</i>	<i>-25</i>	<i>-4%</i>
<i>PM₁₀ (Entrained)</i>	<i>211</i>	<i>12%</i>	<i>721</i>	<i>39%</i>	<i>750</i>	<i>41%</i>	<i>585</i>	<i>32%</i>
PM _{2.5} (Total)	126	14%	383	43%	125	14%	116	13%
<i>PM_{2.5} (Exhaust)</i>	<i>75</i>	<i>17%</i>	<i>206</i>	<i>47%</i>	<i>-59</i>	<i>-13%</i>	<i>-27</i>	<i>-6%</i>
<i>PM_{2.5} (Entrained)</i>	<i>52</i>	<i>12%</i>	<i>177</i>	<i>39%</i>	<i>184</i>	<i>41%</i>	<i>143</i>	<i>32%</i>
ROG	22	3%	209	27%	-102	-13%	-112	-14%
SO ₂	7.8	13%	20	35%	-4.4	-8%	-2.3	-4%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are travelling on the freight corridor. Entrained dust (both PM₁₀ and PM_{2.5}) emissions occur in all alternatives

Emissions based on I-710 Traffic Model data, post-processed to incorporate traffic count information and detailed I-710 geometrics information

Table C.8-1A. Incremental MSAT Mass Emissions within the South Coast Air Basin as Compared to 2008 Baseline

Mobile Source Air Toxic Name	Alternative 1 versus 2008 Baseline		Alternative 5A versus 2008 Baseline		Alternative 6A versus 2008 Baseline		Alternative 6B versus 2008 Baseline		Alternative 6C versus 2008 Baseline	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
Diesel particulate matter	-23,013	-78%	-23,020	-78%	-22,917	-77%	-23,152	-78%	-23,107	-78%
Benzene	-2,979	-87%	-2,979	-87%	-2,981	-87%	-2,981	-87%	-2,981	-87%
Acetaldehyde	-605	-92%	-605	-92%	-605	-92%	-605	-92%	-605	-92%
Formaldehyde	-2,284	-89%	-2,284	-89%	-2,285	-89%	-2,285	-89%	-2,285	-89%
1,3- butadiene	-696	-88%	-696	-88%	-697	-88%	-697	-88%	-697	-88%
Acrolein	-161	-87%	-161	-87%	-161	-87%	-161	-87%	-161	-87%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor.

Emissions based on the I-710 Traffic Model data.

Table C.8-1B. Incremental MSAT Mass Emissions within the Area of Interest (AOI) as Compared to 2008 Baseline

Mobile Source Air Toxic Name	Alternative 1 versus 2008 Baseline		Alternative 5A versus 2008 Baseline		Alternative 6A versus 2008 Baseline		Alternative 6B versus 2008 Baseline		Alternative 6C versus 2008 Baseline	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
Diesel particulate matter	-5,472	-79%	-5,445	-79%	-5,363	-77%	-5,599	-81%	-5,554	-80%
Benzene	-755	-89%	-756	-89%	-757	-89%	-757	-89%	-757	-89%
Acetaldehyde	-151	-93%	-151	-93%	-151	-93%	-151	-93%	-151	-93%
Formaldehyde	-576	-90%	-576	-90%	-577	-90%	-577	-90%	-577	-90%
1,3- butadiene	-176	-89%	-176	-89%	-177	-89%	-177	-89%	-176	-89%
Acrolein	-41	-89%	-41	-89%	-41	-89%	-41	-89%	-41	-89%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor.

Emissions based on the I-710 Traffic Model data.

Table C.8-1C. Incremental MSAT Mass Emissions for the I-710 Freeway as Compared to 2008 Baseline

Mobile Source Air Toxic Name	Alternative 1 versus 2008 Baseline		Alternative 5A versus 2008 Baseline		Alternative 6A versus 2008 Baseline		Alternative 6B versus 2008 Baseline		Alternative 6C versus 2008 Baseline	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
Diesel particulate matter	-392	-65%	-347	-57%	-231	-38%	-463	-76%	-430	-71%
Benzene	-22	-90%	-21	-88%	-21	-87%	-21	-87%	-21	-87%
Acetaldehyde	-4.5	-94%	-4.4	-93%	-4.4	-93%	-4.4	-93%	-4.4	-93%
Formaldehyde	-17	-91%	-16	-90%	-16	-89%	-16	-89%	-16	-89%
1,3- butadiene	-5.1	-90%	-5.0	-89%	-4.9	-88%	-4.9	-88%	-4.9	-88%
Acrolein	-1.2	-90%	-1.1	-88%	-1.1	-87%	-1.1	-87%	-1.1	-87%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor.

Emissions based on the I-710 Traffic Model data.

Table C.8-2 Incremental MSAT Mass Emissions for the I-710 Freeway as Compared to 2008 Baseline, using Post-Processed Traffic Data

Mobile Source Air Toxic (MSAT)	Alternative 1 versus 2008 Baseline		Alternative 5A versus 2008 Baseline		Alternative 6A versus 2008 Baseline		Alternative 6B versus 2008 Baseline		Alternative 6C versus 2008 Baseline	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
Diesel Particulate Matter	-570	-68%	-530	-63%	-414	-49%	-662	-79%	-632	-75%
Benzene	-19	-89%	-19	-87%	-18	-87%	-18	-87%	-18	-87%
Acetaldehyde	-3.9	-94%	-3.9	-93%	-3.9	-92%	-3.9	-92%	-3.9	-92%
Formaldehyde	-15	-91%	-14	-89%	-14	-89%	-14	-89%	-14	-89%
1,3- butadiene	-4.5	-90%	-4.3	-88%	-4.3	-87%	-4.3	-87%	-4.3	-87%
Acrolein	-1.0	-89%	-1.0	-87%	-1.0	-87%	-1.0	-87%	-1.0	-87%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are travelling on the freight corridor. Entrained dust (both PM₁₀ and PM_{2.5}) emissions occur in all alternatives

Emissions based on I-710 Traffic Model data, post-processed to incorporate traffic count information and detailed I-710 geometrics information

**Table C.8-3A. Incremental MSAT Mass Emissions within the South Coast Air Basin as Compared to 2035
Alternative 1 (No Build)**

Mobile Source Air Toxic (MSAT)	Alternative 5A versus Alternative 1		Alternative 6A versus Alternative 1		Alternative 6B versus Alternative 1		Alternative 6C versus Alternative 1	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
Diesel particulate matter	-7.4	0%	96	1%	-139	-2%	-94	-1%
Benzene	0.45	0%	-2.0	0%	-2.0	0%	-1.9	0%
Acetaldehyde	0.05	0%	-0.22	0%	-0.23	0%	-0.21	0%
Formaldehyde	0.29	0%	-1.3	0%	-1.3	0%	-1.2	0%
1,3- butadiene	0.10	0%	-0.44	0%	-0.45	0%	-0.42	0%
Acrolein	0.02	0%	-0.11	0%	-0.11	0%	-0.10	0%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor.

Emissions based on the I-710 Traffic Model data.

**Table C.8-3B. Incremental MSAT Mass Emissions within the Area of Interest (AOI) as Compared to 2035
Alternative 1 (No Build)**

Mobile Source Air Toxic (MSAT)	Alternative 5A versus Alternative 1		Alternative 6A versus Alternative 1		Alternative 6B versus Alternative 1		Alternative 6C versus Alternative 1	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
Diesel particulate matter	27	2%	108	7%	-127	-9%	-82	-6%
Benzene	-0.42	0%	-1.4	-1%	-1.4	-1%	-1.3	-1%
Acetaldehyde	-0.05	0%	-0.15	-1%	-0.15	-1%	-0.14	-1%
Formaldehyde	-0.27	0%	-0.86	-1%	-0.87	-1%	-0.82	-1%
1,3- butadiene	-0.09	0%	-0.30	-1%	-0.30	-1%	-0.28	-1%
Acrolein	-0.02	0%	-0.07	-1%	-0.07	-1%	-0.07	-1%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor.

Emissions based on the I-710 Traffic Model data.

**Table C.8-3C. Incremental MSAT Mass Emissions for the I-710 Freeway as Compared to 2035
Alternative 1 (No Build)**

Mobile Source Air Toxic (MSAT)	Alternative 5A versus Alternative 1		Alternative 6A versus Alternative 1		Alternative 6B versus Alternative 1		Alternative 6C versus Alternative 1	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
Diesel particulate matter	44	21%	161	75%	-71	-33%	-38	-18%
Benzene	0.40	16%	0.57	22%	0.57	22%	0.56	22%
Acetaldehyde	0.04	16%	0.06	22%	0.06	22%	0.06	22%
Formaldehyde	0.25	16%	0.36	22%	0.36	22%	0.35	22%
1,3- butadiene	0.09	16%	0.12	22%	0.12	22%	0.12	22%
Acrolein	0.02	16%	0.03	22%	0.03	22%	0.03	22%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are traveling on the freight corridor.

Emissions based on the I-710 Traffic Model data.

Table C.8-4 Incremental MSAT Mass Emissions for the I-710 Freeway as Compared to 2035 Alternative 1 (No Build), using Post-Processed Traffic Data

Mobile Source Air Toxic (MSAT)	Alternative 5A versus Alternative 1		Alternative 6A versus Alternative 1		Alternative 6B versus Alternative 1		Alternative 6C versus Alternative 1	
	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
Diesel Particulate Matter	40	15%	156	58%	-92	-34%	-63	-23%
Benzene	0.50	22%	0.61	27%	0.58	26%	0.60	26%
Acetaldehyde	0.06	22%	0.07	27%	0.07	26%	0.07	26%
Formaldehyde	0.32	22%	0.39	27%	0.37	26%	0.38	26%
1,3- butadiene	0.11	22%	0.13	27%	0.13	26%	0.13	26%
Acrolein	0.03	22%	0.03	27%	0.03	26%	0.03	26%

Notes:

For Alternatives 6B and 6C, trucks have zero exhaust emissions while they are travelling on the freight corridor. Entrained dust (both PM₁₀ and PM_{2.5}) emissions occur in all alternatives

Emissions based on I-710 Traffic Model data, post-processed to incorporate traffic count information and detailed I-710 geometrics information

Appendix D

Air Dispersion Modeling

D.1 Model Selection

For the past 20 years, refined near-field air dispersion modeling has typically been conducted using USEPA's Industrial Source Complex Short Term (ISCST3) model. However, on November 9, 2005, the USEPA promulgated final revisions to the federal Guideline on Air Quality Models (USEPA, 2005). These revisions recommend that AERMOD, including the plume rise model enhancement (PRIME) building downwash algorithms, be used for dispersion modeling evaluations of criteria air pollutant and toxic air pollutant emissions from typical industrial facilities. As of November 9, 2006, ISCST3 is no longer considered as a USEPA-approved model for certain regulatory applications. AERMOD was developed as a replacement for USEPA's ISCST3 air dispersion model to improve the accuracy of air dispersion model results for routine regulatory applications and to incorporate the progress in scientific knowledge of atmospheric turbulence and dispersion. Both models are near-field, steady-state Gaussian plume models, and use site-representative hourly surface and twice-daily upper air meteorological data to simulate the effects of dispersion of emissions from industrial-type releases (e.g., point, area, and volume) for distances of up to 50 kilometers. AERMOD provides better characterization of plume dispersion than does ISCST3, according to USEPA (2003). The AERMOD model is also recommended by the CARB (CARB, 2006) for goods movement related projects.

ENVIRON used two versions of AERMOD executable computer programs for the I-710 Project to estimate ambient air concentrations at various modeling grid points. Version 07026 of AERMOD was used for all modeling runs conducted prior to 2011 (i.e., for 2008 baseline, 2035 Alt. 1 and 2035 Alt. 5A) and Version 11103 was used for modeling runs conducted during 2011 (i.e., for Alt. 6A, Alt. 6B, and Alt. 6C). It should be noted that ENVIRON performed some comparison model runs using actual model input files developed for the I-710 Project and the two different model executable, and found no appreciable difference in the results between the two versions.

This analysis was conducted using AERMOD in the regulatory default mode, as recommended by USEPA (2005c) and CARB (2006d), with the exception of the parameters discussed later. These defaults include the following modeling control options:

- adjusting stack heights for stack-tip downwash (not applicable to this Project since there are no point sources),
- incorporating the effects of elevated terrain,
- employing the calms processing routine, and
- employing the missing data processing routine.

D.2 Source Parameterization

ENVIRON parameterized the traffic emissions as a series of volume sources in AERMOD spaced at equal distances apart. Conceptually, a volume source mimics an initial, well-mixed plume without buoyancy. A volume source is characterized by an initial lateral and vertical dimension (initial dispersion) and a release height. The values of those parameters were chosen based on a review of treatment of freeway mobile sources in recent CEQA/NEPA EIR/EIS documents related to goods movement in the South Coast (POLA TraPac and POLB Middle Harbor) and to be consistent with available guidance documents. A release height of 4 meters was used for volume sources that represented truck traffic, a release height of 0.6 meters was used for volume sources that represented automobile traffic, and a release height of 0.6 meter was used for volume sources that represented entrained dust. The dimensions of the volume sources were chosen to cover the entire width of a given traffic link; therefore, the widths of the volume sources (and hence the initial lateral dimensions) varied based on the number of lanes in a particular traffic link.

The geometries of the various traffic links in the SCAG traffic model are not spatially accurate. URS has developed accurate geometry of the various I-710 Build alternatives as a part of the engineering/design process using AutoCAD. ENVIRON used these geometrics for volume source placement to have an accurate spatial representation of the Build alternatives. However, it should be noted that the geometrics developed by URS do not have the Link IDs, which are the common data elements that link the emissions and the traffic links. Therefore, ENVIRON used GIS based tools to transcribe the Link IDs onto the geometrics developed by URS using AutoCAD as discussed below.

The northbound and southbound centerlines of the I-710 mainline, freight corridor, freight corridor ramps, and two local ramps (in Segment 1 connecting the mainline to Downtown Long Beach across the Los Angeles River) were extracted from the AutoCAD drawing files and converted to shapefiles in ArcGIS. The 2008 baseline and 2035 Alternative 1 northbound and southbound I-710 mainline were digitized based on the aerial in ArcGIS (I3 Imagery Prime World 2D © 2010 i-cubed). The links were identified in the SCAG network provided by Cambridge Systematics, Inc. as shapefiles for the 2008 baseline and all 2035 Alternatives. The links were transcribed from the SCAG network to the URS design by relating the link nodes (points where one link ends and another link begins) at ramps. A link node is always present where ramps enter or exit the I-710. If the ramps were not in same configuration in the SCAG network as the URS design or a link node is present where there was no ramp, the links were created based on the proportion of the link lengths. In the case where it was evident that the link nodes were geospatially aligned between the SCAG network and URS design, the link node was transferred perpendicularly from the SCAG network to the centerline using the ArcGIS editor. The link ID was then placed into the attribute table of the centerline shapefile. Figure D-1 presents the volume source placement along the I-710 mainline and the Freight Corridor (showing Alternative 6A as an example).

D.3 Land Use

AERMOD takes into consideration heat island effects from urban areas to atmospheric transport and dispersion using an urban boundary layer option. The SCAQMD's AERMOD modeling guidance requires that the emission sources in its jurisdiction be modeled as urban; therefore the "urban" option was selected while running AERMOD. Selection of the urban boundary layer option in AERMOD also requires an estimate of the population of the urban area in order to make adjustments to the urban boundary layer. ENVIRON used the population data for Los Angeles County obtained from SCAQMD AERMOD modeling guidance¹.

¹ Available at http://www.aqmd.gov/smog/metdata/AERMOD_ModelingGuidance.html

D.4 Terrain

Another important consideration in an air dispersion modeling analysis is whether the terrain in the modeling area is simple or complex (i.e., terrain above the effective height of the emission point). ENVIRON used the data available from the USGS National Elevation Dataset (NED)² to obtain elevation data for the entire modeling domain. Terrain elevation data were incorporated into the AERMOD model using version 06341 of AERMAP, which is AERMOD's terrain preprocessor. The elevation data for the volume sources were derived from the profile data provided by URS.

² National Elevation Dataset available from <http://seamless.usgs.gov>, Accessed July 2009.

D.5 Receptor Locations

The following types of receptors were used in the air dispersion modeling:

- Grid receptors were placed in the model within the Area of Interest based on preliminary coarse model run results (See Figure D-2). Receptor spacing was densest near the I-710 freeway (i.e., the source of the modeled emissions). Receptor spacing was less dense further away from the freeway because dispersion reduces concentration impacts and gradients. This is consistent with common modeling protocol and is similar to the approach in other goods movement projects referenced above (POLA TraPac, POLB Middle Harbor). Receptors were spaced at the following intervals:
 - 100 meter by 100 meter grid for a distance of up to 500 meters from the I-710 freeway.
 - 250 meter by 250 meter grid for a distance from 500 meter to 2.5 kilometers (km) from the I-710 freeway, and
 - 500 meter by 500 meter grid for a distance from 2.5 km to 5 km from the I-710 freeway
- Discrete receptors were placed at 'sensitive' receptors. For a Health Risk Assessment, the SCAQMD identifies the following as sensitive receptors:
 - Long-term health care facilities,
 - Rehabilitation centers,
 - Retirement homes,
 - Schools, and
 - Child care centers.

The following websites were used to identify sensitive receptors that were located in Los Angeles County:

- *Day Care and Child Care Centers:*
Community Care Licensing Division
http://www.cclld.ca.gov/docs/cclld_search/cclld_search.aspx
- *Health Care Centers:*
http://www.oshpd.ca.gov/General_Info/Healthcare_Atlas.html
- *Schools:*
School locations provided in the form of point place markers in geographic information systems (GIS) data file provided by ESRI ArcGIS 10 Data and Maps for ArcGIS.
Geographic Names Information System (GNIS) (USGS - GNIS) for the years 1974 – 2007.

- *Nursing and Convalescent Centers:*

Medicare website at

<http://www.medicare.gov/NHCompare/Include/DataSection/Questions/HomeSelect.asp>

- *Senior Centers:*

Community Care Licensing Division website at

http://www.cclcd.ca.gov/docs/cclcd_search/cclcd_search.aspx

The address records provided through each public website resource listed above were organized into excel tables and imported into Google Earth Pro to be *geocoded* (i.e., locating each address as a “place marker point”). Using Google Earth Pro, these lists of addresses were batch-located into a map layer that was converted into ArcGIS data using a tool from Arc2Earth (this tool imports Google Earth “place marker point” locations of each address as a GIS point location) resulting in the sensitive receptor dataset. Using each sensitive receptor dataset, a *buffer tool* was used in ArcGIS to filter sensitive receptor locations that were located within 5 kilometers from the Project (I-710 freeway).

It should be noted that a total of 719 sensitive receptors were identified and modeled prior to 2011. During the 2011 update, ENVIRON identified an additional 454 sensitive receptors in the general study area. These additional 454 receptors were not explicitly modeled for the 2011 model runs (Alternatives 6A, 6B, and 6C) because there are no comparable 2008 baseline or 2035 Alternative 1 explicit model results at those receptors (which were identified after modeling was completed in 2010). Model results and related impacts at those 454 receptors can be evaluated through spatial interpolation of the results at nearby grid receptors. The locations of all 1173 sensitive receptors are presented on Figure D-3.

D.6 Meteorological Data

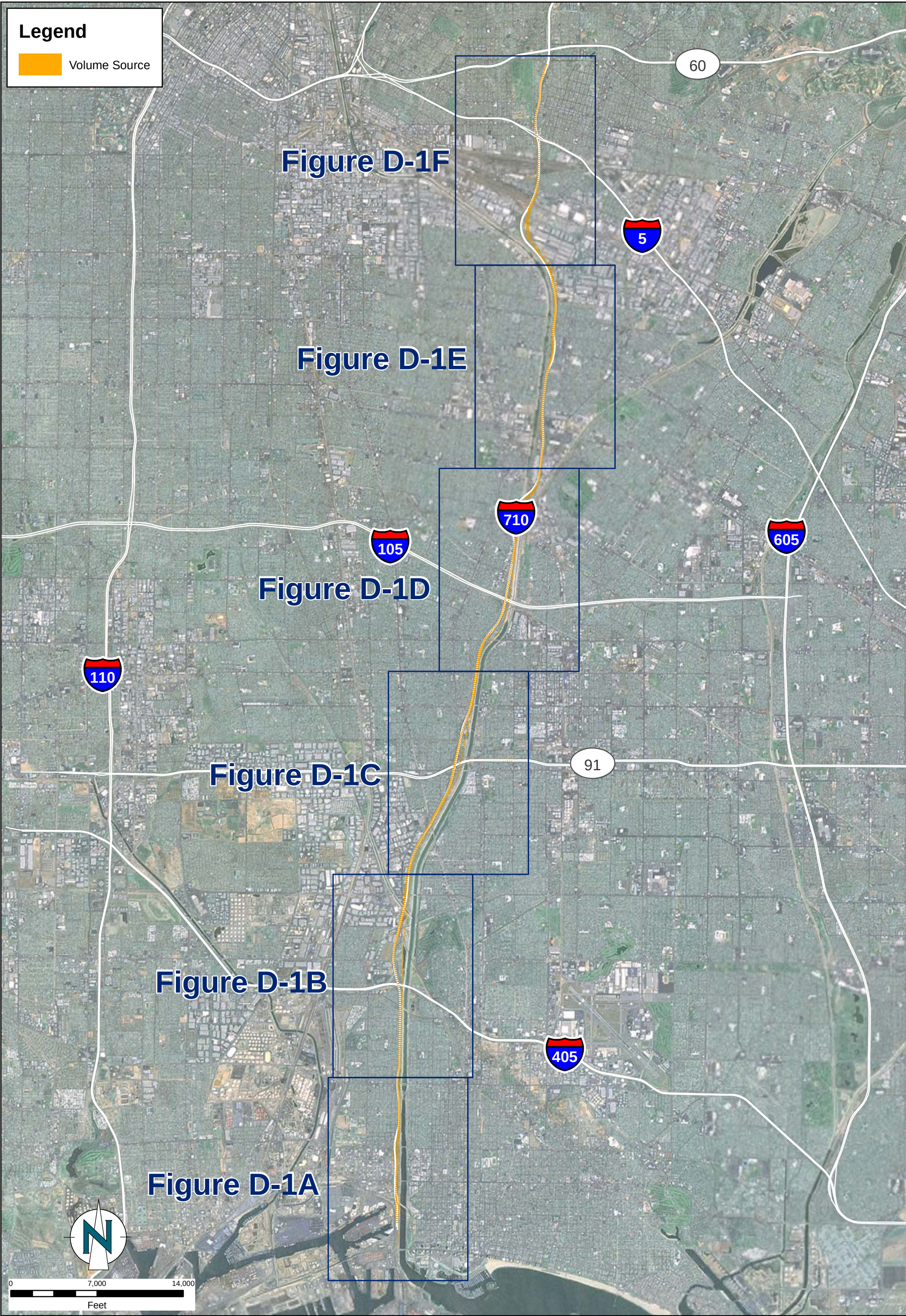
AERMOD requires meteorological inputs to characterize the transport and dispersion of pollutants in the atmosphere. Surface and upper air meteorological data inputs, along with surface parameter data describing the land use and surface characteristics in the Project area, are first processed using AERMET, the meteorological preprocessor for AERMOD. The output files generated by AERMET (surface and profile files) are the meteorological input files required by AERMOD. The purpose of the air quality modeling is to assess the potential air quality impacts along the I-710 corridor. As such, ENVIRON selected the meteorological data for air dispersion modeling based upon their spatial representativeness of conditions in the immediate vicinity of the I-710. Attachment 1 to this Appendix presents a detailed discussion on meteorological data selection and AERMET processing.

D.7 References

United States Environmental Protection Agency (USEPA). 2005. Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions; Final Rule. 40 CFR Part 51. November 5, 2005.

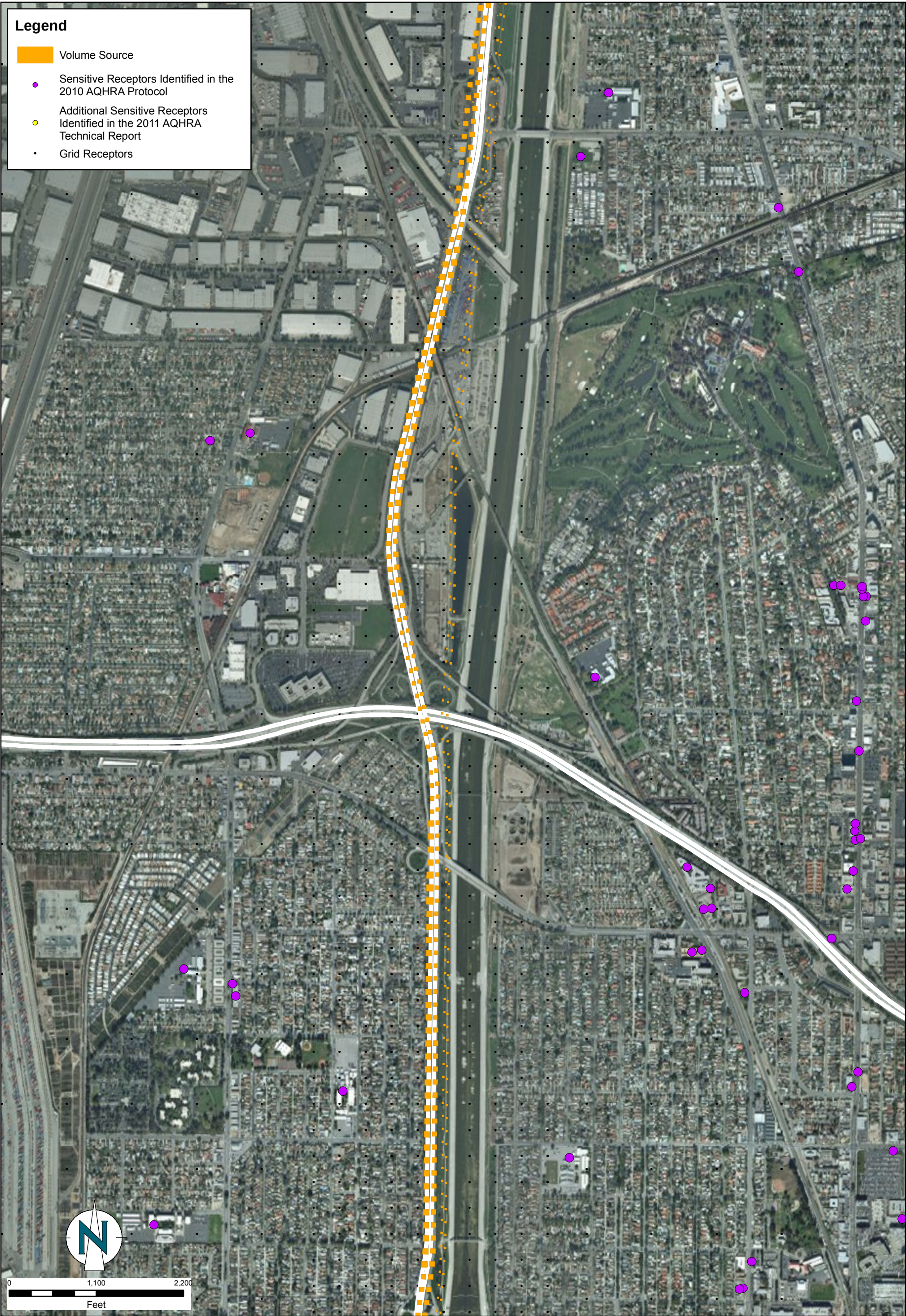
---. 2003. AERMOD: Latest Features and Evaluation Results. June, 2003.

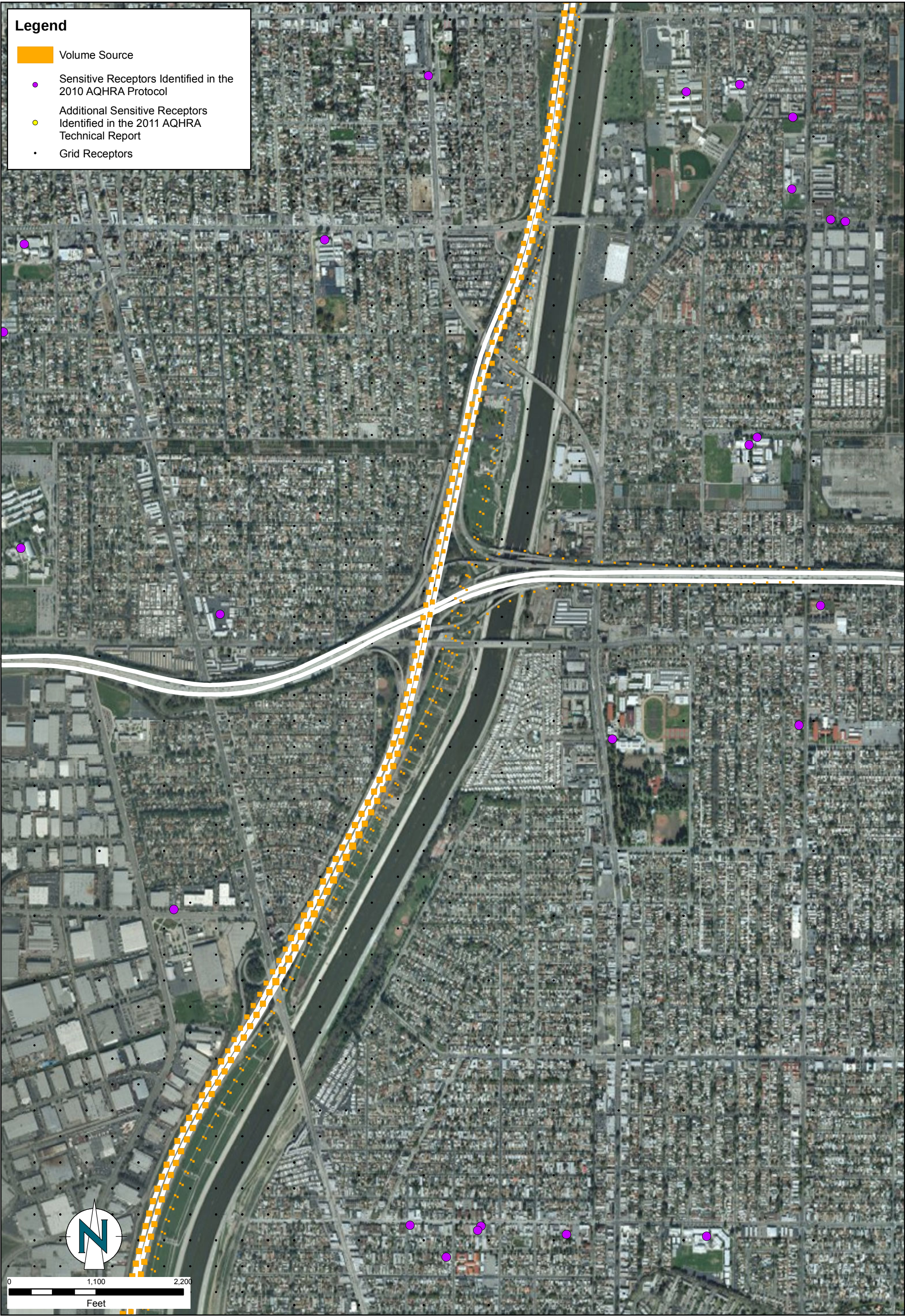
California Air Resources Board (CARB). 2006. Health Risk Assessment Guidance for Rail Yard and Intermodal Facilities (Preliminary Draft). July 2006,
(http://www.arb.ca.gov/railyard/hra/071806hra_guideline.pdf)

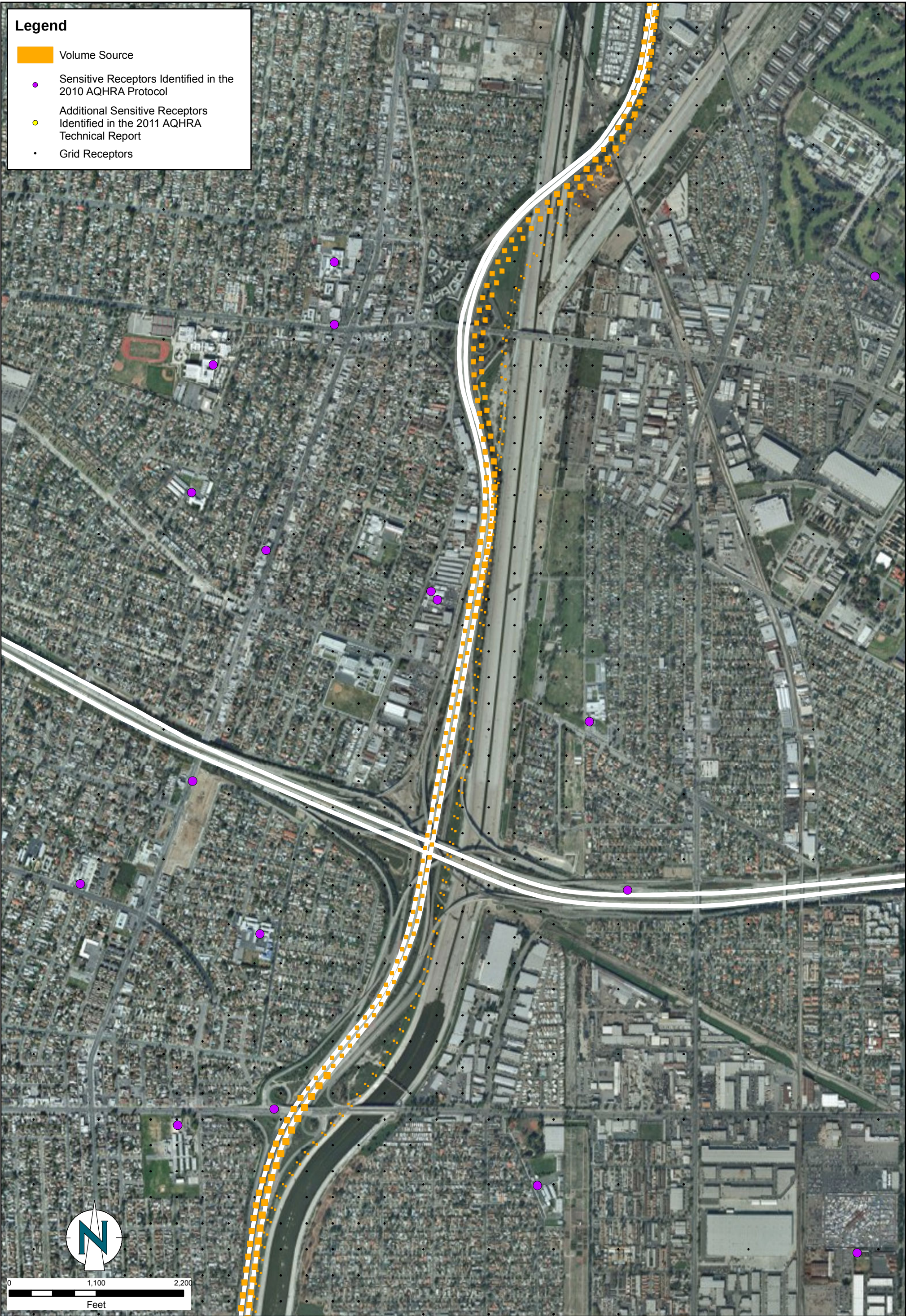


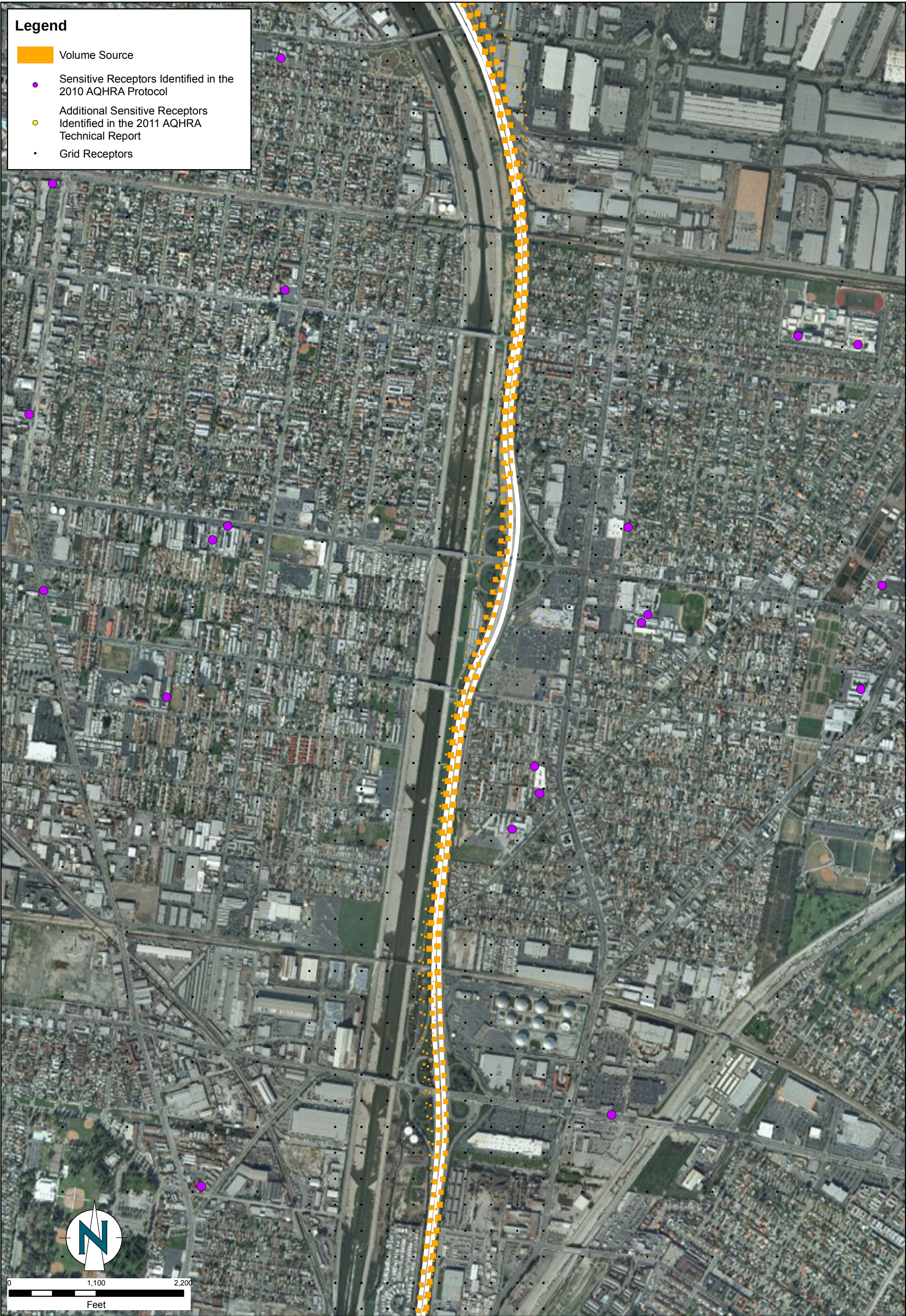
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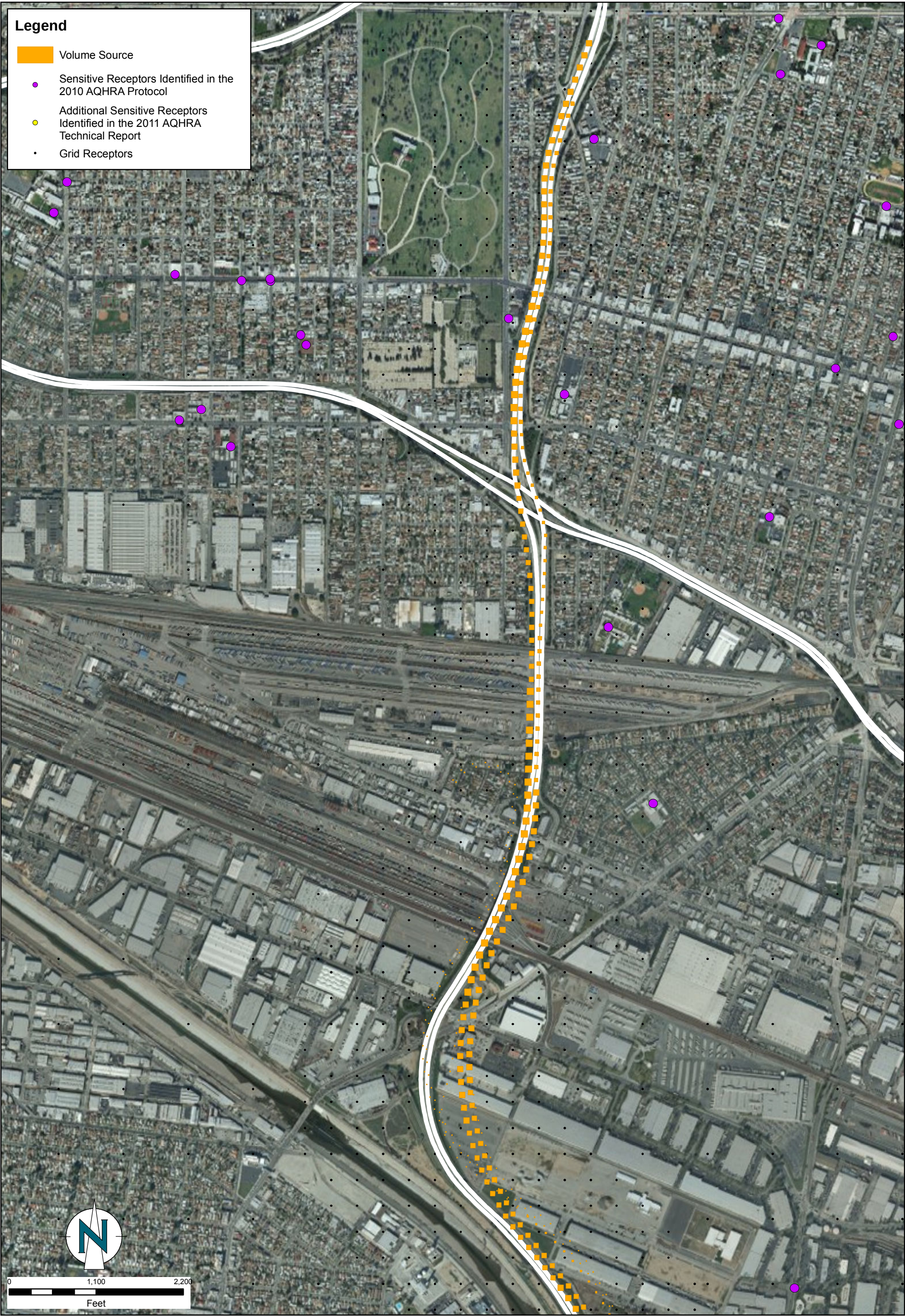


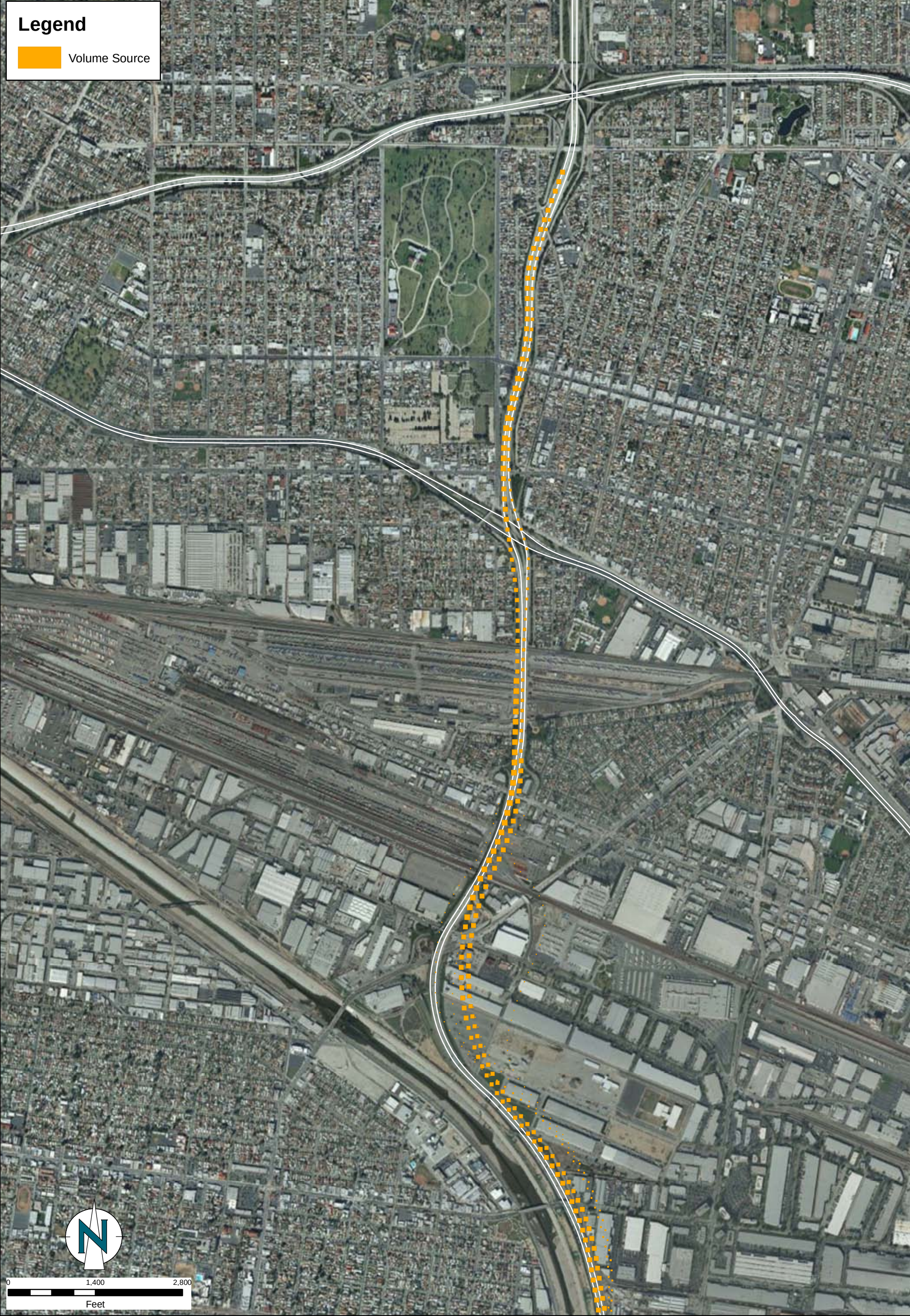










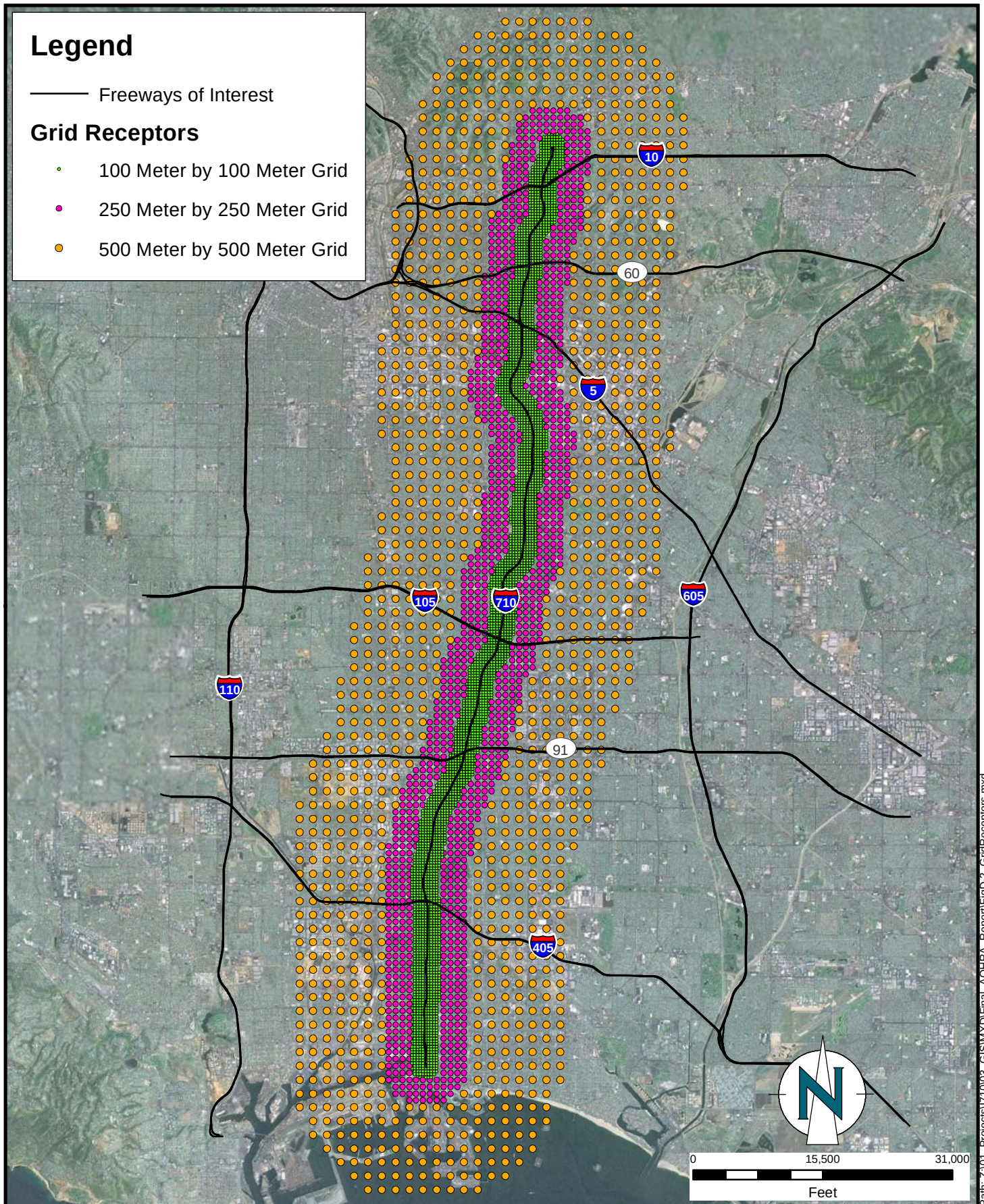


Legend

— Freeways of Interest

Grid Receptors

- 100 Meter by 100 Meter Grid
- 250 Meter by 250 Meter Grid
- 500 Meter by 500 Meter Grid



Path: Z:\01_Projects\171003_GIS\MXD\Final_AQHRA_Report\figD-2_GridReceptors.mxd

ENVIRON

DRAFTED BY: MMM

Date: 1/26/2012

Grid Receptors

Figure
D-2

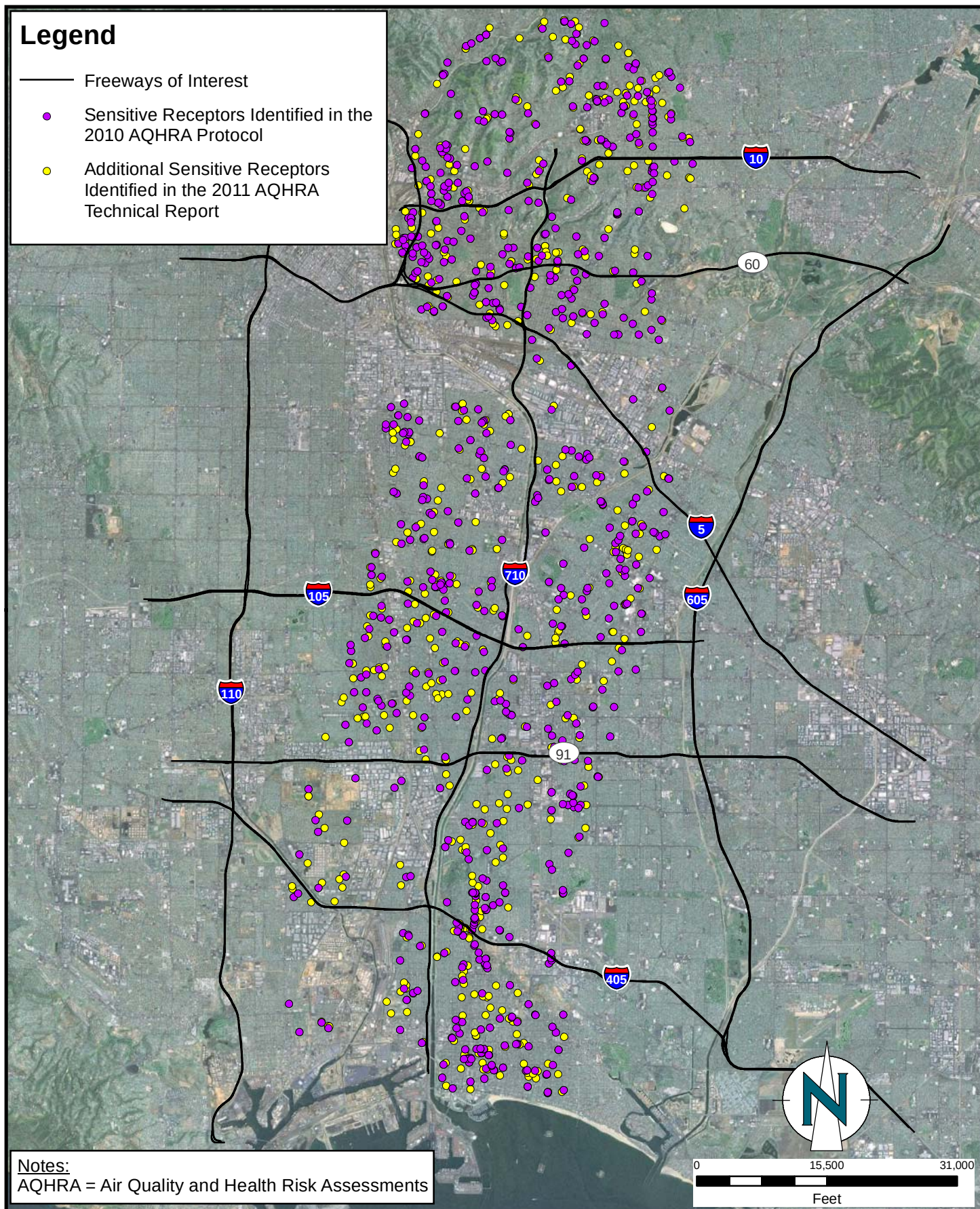
PROJECT: 05-18574E4

Legend

- Freeways of Interest
- Sensitive Receptors Identified in the 2010 AQHRA Protocol
- Additional Sensitive Receptors Identified in the 2011 AQHRA Technical Report

Sensitive Receptors Identified in the 2010 AQHRA Protocol

Additional Sensitive Receptors Identified in the 2011 AQHRA Technical Report



Notes:
AQHRA = Air Quality and Health Risk Assessments

0 15,500 31,000
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Attachment 1 to Appendix D
I-710 AQ/HRA Study - Meteorological Data Processing

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Glossary of Terms

AERMET	AERMOD Meteorological Preprocessor
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AQ/HRA	Air Quality and Health Risk Assessments
BWHRA	Baywide Health Risk Assessment
CARB (ARB)	California Air Resources Board
CEQA	California Environmental Quality Act
CIMIS	California Irrigation Management Information System
CSV	Comma Separated Variable
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
GIS	Geographic Information Systems
MCS	Major Corridor Study
NCDC	National Climatic Data Center
NEPA	National Environmental Policy Act
NOAA	National Oceanic & Atmospheric Administration
NWS	National Weather Service
POLA	Port of Los Angeles
POLB	Port of Long Beach
SCAQMD	South Coast Air Quality Management District
USEPA (EPA)	United States Environmental Protection Agency

1 Introduction

For the I-710 AQ/HRA, AERMOD was used as the air dispersion model to estimate the ambient air concentrations of criteria pollutants and the 6 priority Mobile Source Air Toxics (MSATs) identified for the I-710 Corridor Project assessment. AERMOD requires meteorological inputs to characterize the transport and dispersion of pollutants in the atmosphere. These meteorological inputs are processed using AERMET, the meteorological preprocessor for AERMOD. AERMET uses surface and upper air meteorological data inputs as well as surface parameter data describing the land use and surface characteristics in the vicinity of a project site to prepare meteorological data files that can be used by AERMOD. This Attachment describes in detail the methodology that ENVIRON used in preparing the AERMOD-ready meteorological input files.

2 Project Study Area and Modeling Domain

As shown on Figure D.1 -1, the I-710 Corridor Project general study area includes the portion of the I-710 (6 or 8 lanes) from Ocean Boulevard in the City of Long Beach to State Route 60 (SR-60), a distance of approximately 18 miles. At the freeway-to-freeway interchanges, the study area extends one mile east and west of I-710 for the Interstate 405 (I-405), State Route 91 (SR-91), Interstate 105 (I-105), and Interstate 5 (I-5) interchanges. The I-710 Corridor Project traverses portions of the cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, and portions of unincorporated Los Angeles County, all within Los Angeles County, California.

For air dispersion modeling purpose, volume sources are placed on the I-710 mainline (and proposed freight corridor, if applicable). The impacts are calculated for the receptors within the modeling domain, which is consistent with the general study area shown on Figure D.1-1.

3 Sphere of Influence Analysis

In order to select the most representative meteorological data to model the impacts from the project emission sources, ENVIRON evaluated all available meteorological stations between Port of Los Angeles on the South-West to the intersection of I-605 and I-10 on the North-East, called the 'Area of Interest' (AOI, Figure D.1-2). The meteorological data gathered at each monitoring station represent the meteorological conditions within its "Sphere of Influence." The procedure that ENVIRON followed in order to select the most appropriate meteorological stations is discussed below.

The purpose of the Sphere of Influence analysis was to identify a set of meteorological stations that would accurately depict the meteorological conditions in various segments inside the AOI. These stations would then be considered as on-site meteorological stations. A similar methodology was approved by the Technical Working Group for the Baywide Health Risk Assessment (BWHRA) (ENVIRON, 2009), which included representatives from the Ports, SCAQMD and CARB. The terrain features and the water bodies, both of which have strong influence on the meteorological conditions of a region, were evaluated to determine the boundaries of the meteorological zones for the BWHRA project. Due to the absence of intervening water bodies within the I-710 AOI, terrain, land use, and wind profile were expected to be the most important deciding factors for the identification of zonal boundaries.

The following procedure was used to identify the sphere of influence of each of the selected meteorological stations:

Step 1: Identify all meteorological stations in the AOI that have current and complete meteorological data sets meeting the USEPA requirements for data completeness. According to the USEPA, meteorological data used for air quality modeling purposes should be at least 90 percent complete before substitution and contain no data gaps greater than two weeks (USEPA, 2000). Preference was given to the meteorological stations nearest to the emission sources, i.e., near the I-710 freeway.

Step 2: Identify primary meteorological zones inside the AOI based on:

- Terrain elevation,
- Physical features,
- Land use / land cover,
- Wind patterns

Step 3: Assign the selected meteorological stations to the designated meteorological zones. When multiple meteorological stations were assigned to any meteorological zone, the following criteria were used to shortlist the stations for analysis:

- All stations with similar preliminary wind-rose plots were identified, and only one station from each group was selected;

- Preference was given to SCAQMD stations as they were designed specifically for the South Coast Air Basin;
- If the meteorological profile did not change significantly between the selected stations, then data quality checks (such as number of missing hours, number of calm hours etc.) were conducted to select the most appropriate meteorological station

Step 4: When multiple stations with distinct meteorological profiles were available in a meteorological zone, then the zone was further divided into modeling zones by classifying individual spheres of influence for each of the meteorological station in the zones based on the following criteria:

- Identified the terrain features and land use inside each meteorological zone near the source and compared it to the terrain features/land use of the meteorological stations in that zone, and selected the most appropriate station. Land use maps and aerial images were used to decide the most appropriate meteorological station.
- If two or more meteorological stations were candidate stations for a source, then the station with more conservative results was selected, i.e. the station which would result in higher concentration for the nearby receptors were chosen. Preliminary wind rose plots were used to make the decision.

4 Selection of Meteorological Stations

The USEPA Guidelines on Air Quality Models (USEPA, 2005) suggests that the meteorological data used as input to a dispersion model should be selected on the basis of spatial and temporal representativeness, and that sufficient meteorological data should be acquired to ensure that worst-case meteorological conditions are adequately represented in the model results. Although use of five years of NWS meteorological data is suggested, site specific data (for at least a year) are preferred for use in air quality analyses, if available. As multiple stations were selected to identify the meteorological profile of the AOI, the selected meteorological data were treated as on-site data, and one year of data were used for air dispersion modeling.

ENVIRON selected year 2007 as the period for meteorological data processing, as it was the most recent period for which complete meteorological data sets were available for the meteorological stations in the AOI. A comprehensive search was conducted to identify all current meteorological stations inside the AOI (including Los Angeles and Orange County) using the following data sources:

- i. California Air Resources Board (CARB) [<http://www.arb.ca.gov/aqmis2/metselect.php>]
- ii. South Coast Air Quality Management District (SCAQMD) [<http://www.aqmd.gov/smog/metdata/MeteorologicalData.html>]
- iii. National Climatic Data Center (NCDC) [<http://www.ncdc.noaa.gov/oa/ncdc.html>]
- iv. Port of Los Angeles (POLA) / Port of Long Beach (POLB) [http://www.polb.com/environment/air_quality/air_monitoring.asp]
- v. MesoWest, a cooperative project between University of Utah, Salt Lake City National Weather Service Office, and NWS Western Region Headquarters [<http://www.met.utah.edu/mesowest/>]

The coordinates of all the identified meteorological stations were plotted in ArcGIS. The researched sources yielded an initial master list of 275 station entries including several stations that were reported by multiple data sources, out of which only 59 were contained within the AOI. The list was further condensed by removing all the meteorological station repetitions, and by selecting only those stations which had complete sets of meteorological data available for year 2007, thus creating a list of 20 stations.

Further, only 10 stations were present in the immediate neighborhood of the I-710 Project Freeways of Interest, and were shortlisted for analysis:

- POLB Inner Harbor (POLB),
- POLB Outer Harbor (POLB),
- North Long Beach (SCAQMD),
- Long Beach Daugherty Field (NCDC),
- Long Beach #2 (CARB),
- Lynwood (SCAQMD),

- Bellflower (MesoWest),
- Los Angeles Westchester Parkway (CARB),
- Pico Rivera (SCAQMD), and
- Los Angeles North Main Street (CARB)

Preliminary wind rose plots were drawn for each of the ten stations using WRPLOT, a wind rose plotting software, using hourly wind speed and wind direction data. The wind rose plots were imported into a GIS map to study the wind profile in the AOI (Figure D.1-5).

4.1 Definition of Meteorological Zones

The land cover in the region was found to be predominantly urban (Figure D.1-3). However, closer examination of the region showed that the areas adjacent to Los Angeles Downtown and near the Ports had higher concentrations of high-rise buildings (depicted by dark-red clusters). This results in a higher surface roughness and urban heat island effect. Therefore, ENVIRON concluded that these regions would potentially require assignment of individual meteorological zones.

The terrain in the AOI was found to be fairly flat between Ocean Boulevard and I-5 freeway; therefore, terrain features were not expected to influence the wind flow for the stations south of the I-5 Freeway (Figure D.1-4). However, elevated terrain was encountered north of the I-5 freeway, and the meteorological conditions for all stations north of the I-5 Freeway were expected to be influenced by the terrain.

ENVIRON also noted that the AOI contained eight major freeways within its domain: I-110, I-710, I-605, SR-60, I-5, I-105, SR-91, and I-405. Four of the eight freeways (SR-60, I-105, SR-91, and I-405) extended predominantly from east to west in the AOI. Therefore, to be consistent, meteorological zone delineation considered accommodating major all East-West freeways in individual meteorological zones, except for I-5 that was accommodated in two different meteorological zones as it makes a directional change from east-west to north-south between I-605 and I-710.

It was further noted that the wind profile changed significantly with respect to the distance of the meteorological station from the ocean on the southern and western fronts (Figure D.1-5). For instance, the wind rose plots for POLB Outer Harbor and POLB Inner Harbor stations located just north of the southern ocean front showed predominant winds from the south whereas North Long Beach and Lynwood stations that were further north of the southern ocean front, but relatively closer to the western ocean front had predominant wind flow from the west. The Los Angeles North Main Street station which was located further north of the southern ocean front but approximately on a similar longitude as the POLB and Lynwood stations had a considerable wind flow from the west; however presence of mountainous terrain immediately to the north resulted in some deflected southerly and northerly winds. The wind flow direction at Pico Rivera and Los Angeles Westchester Parkway stations, which are located east of the I-710 freeway and are surrounded by mountains on the north and north-west respectively, were predominantly from the south and south-west. Wind flow direction at Bellflower, Long Beach Daugherty Field,

and Long Beach #2 stations were much calmer than the other stations as they were further inland, and did not have any interfering terrain affecting or deflecting the wind flow.

Therefore, the AOI was divided into four meteorological zones based on the land cover, orientation of the major freeways, and the prevailing wind patterns. (Figure D.1-6):

- i. Coastal Zone – 3 miles North of the Ports (1.5 miles South of I-405 Freeway)
- ii. Transition Zone – 5 miles North of Coastal zone (0.5 mile North of SR-91 Freeway)
- iii. Inland Zone – 6.5 miles North of the Transition zone (4.5 mile North of I-105 Freeway)
- iv. Downtown Zone – 7 miles North of the Inland zone

4.2 Meteorological Station Assignment

Overall, ENVIRON determined that the following four meteorological stations (see Table D.1-1) that were located nearest to the I-710 freeway could be used to represent the meteorological conditions encountered along the I-710 freeway for the purposes of air dispersion modeling.

Table D.1-1. Meteorological Stations Selected for Defined Meteorological Zones

Zone	Station	Data Source	Station ID	Coordinates	
				Latitude	Longitude
Coastal	POLB Inner Harbor (POLB-SB)	POLB	99999 ¹	33.779	-118.214
Transition	North Long Beach (LGBH)	SCAQMD	70072	33.824	-118.189
Inland	Lynwood (LYN)	SCAQMD	70084	33.929	-118.211
Downtown	Los Angeles North Main Street (CELA)	SCAQMD	70087	34.066	-118.227

¹ POLB Inner Harbor did not have a Station ID, and was assigned 99999

5 Raw data processing

The minimum surface data requirement for AERMET/AERMOD meteorological data includes wind speed, wind direction, temperature, and cloud cover; station pressure is also recommended, but not required (USEPA, 2004a & 2004b). Details of AERMET and AERMOD meteorological data needs are described in USEPA guidance documents (USEPA 2004a, 2004b). The following data sources were used to obtain the AERMET-required meteorological data:

Wind Speed, Wind Direction, Temperature, and Relative Humidity: ENVIRON received raw meteorological data for the three selected SCAQMD stations from EnviroComp. The data were supplied in Comma Separated Variable (CSV) format, and contained hourly wind speed and wind direction from 2005 through 2007. ENVIRON received a separate raw data file containing temperature and relative humidity for the three SCAQMD stations.

ENVIRON also obtained meteorological data from the California Irrigation Management Information System (CIMIS) database for data substitution for the Los Angeles North Main Street Station.

ENVIRON received the raw meteorological data for POLB Inner Harbor (Super Block) station from SAIC² (POLB subcontractor), which contained hourly observations for wind speed, wind direction, temperature, relative humidity, barometric pressure, and solar radiation.

Cloud Cover: Cloud cover data were not available for the SCAQMD or POLB stations. Therefore, ENVIRON obtained meteorological data files for five National Weather Services (NWS) stations closest to the AOI from NCDC (Figure D.1-7). These files were obtained in TD3280 format, and converted to CD144 format using a data converter. Cloud cover data from the nearest NWS stations were substituted for the selected meteorological station during raw data processing. The NWS stations include:

- Los Angeles Downtown USC (LAUSC)
- Long Beach Daugherty Field (LBDF)
- Torrance (TOR)
- Hawthorne Municipal Airport (HAW)
- Fullerton (FUL)

² As email attachments in an email correspondence from Joel Torcolini, SAIC on February 24, 2009

The data sources used for meteorological data gathering for the selected meteorological stations are summarized in Table D.1-2 below.

Table D.1-2. Data Sources for Meteorological Data Elements

Station	Wind Speed	Wind Direction	Temperature	Relative Humidity	Cloud Cover ³
POLB Inner Harbor (POLB-SB)	POLB (SB)	POLB (SB)	POLB (SB)	POLB (SB)	LBDF
North Long Beach (LGBH)	LGBH	LGBH	LGBH	LGBH	LBDF
Lynwood (LYN)	LYN	LYN	LGBH	LGBH	HAW
Los Angeles North Main Street (CELA)	CELA	CELA	CELA	CELA + CIMIS 159	FUL

³ Cloud Cover data were obtained from NWS / NCDC stations

6 AERMET Processing

As mentioned earlier, according to the USEPA, meteorological data used for air quality modeling purposes should be at least 90 percent complete before substitution and should not contain any data gaps greater than two weeks (USEPA, 2000). It was observed that all the meteorological datasets met these criteria (Appendix A.1 presents the completeness summary of the selected meteorological datasets before substitution). However, as the datasets were not 100% complete, data substitution was performed to fill-in the missing meteorological data, and to obtain a meteorological data file with 100 percent complete data using procedures outlined by Atkinson and Lee (1992).

6.1 Surface Meteorological Data

The surface data were imported into the surface meteorological data module in CD144 format, and consisted of wind speed (mph), wind direction (tens of degrees), temperature (°F), relative humidity (%), and cloud cover (tenths). Detailed procedure for surface meteorological data substitution and processing are given in Appendix A.2. In addition to the surface meteorological data module in AERMET, ENVIRON also used on-site data module to retain the data quality and precision. Details are provided in Section 6.2.

6.2 On-site Data

During the conversion of raw surface meteorological data in CD144 format for entry in AERMET, it was observed that some of the precision and quality of wind speed and wind direction data were affected. For example, the CD144 format reports only the whole number component of wind speed. Therefore, during data processing the CD144 processor converts the original data (in m/s) to knots, and rounds up the wind speed (in knots) to the nearest integer value. Further, the CD144 format reports wind direction in tens of degrees.

However, the AERMET output reports the wind speed in meters/second format and wind direction in degrees. Therefore, while converting the CD144 data into AERMET outputs during processing, AERMET converts the rounded wind speed in knots to meters/second, and randomly generates the unit's digit of the wind direction variable. Therefore, the use of CD144 data affects the data quality and alters the raw data, thereby affecting the representativeness of the meteorological data.

Use of Onsite data module helps to preserve the original precision and accuracy of the data, as it allows the user to define the data format and precision of the original dataset (number of decimal digits). Therefore, ENVIRON used the Onsite data module in AERMET in addition to the surface meteorological data module, and used the raw data precision to define the Onsite data format. Wind speed was entered in meters/second format (with 2 decimal digits), wind direction was entered in whole degrees, and temperature was entered in degree Centigrade (with 1 decimal digit). ENVIRON used a wind threshold of 0.1 m/s to define the calm hours in the dataset, similar to the threshold used by SCAQMD for their AERMET processing.

6.3 Upper Air Data

AERMET requires upper air sounding data to generate the meteorological profile of the region (USEPA 2004a). The upper air sounding data are typically only available from NCDC/NWS stations and are measurements of various meteorological parameters such as wind speed and direction, temperature, and pressure, usually taken at multiple levels in the atmosphere. AERMET checks four different between-level gradients: ambient temperature gradient, wind speed shear, wind direction shear, and dew point temperature gradient.

Sources of upper air sounding data were obtained from NCDC's Integrated Global Radiosonde Archive (IGRA) (NCDC 2006b), a comprehensive database identified by the USEPA Support Center for Regulatory Atmospheric Modeling (SCRAM) as a source of upper air data. Multiple potential upper-air stations were identified in ENVIRON's search described in the above section. Although these stations collect data, many are not full-time stations, have incomplete data sets, or have potential data quality issues. For these reasons, the San Diego Miramar Naval Air Station (NCAS) is the only upper-air station in Southern California recommended by the NCDC for reliable, complete, and representative upper-air data for air dispersion modeling projects in Southern California. Thus, upper air data from the San Diego Miramar Naval Air Station (NCAS) for year 2007 was used in AERMET processing. The data were downloaded from National Oceanic & Atmospheric Administration database (<http://raob.fsl.noaa.gov/>) in FSL format, and were directly used in the AERMET model.

6.4 Surface Characteristics

It is necessary to specify the surface characteristics of the meteorological monitoring site and/or the project area prior to running AERMET. AERMET uses three surface parameters namely surface roughness, Albedo, and Bowen ratio, which are used to compute fluxes and stability of the atmosphere (USEPA 2004a). Calculation of these parameters requires the evaluation of land use near the meteorological station location, as well as the seasonal variations in the region.

AERMET accepts surface parameters for annual, seasonal, or monthly temporal periods (USEPA, 2004a). The AERMET User's Manual contains tables of values for the surface parameters based on four seasonal vegetative cycles. However, the determination of the appropriate seasonal value for a given period, in addition to the choice of monthly, seasonal, or annual temporal divisions, is left to the user. This is particularly crucial in California, which has seasonal weather that is atypical from the rest of the county. The AERMET User's Manual defines the seasons as follows: "Spring" refers to the period when vegetation is emerging and partially green and applies to the 1-2 months after the last killing frost, "Summer" applies to the period when vegetation is lush, and "Autumn" refers to the period of the year when freezing conditions are common, deciduous trees are leafless, soils are bare after harvest, grasses are brown, and no snow is present. "Winter" conditions apply to snow covered surfaces and subfreezing temperatures. The AERMET User's Manual also cautions that the seasons do not correspond to a particular group of months, but more on latitude and the annual vegetative growth cycles (USEPA, 2004a).

As stated earlier, California's climate is very different from national norms and the months of the year do not always correspond to the default seasons provided in the AERMET user's guide. Therefore, ENVIRON developed guidelines for determining which months belong in each season for the facility, based on local temperature and precipitation patterns and the growth cycle definitions above (ENVIRON, 2006). For example, "Winter" values were not considered because snow cover is rare in Southern California. Furthermore, ENVIRON proposed that a season between summer and autumn (summer/autumn) would be more representative of conditions for some months of Southern California's dry season due to the prolonged dry period after the growth of summer vegetation and the browning of grasses. The months proposed for each season are presented in Table D.1-3. In addition to defining the months of the seasons, ENVIRON also evaluated precipitation data in order to select a condition (wet, dry, average) for the Bowen ratio. As suggested by the AERMET user's guide, those precipitation totals were compared to historical precipitation averages (USEPA, 2004a).

**Table D.1-3. Seasons for AERMET
Surface Parameter
Analysis**

Spring	February
	March
Summer	April
	May
	June
Summer/Autumn	July
	August
	September
	October
Autumn	November
	December
	January

Surface parameters supplied to the model were specified for the area surrounding the surface meteorological monitoring stations rather than the project area, as recommended by USEPA (USEPA, 2008). Because the selected meteorological stations are in very close proximity to the Project traffic links and the land use surrounding the meteorological stations are very similar to the land use in each operational zones applicable to the individual station, surface parameters calculated for the meteorological stations should be representative of the operational zone over which the meteorological station is used for air dispersion modeling.

The surface characteristics of the land parcels adjacent to the meteorological stations were analyzed using ArcGIS in compliance with the protocol suggested in most recent AERMOD Implementation Guidance (USEPA, 2008). Albedo and Bowen Ratio were calculated in the 10 km area surrounding the meteorological station, and surface roughness was calculated in the 1 km radius around the meteorological station. Detailed procedure is discussed in Appendix A.3, and final results are provided in Appendix A.4.

7 References

- Atkinson, D. and Lee, R. 1992. Procedures for Substituting Values for Missing NWS Meteorological Data for Use in Regulatory Air Quality Models. Research Triangle Park, NC. U.S. Environmental Protection Agency.
- ENVIRON International Corporation (ENVIRON). 2006. Meteorological Data Selection and Processing Methodology for 2006 BNSF Designated Rail Yards. Prepared for BNSF Railyards and submitted to the California ARB.
- ENVIRON International Corporation (ENVIRON). 2009. Bay-Wide Regional Human Health Risk Assessment Tool for Diesel Exhaust Particulate Matter (DPM) Prepared for the Port of Los Angeles and Port of Long Beach.
- United States Environmental Protection Agency (USEPA). 2000. Meteorological Monitoring Guidance for Regulatory Modeling Applications. Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina. EPA-454/R-99-005. 6-32. February 2000.
- United States Environmental Protection Agency (USEPA). 2004a. User's Guide for the AERMOD Meteorological Preprocessor (AERMET). Office of Air Quality Planning and Standards. Emissions Monitoring and Analysis Division. Research Triangle Park, North Carolina. EPA-454/B-03-002. 5-9, 4-49. November 2004.
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- United States Environmental Protection Agency (USEPA). 2005. Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions; Final Rule. 40 CFR Part 51. November 5, 2005.
- United States Environmental Protection Agency (USEPA). 2008. AERMOD Implementation Guide. Research Triangle Park, North Carolina. January 9, 2008.

Subpart 1.1

Meteorological Data Completeness Analysis

Station	Criteria	WS	WD	Temp	RH
POLB - Inner Harbor (Super Block)	Greater than zero	8699	8697	8701	8700
	Equal to 999	0	0	0	0
	% Completeness	99.3%	99.3%	99.3%	99.3%

Station	Criteria	WS	WD	Temp	RH
North Long Beach	Greater than zero	8716	8716	8760	8760
	Equal to 999	0	0	0	0
	% Completeness	99.5%	99.5%	100.0%	100.0%

Station	Criteria	WS	WD	Temp	RH
Lynwood	Greater than zero	8489	8536	8760	8760
	Equal to 999	0	0	0	0
	% Completeness	96.9%	97.4%	100.0%	100.0%

Station	Criteria	WS	WD	Temp	RH
Los Angeles - North Main Street	Greater than zero	8655	8655	8760	8696
	Equal to 999	0	0	0	0
	% Completeness	98.8%	98.8%	100.0%	99.3%

Subpart 1.2

Data Substitution / Surface Meteorological Data Processing

Raw Data

- Wind speed, wind direction, dry bulb temperature, and relative humidity data were obtained from SCAQMD and POLB
- If more than 24 hours of continuous data were missing for any parameter for any station, then the corresponding data from the nearest CIMIS station were used for data substitution
- Cloud cover data were obtained from the nearest NCDC station
- Initial data completeness analysis was performed to ensure that sufficient data was available for each parameter (>95% complete), and that every hour in the year was represented
- All missing data periods were identified. Individual data points where parameter value was beyond the reasonable range for a variable were assumed to be missing
- Missing data were left as blanks for each of the five variables.

Step 1: Raw data were formatted in CD-144 format

- The surface meteorological data was formatted in CD-144 format.

Element	Columns
Surface Station Number	1- 5
Year	6- 7
Month	8- 9
Day	10-11
Hour	12-13
Ceiling Height (Hundreds of Feet)	14-16
Wind Direction (Tens of Degrees)	39-40
Wind Speed (Knots)	41-42
Dry Bulb Temperature (Fahrenheit)	47-49
Relative Humidity (%)	77-78
Opaque Cloud Cover	79

- CD144 data hour nomenclature was edited to follow the 00-23 format
- All raw data were converted to the CD144 format without losing any precisions
- Missing data points were left as blanks

Step 2: All data in Step 1 were hard-coded into a new sheet

Step 3: Objective and Subjective data substitution macros were applied to fill the missing data periods

- Objective data substitution were applied to an hour of missing data, and entailed averaging the parameter values from the preceding two hours and succeeding two hours, excluding substituted values

- Subjective data substitution were applied to missing data periods shorter than 24 hours, and entailed substituting the missing data for any parameter values based on values 24 hours prior, 48 hours prior, 24 hours past, and 48 hours past
- All subjective substitutions were evaluated by analyzing the data trend charts for the surrounding five days

Step 4: The processed data from Step 3 were formatted as onsite data in the following data format:

Element	Columns
Year	1-2
Month	3-4
Day	5-6
Hour	7-8
Wind Direction (Degrees)	9-16
Wind Speed (m/s)	17-24
Dry Bulb Temperature (Fahrenheit)	25-32
Relative Humidity (%)	33-40

- It was ensured that the significant digit in the on-site dataset matched the raw data precision

Step 5: Final Surface Meteorological Data were processed, and the output was saved as a PRN file

- The wind direction data were modified such that if:
 - WS>0 and WD=0 => WD=360
- Missing data were left as blank

Step 6: Final Onsite Data were processed, and the output was saved as a PRN file

- Onsite data hour nomenclature was edited to follow the 01-24 format
 - The wind direction data were modified such that if:
 - WS>0 and WD=0 => WD=360
 - Missing data were left as blank

Subpart 1.3

Land Use Analysis Procedure

A new GIS file was created for processing the land use around each meteorological station location

Land use data (NLCD 2001) for the region was downloaded and imported into the GIS file as a Raster file.

I. Albedo and Bowen Ratio Calculation

- A. A Point Shapefile was created for each meteorological station location based on NAD 83 UTM projection (Zone 11N)
- B. The Land use data Raster file was converted to Polygon layer.
- C. A 10km x 10km square buffer was drawn around the meteorological station.
- D. The land use data was clipped with the 10km buffer for the meteorological station creating a clipped Polygon Shapefile.
- E. The clipped Shapefile was dissolved around grid code.
- F. A new column was added to calculate the area of each land use type (m²) based on the UTM projection.
- G. The DBF file associated with the final Shapefile was imported into an excel file for Albedo and Bowen Ratio calculations. The appropriate Lookup table corresponding to 'Non-Arid regions' was also imported
 - i. The percentage of area associated with each different land use class was calculated.
 - ii. The albedo and Bowen ratio corresponding to each of the different land use classes was multiplied with the area.
 - 1. Albedo and Bowen ratios values corresponding to the defined seasons were looked-up and used in the calculations.
 - 2. Bowen ratios were selected based on the precipitation analysis, which compared the precipitation for each season against the 30 year average precipitation, and classified the seasons as 'dry', 'wet' or 'average'.
 - 3. The albedo values were multiplied with the Area weight for each land use type to calculate albedo corresponding to each meteorological station.
 - 4. The natural logarithm of Bowen Ratio values were multiplied with the Area weight for each land use type to calculate Bowen ratio corresponding to each meteorological station.
 - iii. The albedo for each meteorological station was calculated by finding the arithmetic mean of the albedos for each of the land use classes

- iv. The Bowen Ratio for each meteorological station was calculated by finding the geometric mean of the Bowen ratios for each of the land use classes

II. Surface Roughness

- A. A 1-km circular buffer was created around each meteorological station.
- B. The Land use data Raster file was converted to Points feature
- C. The Points feature class was clipped with the 1-km buffer for each station.
- D. The distance between each meteorological station and the corresponding land use points inside their 1-km buffer was calculated to create a new Points Shapefile.
- E. The inverse of the distance of each point from the meteorological station location was calculated.
- F. Appropriate sectors were drawn on the 1-km circular buffer with a minimum of 30° sector angle such that majority of individual land types were accommodated in individual sectors.
- G. The Sectors were intersected with the Land use Point class with inverse distances to create a new point Shapefile.
- H. The Shapefile was dissolved around Grid Code and Sector number, and the statistics for sum of inverse distances for each land use type inside every sector were calculated.
- I. The DBF file associated with the final Shapefile was imported into an excel file for surface roughness calculations. The appropriate Lookup table corresponding to 'Non-Arid regions' was also imported
 - i. Natural log of land use value was multiplied with the weight of the Inverse Distances
 - ii. The final surface roughness for each sector was calculated by the geometric mean of the Inverse distance weighted surface roughness for each sector.
 - iii. The Sectors were re-ordered based on AERMET system
 - 1. ArcGIS measures Counter-Clockwise with 90 degrees at True North, such that 0 degrees points East
 - 2. AERMET measures Clockwise with 0 degrees at True North, such that 90 degrees points East

Subpart 1.4

Sector Definition (Decimal Degrees) for Selected Meteorological Stations

POLB Inner Harbor		
Sector #	Start	End
1	290.2761	47.4112
2	47.4112	107.7626
3	107.7626	222.1245
4	222.1245	290.2761

North Long Beach		
Sector #	Start	End
1	61.0647	132.2488
2	132.2488	189.4072
3	189.4072	258.0531
4	258.0531	353.5879
5	353.5879	61.0647

Lynwood		
Sector #	Start	End
1	68.7526	115.5822
2	115.5822	281.4835
3	281.4835	68.7526

Los Angeles North Main Street		
Sector #	Start	End
1	9.1574	108.87
2	108.87	182.6265
3	182.6265	267.1136
4	267.1136	9.1574

Subpart 1.5

Surface Parameters of Selected Meteorological Stations

POLB (Inner Harbor)					
Month	Season	Sector	Albedo	Bowen Ratio	Surface Roughness
January	Autumn	1	0.15889	0.55596	0.97795
February	Spring	1	0.15889	1.36005	0.97686
March	Spring	1	0.15889	1.36005	0.97686
April	Summer	1	0.15889	0.75028	0.97795
May	Summer	1	0.15889	0.75028	0.97795
June	Summer	1	0.15889	0.75028	0.97795
July	Summer/Autumn	1	0.15889	0.55410	0.97795
August	Summer/Autumn	1	0.15889	0.55410	0.97795
September	Summer/Autumn	1	0.15889	0.55410	0.97795
October	Summer/Autumn	1	0.15889	0.55410	0.97795
November	Autumn	1	0.15889	0.55596	0.97795
December	Autumn	1	0.15889	0.55596	0.97795
January	Autumn	2	0.15889	0.55596	0.48136
February	Spring	2	0.15889	1.36005	0.47948
March	Spring	2	0.15889	1.36005	0.47948
April	Summer	2	0.15889	0.75028	0.48556
May	Summer	2	0.15889	0.75028	0.48556
June	Summer	2	0.15889	0.75028	0.48556
July	Summer/Autumn	2	0.15889	0.55410	0.48360
August	Summer/Autumn	2	0.15889	0.55410	0.48360
September	Summer/Autumn	2	0.15889	0.55410	0.48360
October	Summer/Autumn	2	0.15889	0.55410	0.48360
November	Autumn	2	0.15889	0.55596	0.48136
December	Autumn	2	0.15889	0.55596	0.48136
January	Autumn	3	0.15889	0.55596	0.30172
February	Spring	3	0.15889	1.36005	0.30096
March	Spring	3	0.15889	1.36005	0.30096
April	Summer	3	0.15889	0.75028	0.30405
May	Summer	3	0.15889	0.75028	0.30405
June	Summer	3	0.15889	0.75028	0.30405
July	Summer/Autumn	3	0.15889	0.55410	0.30296
August	Summer/Autumn	3	0.15889	0.55410	0.30296
September	Summer/Autumn	3	0.15889	0.55410	0.30296
October	Summer/Autumn	3	0.15889	0.55410	0.30296
November	Autumn	3	0.15889	0.55596	0.30172
December	Autumn	3	0.15889	0.55596	0.30172
January	Autumn	4	0.15889	0.55596	0.86563
February	Spring	4	0.15889	1.36005	0.85880
March	Spring	4	0.15889	1.36005	0.85880
April	Summer	4	0.15889	0.75028	0.86563
May	Summer	4	0.15889	0.75028	0.86563
June	Summer	4	0.15889	0.75028	0.86563
July	Summer/Autumn	4	0.15889	0.55410	0.86563
August	Summer/Autumn	4	0.15889	0.55410	0.86563
September	Summer/Autumn	4	0.15889	0.55410	0.86563

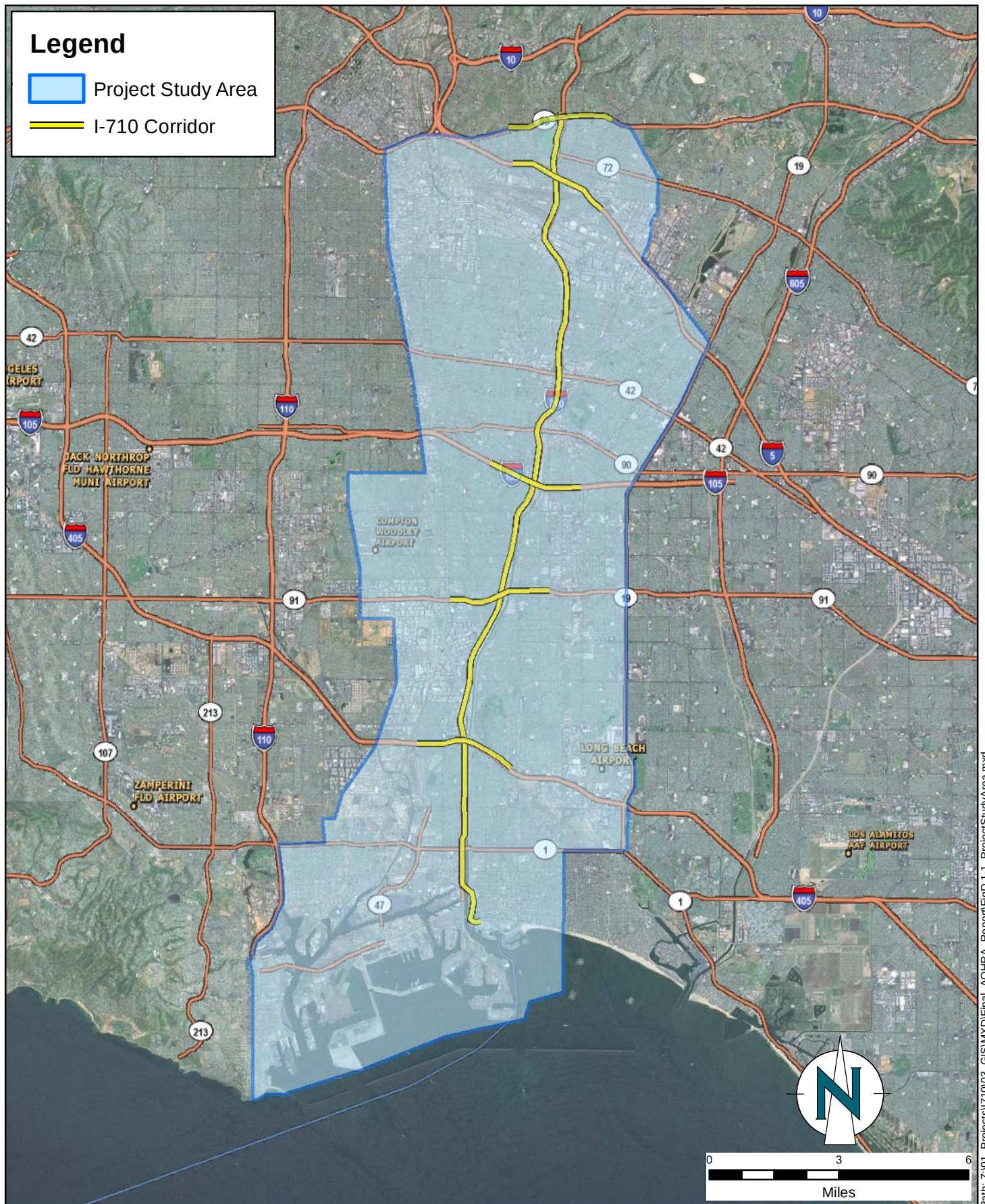
POLB (Inner Harbor)					
Month	Season	Sector	Albedo	Bowen Ratio	Surface Roughness
October	Summer/Autumn	4	0.15889	0.55410	0.86563
November	Autumn	4	0.15889	0.55596	0.86563
December	Autumn	4	0.15889	0.55596	0.86563

North Long Beach					
Month	Season	Sector	Albedo	Bowen Ratio	Surface Roughness
January	Autumn	1	0.17159	0.80564	0.77635
February	Spring	1	0.17158	2.45158	0.76421
March	Spring	1	0.17158	2.45158	0.76421
April	Summer	1	0.17159	1.16023	0.77652
May	Summer	1	0.17159	1.16023	0.77652
June	Summer	1	0.17159	1.16023	0.77652
July	Summer/Autumn	1	0.17159	0.80054	0.77644
August	Summer/Autumn	1	0.17159	0.80054	0.77644
September	Summer/Autumn	1	0.17159	0.80054	0.77644
October	Summer/Autumn	1	0.17159	0.80054	0.77644
November	Autumn	1	0.17159	0.80564	0.77635
December	Autumn	1	0.17159	0.80564	0.77635
January	Autumn	2	0.17159	0.80564	0.89569
February	Spring	2	0.17158	2.45158	0.89119
March	Spring	2	0.17158	2.45158	0.89119
April	Summer	2	0.17159	1.16023	0.89641
May	Summer	2	0.17159	1.16023	0.89641
June	Summer	2	0.17159	1.16023	0.89641
July	Summer/Autumn	2	0.17159	0.80054	0.89608
August	Summer/Autumn	2	0.17159	0.80054	0.89608
September	Summer/Autumn	2	0.17159	0.80054	0.89608
October	Summer/Autumn	2	0.17159	0.80054	0.89608
November	Autumn	2	0.17159	0.80564	0.89569
December	Autumn	2	0.17159	0.80564	0.89569
January	Autumn	3	0.17159	0.80564	0.87395
February	Spring	3	0.17158	2.45158	0.86798
March	Spring	3	0.17158	2.45158	0.86798
April	Summer	3	0.17159	1.16023	0.87395
May	Summer	3	0.17159	1.16023	0.87395
June	Summer	3	0.17159	1.16023	0.87395
July	Summer/Autumn	3	0.17159	0.80054	0.87395
August	Summer/Autumn	3	0.17159	0.80054	0.87395
September	Summer/Autumn	3	0.17159	0.80054	0.87395
October	Summer/Autumn	3	0.17159	0.80054	0.87395
November	Autumn	3	0.17159	0.80564	0.87395
December	Autumn	3	0.17159	0.80564	0.87395
January	Autumn	4	0.17159	0.80564	0.65851
February	Spring	4	0.17158	2.45158	0.64428
March	Spring	4	0.17158	2.45158	0.64428
April	Summer	4	0.17159	1.16023	0.66016
May	Summer	4	0.17159	1.16023	0.66016
June	Summer	4	0.17159	1.16023	0.66016
July	Summer/Autumn	4	0.17159	0.80054	0.65939
August	Summer/Autumn	4	0.17159	0.80054	0.65939
September	Summer/Autumn	4	0.17159	0.80054	0.65939
October	Summer/Autumn	4	0.17159	0.80054	0.65939
November	Autumn	4	0.17159	0.80564	0.65851
December	Autumn	4	0.17159	0.80564	0.65851
January	Autumn	5	0.17159	0.80564	0.70175

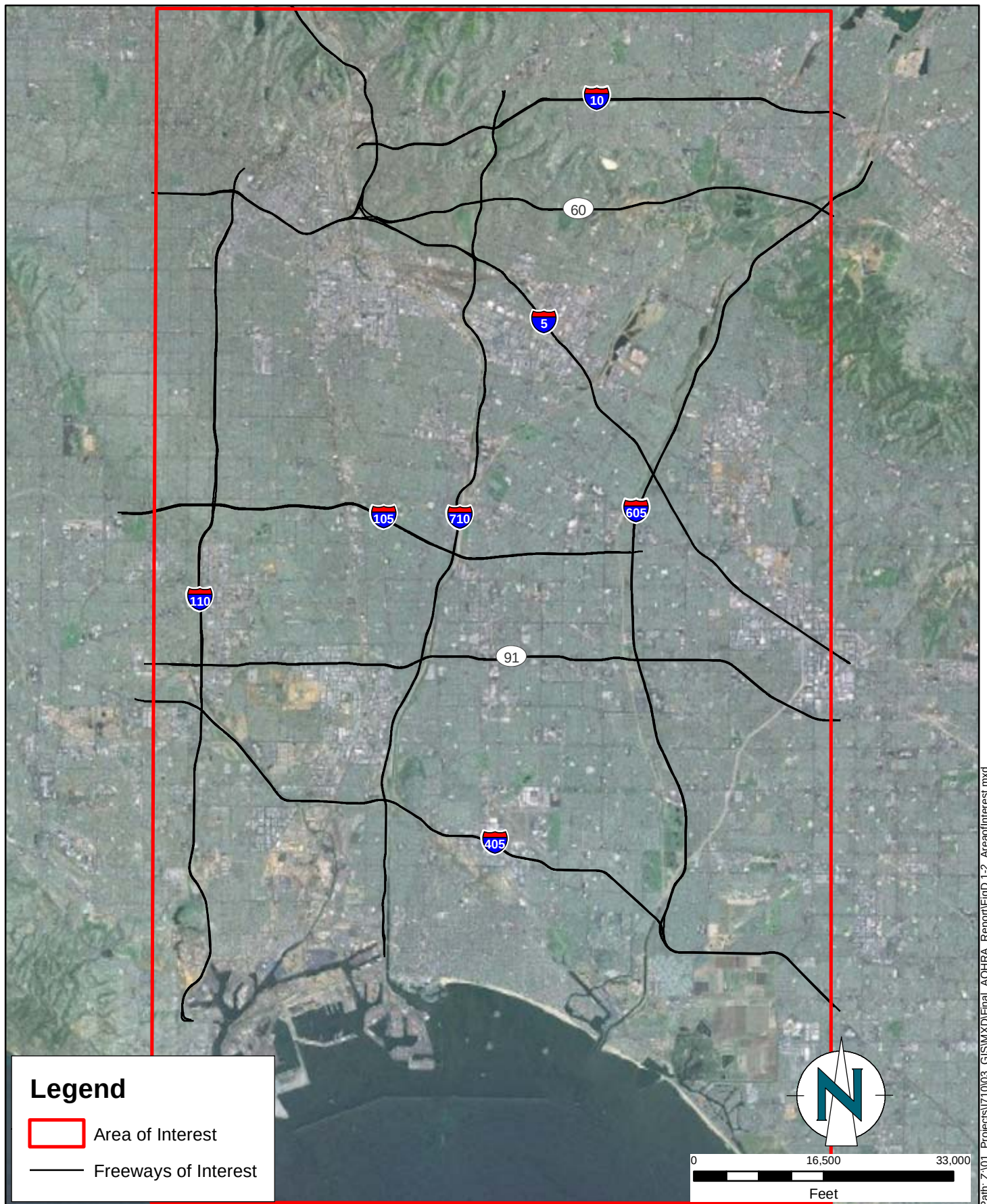
North Long Beach					
Month	Season	Sector	Albedo	Bowen Ratio	Surface Roughness
February	Spring	5	0.17158	2.45158	0.68714
March	Spring	5	0.17158	2.45158	0.68714
April	Summer	5	0.17159	1.16023	0.70175
May	Summer	5	0.17159	1.16023	0.70175
June	Summer	5	0.17159	1.16023	0.70175
July	Summer/Autumn	5	0.17159	0.80054	0.70175
August	Summer/Autumn	5	0.17159	0.80054	0.70175
September	Summer/Autumn	5	0.17159	0.80054	0.70175
October	Summer/Autumn	5	0.17159	0.80054	0.70175
November	Autumn	5	0.17159	0.80564	0.70175
December	Autumn	5	0.17159	0.80564	0.70175

Lynwood					
Month	Season	Sector	Albedo	Bowen Ratio	Surface Roughness
January	Autumn	1	0.17117	0.80980	0.54455
February	Spring	1	0.17117	2.50170	0.52913
March	Spring	1	0.17117	2.50170	0.52913
April	Summer	1	0.17117	1.16531	0.55791
May	Summer	1	0.17117	1.16531	0.55791
June	Summer	1	0.17117	1.16531	0.55791
July	Summer/Autumn	1	0.17117	0.80690	0.55167
August	Summer/Autumn	1	0.17117	0.80690	0.55167
September	Summer/Autumn	1	0.17117	0.80690	0.55167
October	Summer/Autumn	1	0.17117	0.80690	0.55167
November	Autumn	1	0.17117	0.80980	0.54455
December	Autumn	1	0.17117	0.80980	0.54455
January	Autumn	2	0.17117	0.80980	0.83209
February	Spring	2	0.17117	2.50170	0.82474
March	Spring	2	0.17117	2.50170	0.82474
April	Summer	2	0.17117	1.16531	0.83288
May	Summer	2	0.17117	1.16531	0.83288
June	Summer	2	0.17117	1.16531	0.83288
July	Summer/Autumn	2	0.17117	0.80690	0.83252
August	Summer/Autumn	2	0.17117	0.80690	0.83252
September	Summer/Autumn	2	0.17117	0.80690	0.83252
October	Summer/Autumn	2	0.17117	0.80690	0.83252
November	Autumn	2	0.17117	0.80980	0.83209
December	Autumn	2	0.17117	0.80980	0.83209
January	Autumn	3	0.17117	0.80980	0.85805
February	Spring	3	0.17117	2.50170	0.85146
March	Spring	3	0.17117	2.50170	0.85146
April	Summer	3	0.17117	1.16531	0.85805
May	Summer	3	0.17117	1.16531	0.85805
June	Summer	3	0.17117	1.16531	0.85805
July	Summer/Autumn	3	0.17117	0.80690	0.85805
August	Summer/Autumn	3	0.17117	0.80690	0.85805
September	Summer/Autumn	3	0.17117	0.80690	0.85805
October	Summer/Autumn	3	0.17117	0.80690	0.85805
November	Autumn	3	0.17117	0.80980	0.85805
December	Autumn	3	0.17117	0.80980	0.85805

Los Angeles North Main Street					
Month	Season	Sector	Albedo	Bowen Ratio	Surface Roughness
January	Autumn	1	0.16919	0.74813	0.86609
February	Spring	1	0.16919	2.23806	0.85939
March	Spring	1	0.16919	2.23806	0.85939
April	Summer	1	0.16919	1.05013	0.86609
May	Summer	1	0.16919	1.05013	0.86609
June	Summer	1	0.16919	1.05013	0.86609
July	Summer/Autumn	1	0.16919	0.73301	0.86609
August	Summer/Autumn	1	0.16919	0.73301	0.86609
September	Summer/Autumn	1	0.16919	0.73301	0.86609
October	Summer/Autumn	1	0.16919	0.73301	0.86609
November	Autumn	1	0.16919	0.74813	0.86609
December	Autumn	1	0.16919	0.74813	0.86609
January	Autumn	2	0.16919	0.74813	0.92775
February	Spring	2	0.16919	2.23806	0.92453
March	Spring	2	0.16919	2.23806	0.92453
April	Summer	2	0.16919	1.05013	0.92832
May	Summer	2	0.16919	1.05013	0.92832
June	Summer	2	0.16919	1.05013	0.92832
July	Summer/Autumn	2	0.16919	0.73301	0.92806
August	Summer/Autumn	2	0.16919	0.73301	0.92806
September	Summer/Autumn	2	0.16919	0.73301	0.92806
October	Summer/Autumn	2	0.16919	0.73301	0.92806
November	Autumn	2	0.16919	0.74813	0.92775
December	Autumn	2	0.16919	0.74813	0.92775
January	Autumn	3	0.16919	0.74813	0.80068
February	Spring	3	0.16919	2.23806	0.79598
March	Spring	3	0.16919	2.23806	0.79598
April	Summer	3	0.16919	1.05013	0.80681
May	Summer	3	0.16919	1.05013	0.80681
June	Summer	3	0.16919	1.05013	0.80681
July	Summer/Autumn	3	0.16919	0.73301	0.80396
August	Summer/Autumn	3	0.16919	0.73301	0.80396
September	Summer/Autumn	3	0.16919	0.73301	0.80396
October	Summer/Autumn	3	0.16919	0.73301	0.80396
November	Autumn	3	0.16919	0.74813	0.80068
December	Autumn	3	0.16919	0.74813	0.80068
January	Autumn	4	0.16919	0.74813	0.35006
February	Spring	4	0.16919	2.23806	0.34602
March	Spring	4	0.16919	2.23806	0.34602
April	Summer	4	0.16919	1.05013	0.37153
May	Summer	4	0.16919	1.05013	0.37153
June	Summer	4	0.16919	1.05013	0.37153
July	Summer/Autumn	4	0.16919	0.73301	0.36141
August	Summer/Autumn	4	0.16919	0.73301	0.36141
September	Summer/Autumn	4	0.16919	0.73301	0.36141
October	Summer/Autumn	4	0.16919	0.73301	0.36141
November	Autumn	4	0.16919	0.74813	0.35006
December	Autumn	4	0.16919	0.74813	0.35006



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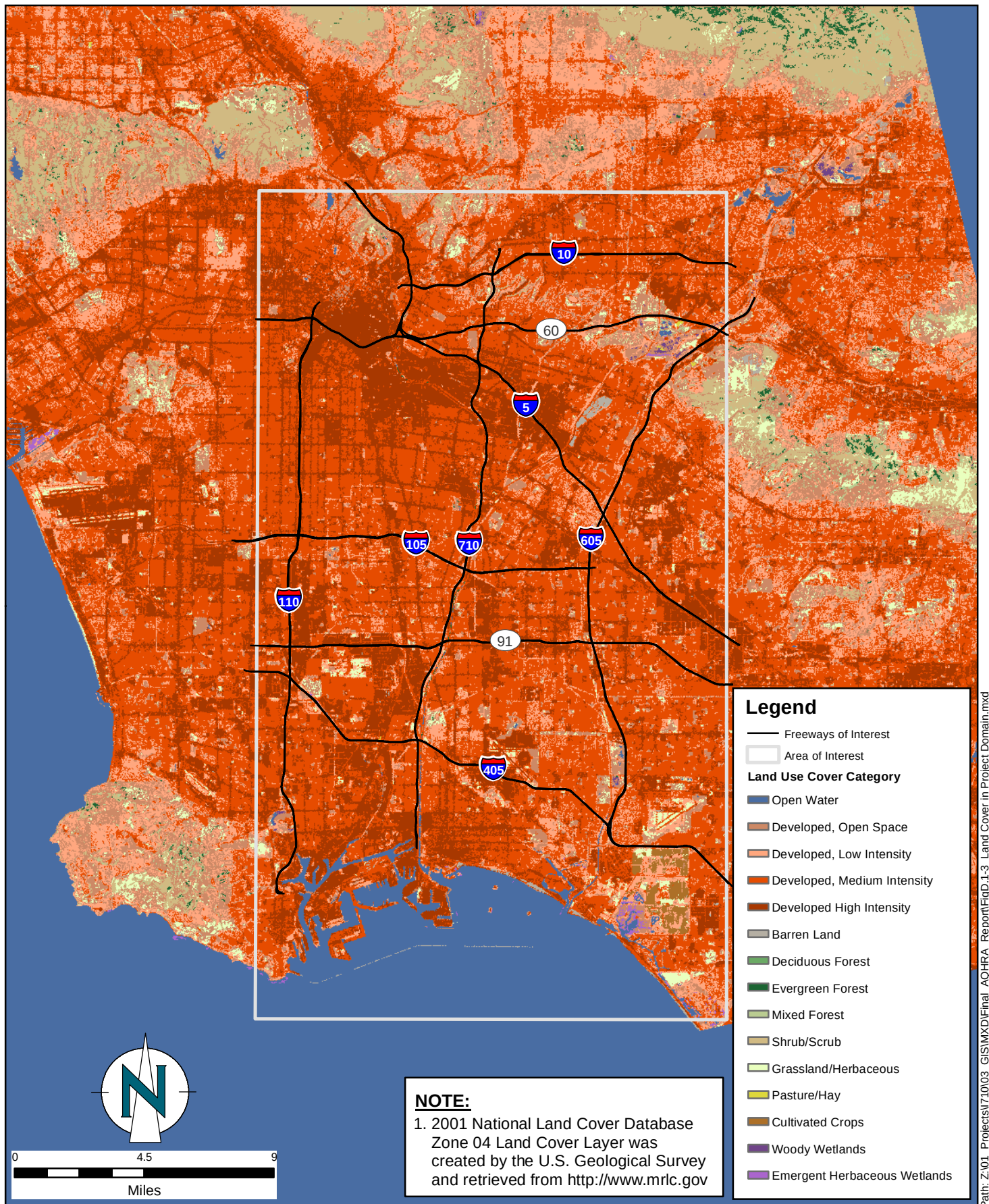
DRAFTED BY: MMM

Date: 1/26/2012

Project Corridor - Freeways of Interest

Figure
D.1-2

PROJECT: 05-18574E4



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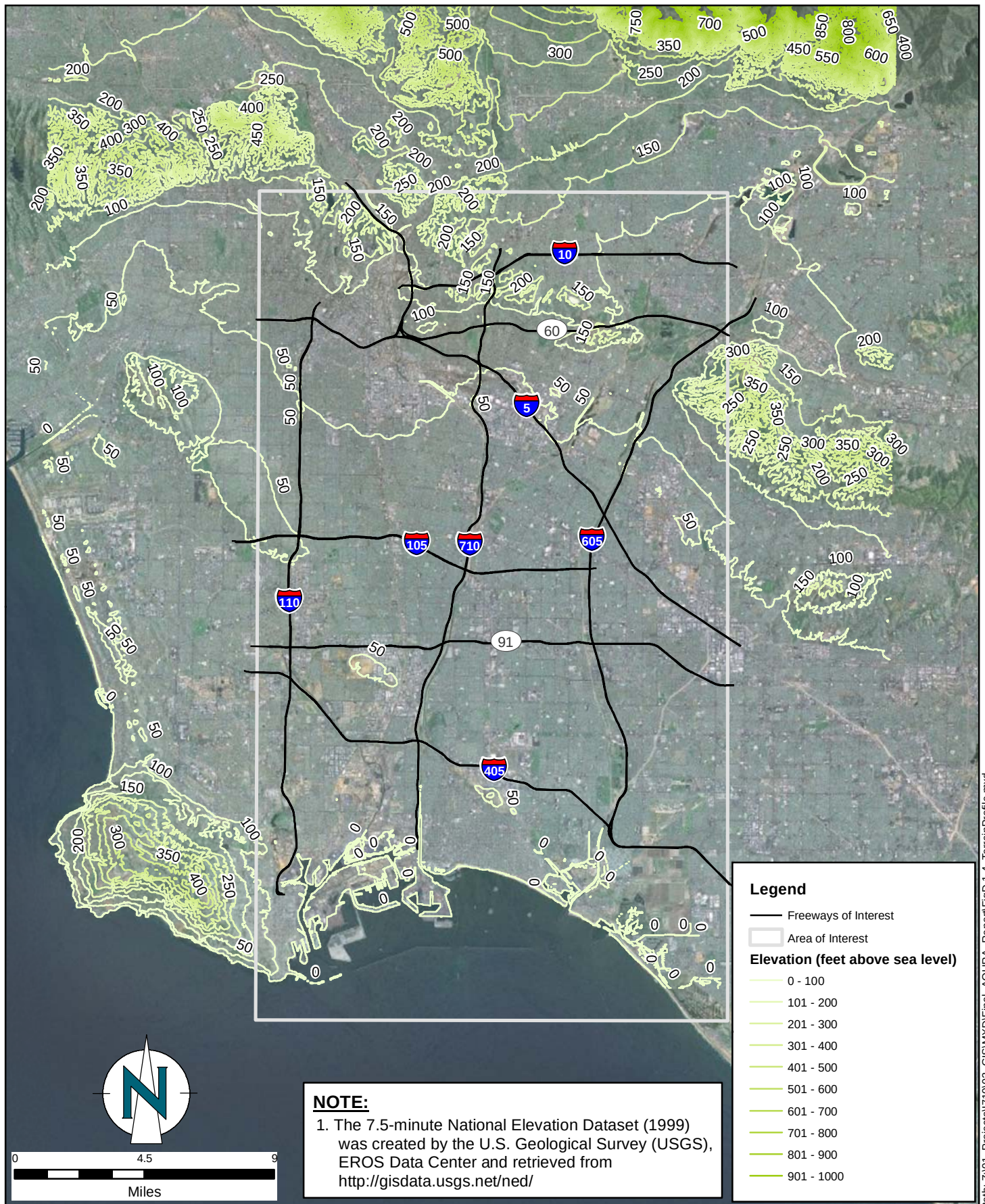
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Date: 1/26/2012

Land Cover in Project Domain

Figure
D.1-3

PROJECT: 05-18574E4



ENVIRON

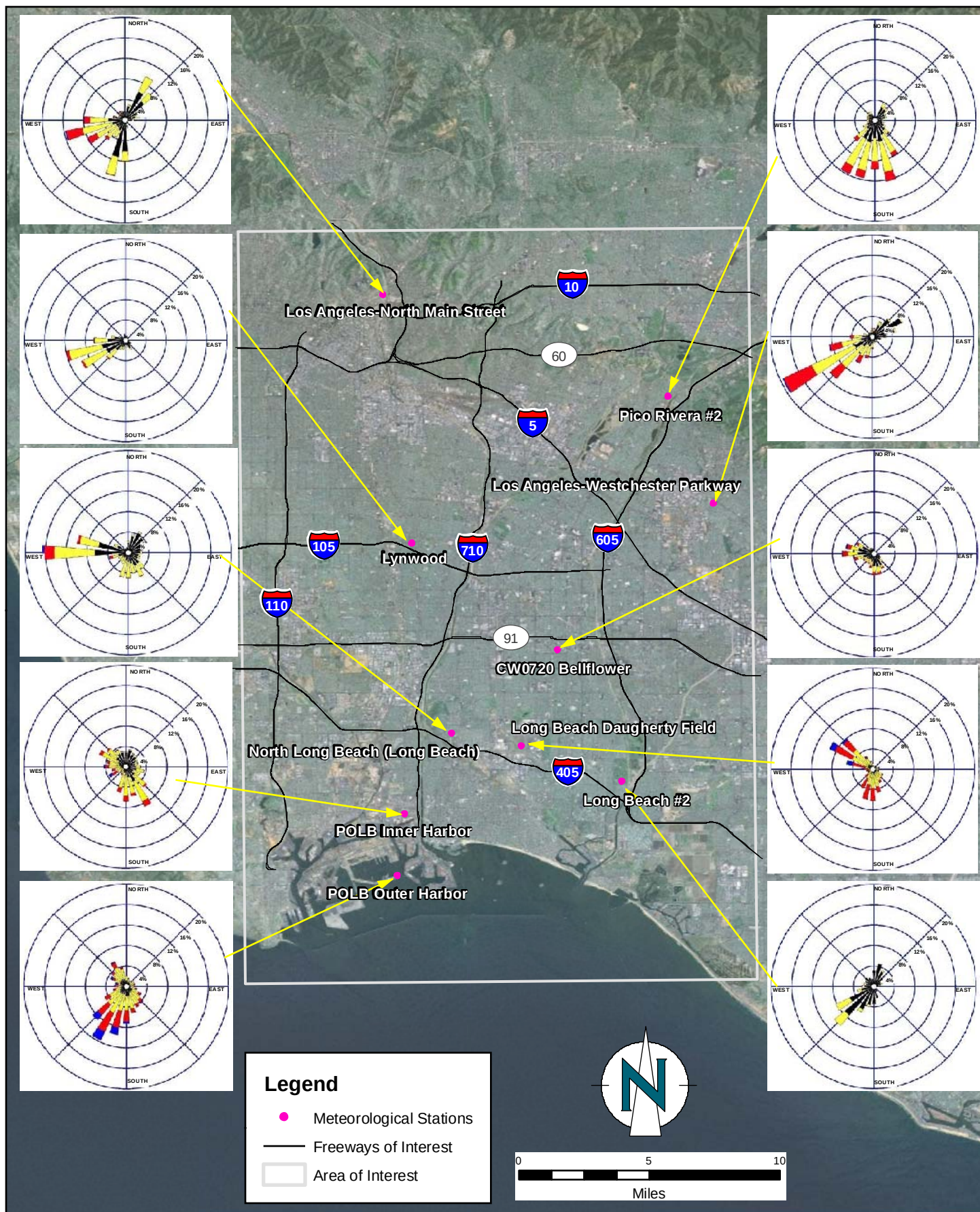
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Date: 1/26/2012

Terrain Profile in Project Domain

Figure
D.1-4

PROJECT: 05-18574E4



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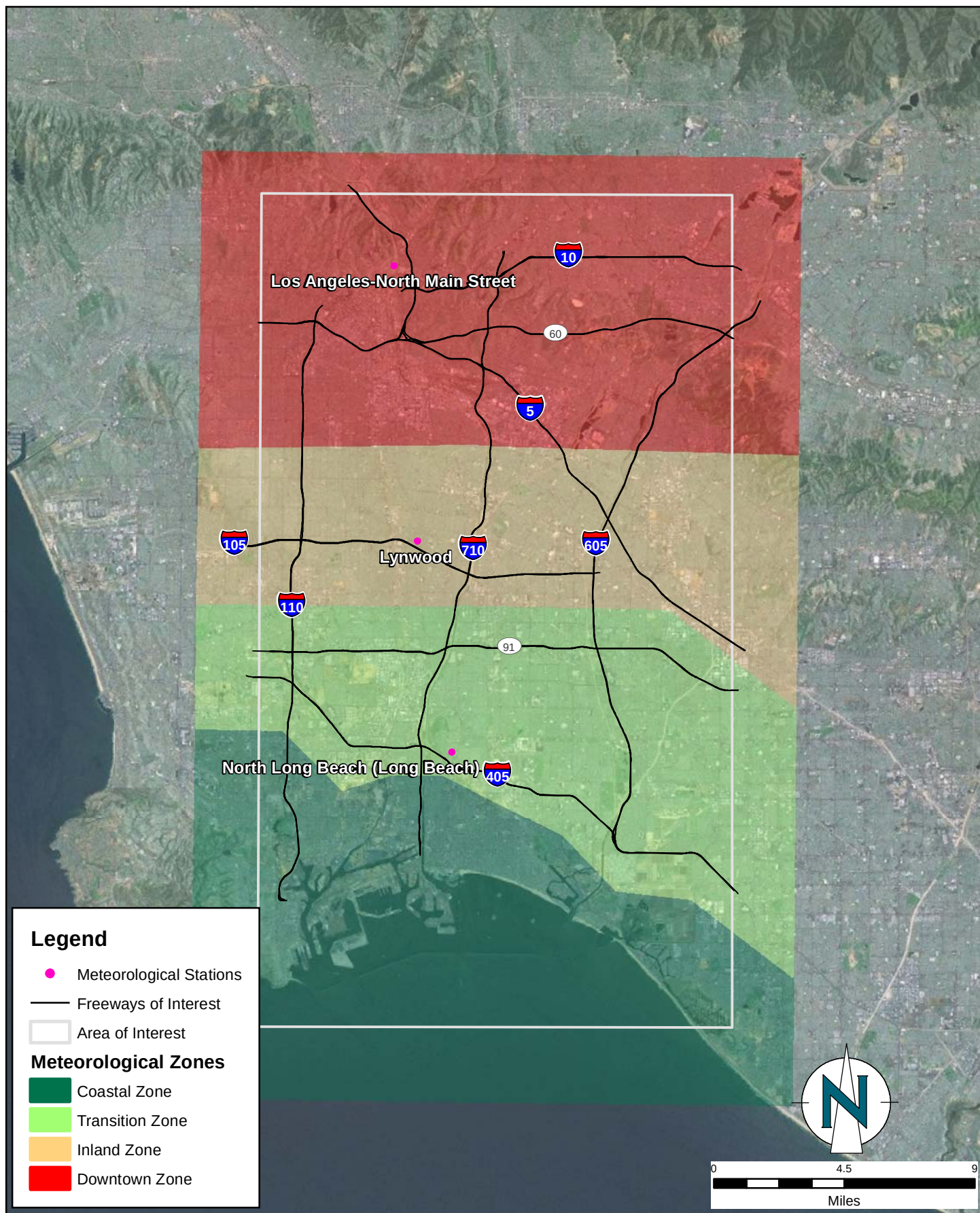
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Date: 1/26/2012

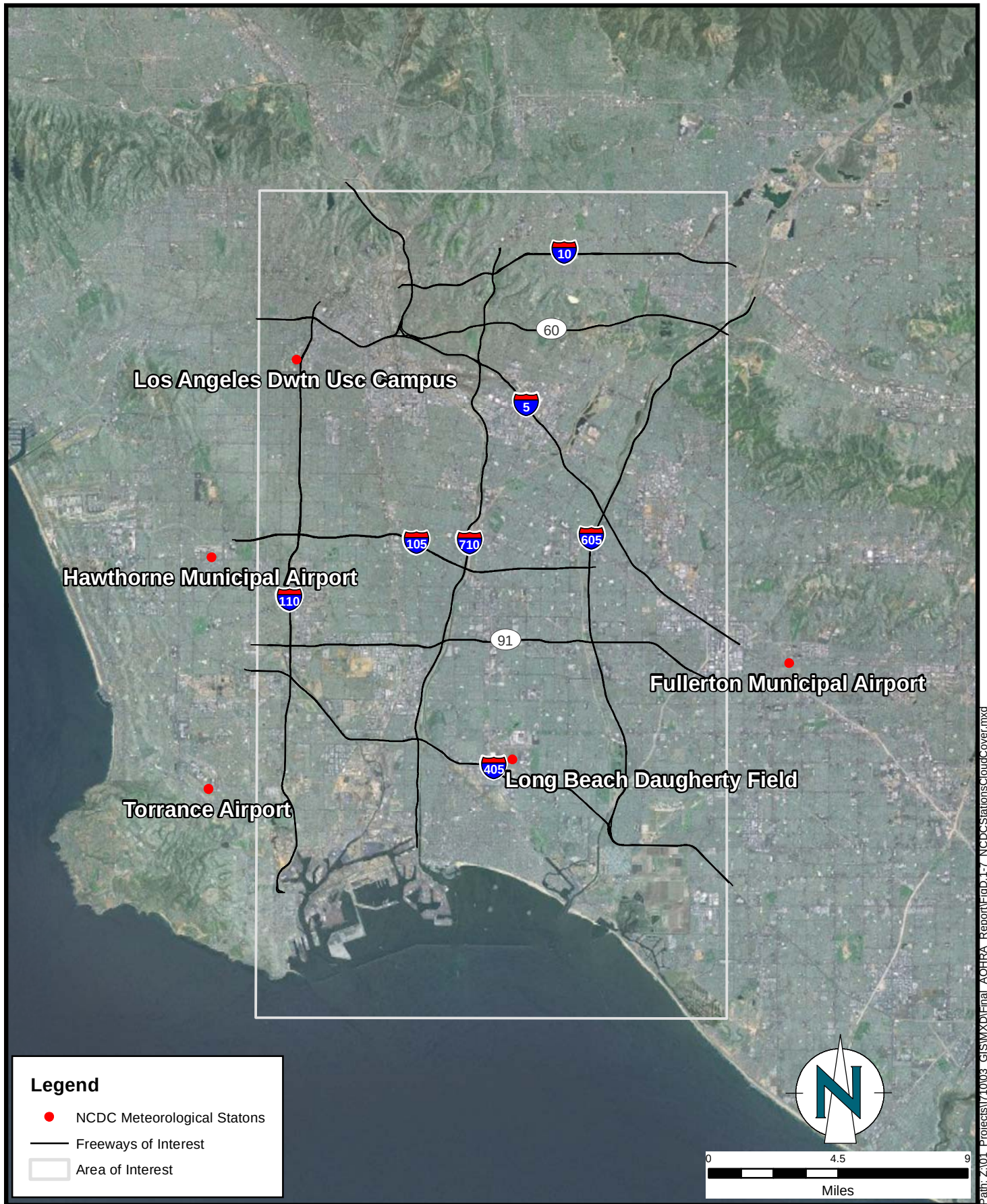
Wind Roses for Year 2007 for
Shortlisted Meteorological Stations

Figure
D.1-5

PROJECT: 05-18574E4



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Appendix E

Health Risk Assessment

This Appendix describes the approach that ENVIRON used to perform the health risk assessment (HRA) for the Project. The HRA was conducted using a methodology that is consistent with Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics Hot Spots Program Risk Assessment Guidelines¹ and SCAQMD Rule 1401/212 risk assessment guidance.²

¹ Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, August 2003.

² South Coast Air Quality Management District, Risk Assessment Procedures for Rules 1401 and 212. Version 7.0. July 2005

E.1 Methodology

The Hotspots Analysis and Reporting Program (HARP), which incorporates the programmatic requirements of the Air Toxics “Hot Spots” Program and the OEHHA guidelines, is often used as a tool to conduct a HRA. It is a computer software package that combines facility prioritization, air dispersion modeling, and health risk analysis. Due to complexities in the modeling representation of traffic operations, HARP was not used to calculate the health risks for the Project. Instead, the air dispersion modeling was conducted using AERMOD, and the health risk calculations were performed in spreadsheets/databases using methodologies consistent with the SCAQMD Rule 1401/212 guidance document. The detailed methodology for the health risk estimates is described below.

E.2 Hazard Assessment

This section discusses the identification of chemicals of potential concern (COPC) and specification of their toxicities.

E.2.1 Chemicals of Potential Concern

In March 2001, EPA issued its first MSAT rule, 40 CFR Parts 80 and 86 - Control of Emissions of Hazardous Air Pollutants From Mobile Sources; Final Rule, March 2001 (<http://www.epa.gov/EPA-AIR/2001/March/Day-29/a37.htm>), which identified 21 MSAT as being hazardous air pollutants that required regulation. A subset of six MSAT was identified as having the greatest influence on human health: diesel exhaust, benzene, 1,3-butadiene, acetaldehyde, formaldehyde and acrolein. In February 2007 EPA issued a second MSAT rule, which generally supported the findings in the first rule and recommended the following list of MSAT as having the greatest influence on human health: acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter. As presented in the I-710 EIR/EIS AQ/HRA Protocol (released March 2009) and agreed on by the AQ/HRA Working Group and the Agency Air Technical Working Group (AATWG), the I-710 AQ/HRA evaluates the six priority MSAT identified in the first MSAT rule. The September 2009 FHWA guidance, which references the newest seven priority MSAT, was released after I-710 Project analyses were underway. The Lead Agency confirmed use of original six priority MSAT because the Protocol was completed and the analyses were well underway before the new guidance was issued.

As discussed in the main report and summarized above, the COPC analyzed for the Project were these six priority MSAT listed below:

- Diesel exhaust (particulate matter and organic gases)
- Benzene
- 1,3-Butadiene
- Acetaldehyde
- Formaldehyde
- Acrolein

E.2.2 Toxicity Assessment

The HRA assessed the potential incremental carcinogenic and non-carcinogenic impacts for the project alternatives. Most regulatory agencies consider carcinogens to pose a risk of cancer at all exposure levels (i.e., a “no-threshold” assumption); that is, any increase in dose is assumed to be associated with an increase in the probability of developing cancer. (Note, this does not mean any dose will result in an effect; the risk of an effect is increased with the increasing dose). In contrast, non-carcinogens generally are thought to produce adverse health effects only when some minimum exposure level is reached (i.e., a threshold).

Toxicity studies with laboratory animals or epidemiological studies of human populations are relied upon to develop toxicity criteria. The toxicities of many of the COPCs evaluated for the Project are relatively well-known and their toxicity criteria have been well established. Toxicological values from the latest version of Cal/EPA OEHHA and CARB's Consolidated Table of Approved Risk Assessment Health Values³ were used in this assessment.

Diesel exhaust is a complex mixture of hydrocarbons, particulates, gases, water, and other compounds. The precise composition of the mixture depends on several factors including the fuel source, engine type, engine age, and operating condition. Diesel exhaust is classified by OEHHA and the USEPA as a carcinogen, and both agencies also recognize that diesel exhaust causes non-cancer effects as well (OEHHA 1998, 2007; USEPA, 2008). Under California regulatory guidelines (OEHHA, 1998, 2007), Diesel particulate matter (DPM) is used as a surrogate for the complex chemical mixture in diesel exhaust, and the unit risk factor (URF) and reference exposure level (REL) that OEHHA has developed for DPM reflects that approach (OEHHA, 1998). The methodology used to develop the emission inventories of MSAT for all traffic operational activities is discussed in Appendix C, Section C.5.

OEHHA also periodically revises toxicity values for compounds. The most recent revision by OEHHA was made in February 2009 when OEHHA revised the chronic and acute reference exposure levels for acrolein, acetaldehyde, and formaldehyde. Table 1 below provides the toxicity values for the MSAT that were used in this HRA.

Table 1: Toxicity Values Used in the HRA

MSAT Name	CAS	Acute Reference Exposure Level ($\mu\text{g}/\text{m}^3$)	Chronic Reference Exposure Level ($\mu\text{g}/\text{m}^3$)	Cancer Potency ($\text{mg}/\text{kg}\cdot\text{day}$) ⁻¹
1,3-butadiene	106990	--	20	0.6
Acetaldehyde	75070	470	140	0.01
Benzene	71432	1300	60	0.1
Formaldehyde	50000	55	9	0.021
Acrolein	107028	2.5	0.35	--
Diesel Exhaust PM	9901	--	5	1.1

³ Cal/EPA. 2004. Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values. Office of Environmental Health Hazard Assessment and Air Resources Board. February, 2009.

E.3 Exposure Assessment

The health risk posed by the identified COPCs requires an assessment of the fate and transport of potential emissions to receptors and an estimation of exposure at a receptor(s). The fate and transport of COPCs are estimated using air dispersion modeling tools. Exposure is assessed by pathways. Primary and secondary exposure pathways include inhalation, primary non-inhalation, and secondary non-inhalation exposure pathways. The primary non-inhalation pathways include dermal exposure, water ingestion, crop ingestion (direct deposition), and soil ingestion. The secondary non-inhalation pathways include ingestion of mother's milk, fish, dairy products, all types of meat and eggs, and crop ingestion (root uptake). SCAQMD has developed multi-pathway factors for each COPC that account for the applicable pathways for the COPC. The multi-pathway factors as recommended by SCAQMD for the COPC were used for calculating the health risks in this HRA.

The populations of interest for this Project are residential, commercial (i.e., occupational), and sensitive receptors such as schools, child care centers, senior centers, healthcare and convalescence homes. Additional assumptions also need to be made in order to estimate cancer risks. For example, a residential receptor is typically assumed to have continuous ambient (i.e., outdoor) air exposure of 24-hours per day for a 70-year lifetime. This is a highly conservative assumption, since most people do not remain at home all day nor are home every day, and residents typically change residences approximately every 9 years (USEPA, 1997). For off-site workers, SCAQMD guidance suggests that the exposure be based on a 40 year working lifetime and 250 days per year. This is a highly conservative assumption, since most people do not remain at the same job for 40 years nor are they at work every workday.

Based on this approach, the potential excess cancer risk associated with exposure to a carcinogen was estimated to be the product of the annual average concentration and the cancer potency (CP) for that carcinogen, the daily breathing rate (DBR), the exposure value factor (EVF), and the multipathway factor (for chemicals having impacts due to multiple pathways). The equation used to calculate the potential excess cancer risk is:

$$Risk_i = C_i \times CP_i \times DBR \times EVF \times MP$$

.....Equation E. 1

Where:

- $Risk_i$ = Lifetime Excess Cancer Risk from exposure to chemical_i
- C_i = Representative Air Concentration for chemical_i ($\mu\text{g}/\text{m}^3$)
- CP_i = Cancer Potency_i ($\text{mg}/\text{kg}\cdot\text{day}$)⁻¹
- DBR = Daily Breathing Rate (L/kg body weight-day)
- EVF = Exposure Value Factor (unitless)
- MP = MultiPathway Factor (unitless)

An estimate of incremental excess cancer risk from exposure to Project emissions was calculated by summing the chemical-specific excess cancer risks. It should be noted that the

health risks were calculated only for the “residential” exposure scenario to have a conservative estimate of the risks.

The potential for chronic non-carcinogenic health effects was evaluated by calculating the total hazard index (HI) for the Project emissions. This HI represents the sum of the hazard quotients (HQs) developed for each individual Project-related chemical, where a HQ is the ratio of the representative air concentration of the chemical to the chemical-specific non-cancer reference exposure level (REL). The non-cancer RELs represent the daily average exposure concentration at (or below) which no adverse health effects are anticipated.

The equations that were used to calculate the chemical-specific chronic HQs and HIs are:

$$HQ_i = C_i \times \frac{MP}{REL_i} \quad \text{.....Equation E. 2}$$

$$HI = \sum HQ_i \quad \text{.....Equation E. 3}$$

Where:

- HQ_i = Hazard Quotient for chemical_i
- C_i = Average Daily Air Concentration for chemical_i (µg/m³)
- MP = MultiPathway Factor (unitless)
- REL_i = Noncancer Chronic Reference Exposure Level for chemical_i (µg/m³)
- HI = Hazard Index

The equations that were used to calculate the chemical-specific acute HQs and HIs are:

$$HQ_i = \frac{C_i}{REL_i} \quad \text{.....Equation E. 4}$$

$$HI = \sum HQ_i \quad \text{.....Equation E. 5}$$

Where:

- HQ_i = Hazard Quotient for chemical_i
- C_i = Average Daily Air Concentration for chemical_i (µg/m³)
- REL_i = Noncancer Acute Reference Exposure Level for chemical_i (µg/m³)
- HI = Hazard Index

E.4 Risk Characterization

The results from the health risk calculations provided an estimate of the potential risks and hazards to individuals through inhalation of ambient air and other selected pathways as discussed above. The estimated risks and hazards included: lifetime excess cancer risk estimates, cumulative chronic HI estimates, and cumulative acute HI estimates for the receptor locations of concern.

The cancer risks from exposure to multiple carcinogens and multiple pathways were summed across all exposure pathways for all sources contributing to the overall exposure that may potentially impact the receptor.⁴ The summaries of the cancer risk estimates, chronic hazard index and acute hazard index are presented in the main report.

⁴ USEPA. 1989. Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual (Part A). USEPA 540/1-89-002, Office of Emergency and Remedial Response, Washington, DC. December.

E.5 Uncertainties

ENVIRON has used appropriate engineering and scientific methods in the health risk analysis presented in this report. However, there is a great deal of uncertainty associated with the process of risk assessment. In this context, uncertainty may be defined as what is not known and may be reduced with further scientific studies. The uncertainty arises from lack of data in many areas necessitating the use of assumptions. Sources of uncertainty, which may either underestimate or overestimate the off-site impact, include:

Exposure estimates

Toxicity data

E.5.1 Exposure Estimates

Conservative assumptions on exposure likely overestimate the risks for the residential receptors. For the health risk analysis it has been assumed that the residents are exposed to ambient (i.e., outdoor) air for 24 hours per day, 365 days per year for 70 years at the same location. However, residents usually leave their houses on daily basis for work, shopping, errands, etc. In addition, there is a natural range or variability in the human population in such properties as height, weight, and susceptibility to air toxicants.

E.5.2 Toxicity Data

Uncertainty in toxicity data include:

The differences among species and human populations cannot be easily quantified and incorporated into risk analysis. Factors including metabolism, target site sensitivity, diet, immunological responses, and genetics may influence the response to toxic pollutants.

Uncertainties in the assumptions underlying the dose-response level used

Extrapolation from large experimental doses, where, for example, other toxic effects may compromise the assessment of carcinogenic potential, to usually much smaller environmental doses

Lack of data on absorption efficiencies for most compounds

Lack of knowledge about interactions from simultaneous exposures to a number of compounds, i.e., synergistic or antagonistic effects that could over or under estimate the risks

Therefore, the risk estimates generated by this health analysis should not be interpreted as the expected rates of disease in the exposed population but rather as estimates of potential incremental risk impacts, based on current knowledge and a number of assumptions.

E.6 References

- Office of Environmental Health Hazard Assessment (OEHHA). 1998. Findings of the Scientific Review Panel on The Report on Diesel Exhaust, as adopted at the Panel's April 22, 1998, meeting. Available electronically at <http://www.arb.a.gov>
- . 2007. Air Toxics Hot Spots Program Risk Assessment Guidelines: Part II Technical Support Document for Describing Available Cancer Potency Factors. California Environmental Protection Agency (Cal/EPA). December, 2007.
- United States Environmental Protection Agency (USEPA). 1997. Exposure Factors Handbook, Volume III - Activity Factors. Office of Research and Development. EPA/600/P-95/002Fc, August 1997.
- USEPA. 2008. Integrated Risk Information System (IRIS). (<http://www.epa.gov/iris/>)

Appendix F

Traffic Greenhouse Gas Emissions

Greenhouse Gases (GHG) are gases that are known to trap heat in the atmosphere. Some GHGs, such as water vapor, carbon dioxide, methane, nitrous oxide, and ozone, occur naturally in the atmosphere. Certain human activities, however, add to the levels of these naturally occurring gases and contribute other, non-naturally occurring greenhouse gases, such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

The six GHGs that are the focus of California and international regulatory efforts (e.g., the Kyoto Protocol) are listed in Table 1, along with major human-activity sources and respective “global warming potential” (GWP). Because of variation in their physical properties, different GHGs have different impacts on climate. The strength of a GHG's climate impact is expressed in terms of its GWP, which is measured relative to carbon dioxide that has a reference point of one, and is projected over a specific time horizon (typically, one hundred years). Methane, for example, is 21 times as potent a global warming gas as carbon dioxide, while nitrous oxide is 310 times as potent. Emissions of different GHGs are combined by weighting emissions of individual GHGs by their respective global warming potentials and summing across all GHGs to express the total in terms of “CO₂ equivalents” or CO₂e.

Table 1: Different GHGs, Major Sources, and Global Warming Potential

GHG	Major Sources	Global Warming Potential ¹
Carbon dioxide (CO ₂)	Fossil fuel combustion, certain manufacturing processes, and waste combustion	1
Methane (CH ₄)	Agriculture, waste (e.g. landfill gas), gas distribution, and coal mining	21
Nitrous oxide (N ₂ O)	Agriculture, transport, and nitric and adipic acid production	310
Hydrofluorocarbons	Refrigerants, foam blowing, and fire fighting	140 - 9,800
Perfluorocarbons	Electronics manufacturing, refrigerants, and aluminum smelting	4,800 - 9,200
Sulfur hexafluoride (SF ₆)	High voltage switch gear, magnesium smelting, gas-filled training shoes	23,900

This analysis calculates the incremental changes in on-road mobile source GHG emissions, compared to the 2008 baseline and 2035 No-Build Alternative (Alternative 1). The GHGs that are emitted by on-road mobile sources are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). ENVIRON calculated the GHG emissions in the SCAB for the 2008 baseline and all five 2035 project alternatives (Alternatives 1, 5A, 6A, 6B and 6C) by using a combination of the methodologies provided in the California Climate Action Registry's General Reporting Protocol, Version 3.1, 2009 (CCAR GRP) and fuel consumption/economy data obtained from EMFAC2007 models as discussed below. It is important to note that the EMFAC2007 fuel economy data used in this analysis do not account for the reductions from the Paveley Standards (adopted October 2009) or other recently adopted on-road mobile source GHG standards. These standards may reduce overall 2035 GHG emissions (particularly from passenger vehicles) and the incremental GHG emissions compared to the 2008 baseline. It should not

¹ Second Assessment Report (SAR) of the Intergovernmental Panel on Climate Change, 1995

affect the conclusions of the comparison among alternatives for incremental impacts compared to the 2035 No-Build Alternative (Alternative 1).

Development of Operational GHG Emission Inventories

The methodology used to develop operational GHG inventories was similar to that used for other criteria pollutants (Section C.1 of Appendix C). Equation F.1 was used to calculate the emission inventories of individual GHGs (CO₂, CH₄ and N₂O) in SCAB from on-road mobile sources for all six project alternatives.

$$\text{Individual GHG Emissions (tons/day)} = \frac{365}{453.59 \times 2000} \times \sum_k \sum_j \sum_i EF_{i,S_{j,k}} \times VMT_{i,j,k}$$

.....Equation F.1

Where,

453.59×2000	=	Conversion factor from tons to grams
365	=	Conversion from day to year
i	=	A particular vehicle class as defined in the I-710 Traffic Model. Vehicle classes used in this analysis include automobiles, light-heavy duty trucks (LHDT), medium-heavy duty trucks (MHDT), heavy-heavy duty trucks (HHDT) and port trucks
j	=	A particular time period. A day was split into four time periods for this analysis AM (6 AM – 9 AM), mid-day (9 AM - 3 PM), PM (3 PM – 7 PM) and night time (7 PM – 6 AM)
k	=	A particular traffic link or section of a roadway in the region for which total emissions are calculated.
$S_{j,k}$	=	Average vehicle speed during the j th time period for the k th link.
$VMT_{i,j,k}$	=	Total vehicle miles travelled by the i th vehicle class during the j th time period in the k th traffic link. This is calculated as a product of length of the k th traffic link and the traffic volume of the i th vehicle class during the j th time period flowing through the k th traffic link
$EF_{i,S_{j,k}}$	=	Individual GHG emission factor of the i th vehicle class at speed $S_{j,k}$ expressed in grams per miles

The input parameters required for this equation include emission factors of individual GHGs, traffic volume, traffic link length, and average vehicle speed. Development of the individual GHG emission factors are discussed in detail in the later part of this appendix. The other input parameters such as traffic volume, traffic link length, and average vehicle speed were obtained from I-710 Traffic Model data provided by Cambridge Systematics (Refer to Section C.2 of Appendix C for further details).

Total GHG emissions from the project in CO₂ equivalents (CO₂e) were calculated using Equation F.2.

$$\begin{aligned}
 \text{Total GHG Emissions} \frac{\text{tons CO}_{2e}}{\text{yr}} &= \text{CO}_2 \text{ Emissions} \frac{\text{tons}}{\text{yr}} + \text{CH}_4 \text{ Emissions} \frac{\text{tons}}{\text{yr}} \times \text{GWP}_{\text{CH}_4} \\
 &+ \text{N}_2\text{O Emissions} \frac{\text{tons}}{\text{yr}} \times \text{GWP}_{\text{N}_2\text{O}}
 \end{aligned}$$

.....Equation F.2

Where,

GWP_{CH₄} = Global Warming Potential for CH₄ as listed in Table 1

GWP_{N₂O} = Global Warming Potential for N₂O as listed in Table 1

Development of the individual GHG emission factors in g/mi

Tables F.1-1A to F.1-1G and F.2-1A to F.2-1G provide data associated with the development of the GHG emission factors for base year 2008 and future year 2035 respectively. A brief description of this process for each GHG is presented below.

CO₂ Emission Factors

CO₂ emission factors for each vehicle class in grams per mile were calculated using CCAR GRP² CO₂ emission factor in kilograms of CO₂ per gallon of fuel (kg/gal) and the fuel economy data from the EMFAC2007 model as shown in Equation F.3 below. Details of the EMFAC2007 model run are provided in Section C.3 of Appendix C. Port Trucks were treated as HHDTs, similar to the assumption made in the calculation of criteria pollutant emissions as discussed in Appendix C.

$$\text{Emission Factor} \frac{\text{g}}{\text{mi}} = \frac{\text{Emission Factor} \frac{\text{kg}}{\text{gal}} \times 1000 \frac{\text{g}}{\text{kg}}}{\text{Fuel Economy} \frac{\text{mi}}{\text{gal}}}$$

.....Equation F.3

Calculating the CO₂ emission factors for the automobile vehicle class involved an extra step. First, Equation F.4 was used to calculate the mixed fuel economy for automobiles from the fuel economy values of the different automobile classes provided by the EMFAC2007 model using a weighted average method. This mixed fuel economy was then used in Equation F.3 to calculate the emission factors of automobiles in g/mi.

² California Climate Action Registry's General Reporting Protocol, Version 3.1, Table C.3

$$MFE = \frac{FE_{NCAT} \times VMT_{NCAT} + FE_{CAT} \times VMT_{CAT} + FE_{DSL} \times VMT_{DSL}}{VMT_{all}}$$

.....Equation F.4

Where,

MFE	=	Mixed fuel economy in gal/mi
FE_{NCAT}	=	Fuel economy of non-catalytic automobiles in mi/gal
VMT_{NCAT}	=	Vehicle miles travelled non-catalytic automobiles provided by EMFAC2007
FE_{CAT}	=	Fuel economy of catalytic automobiles in mi/gal
VMT_{CAT}	=	Vehicle miles travelled by catalytic automobiles provided by EMFAC2007
FE_{DSL}	=	Fuel economy of diesel automobiles in mi/gal
VMT_{DSL}	=	Vehicle miles travelled by diesel automobiles provided by EMFAC2007
VMT_{all}	=	Vehicle miles travelled by all automobiles provided by EMFAC2007

CH₄/N₂O Emission Factors

Emission factors for CH₄ and N₂O from the CCAR GRP³ in grams per mile (g/mi) were used to calculate the emissions of CH₄ and N₂O. Note that the emission factors given in CCAR vary with vehicle class and engine model year. The I-710 Traffic Model data are in the form of traffic volume per link for different vehicle classes with no information regarding vehicle model year. As a result, a weighted average emission factor for each vehicle class was developed using Equation F.5 below. EMFAC was run in the Burden Mode with “the output of model years” selected which yields the population of a particular model year for the scenario year chosen.

$$EF_{VC} = \sum_{MY} EF_{MY} \times F_{MY}$$

.....Equation F. 5

Where,

EF_{VC}	=	Emission Factor in g/mi for a vehicle class VC
MY	=	Model Year
EF_{MY}	=	Emission Factor for in g/mi for model year MY of vehicle class VC
F_{MY}	=	Fraction of population of model year MY which can be calculated as a ratio of population of the vehicles in model year MY of vehicle class VC to the total population of vehicles in vehicle class VC

It should further be noted that CCAR provides emission factors for autos, light duty trucks (weighing less than 5750 lbs) and heavy duty trucks (weighing greater than 5750 lbs) whereas EMFAC provides several other vehicle classes. For purposes of developing the emission factors using Equation F.5, the emission factor of light duty trucks in CCAR were applied to the

³ California Climate Action Registry's General Reporting Protocol, Version 3.1, Table C.4

LDT1 and LDT2 vehicle classes in EMFAC and the emission factor of heavy duty trucks in CCAR were applied to the LHDT, MHDT, and HHDT vehicle classes in EMFAC. As in the case of criteria pollutants, the port trucks were treated as HHDT trucks for developing their emission factors.

Table F.1-1A. 2008 Calendar Year EMFAC Based Fuel Consumption (miles/gallon)

Speed (MPH)	Vehicle Class and Fuel Type															
	LDA NCAT	LDA CAT	LDA DSL	LDA ALL	LDT1 NCAT	LDT1 CAT	LDT1 DSL	LDT1 ALL	LDT2 NCAT	LDT2 CAT	LDT2 DSL	LDT2 ALL	MDV NCAT	MDV CAT	MDV DSL	MDV ALL
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	4.6	7.9	0.0	7.9	4.5	6.4	0.0	6.3	4.6	6.4	0.0	6.3	3.4	4.6	0.0	4.6
2	4.6	7.9	0.0	7.9	4.5	6.4	0.0	6.3	4.6	6.4	0.0	6.3	3.4	4.6	0.0	4.6
3	4.7	8.1	0.0	8.1	4.7	6.6	0.0	6.5	4.7	6.6	0.0	6.5	3.5	4.8	0.0	4.8
4	5.0	8.7	0.0	8.6	5.0	7.0	0.0	6.9	5.1	7.0	0.0	7.0	3.8	5.1	0.0	5.1
5	5.4	9.2	0.0	9.2	5.3	7.4	0.0	7.4	5.4	7.4	0.0	7.4	4.0	5.4	0.0	5.4
10	7.2	12.2	0.0	12.1	7.1	9.8	0.0	9.7	7.2	9.8	0.0	9.8	5.4	7.2	0.0	7.1
15	9.2	15.5	0.0	15.5	9.1	12.5	0.0	12.4	9.2	12.5	0.0	12.5	6.9	9.1	0.0	9.1
20	11.3	19.0	0.0	19.0	11.2	15.3	0.0	15.2	11.3	15.3	0.0	15.3	8.5	11.2	0.0	11.2
25	13.4	22.5	0.0	22.4	13.3	18.1	0.0	18.0	13.4	18.1	0.0	18.1	10.0	13.2	0.0	13.2
30	15.2	25.7	0.0	25.6	15.1	20.7	0.0	20.5	15.3	20.6	0.0	20.6	11.4	15.1	0.0	15.1
35	16.6	28.2	0.0	28.1	16.5	22.7	0.0	22.6	16.7	22.7	0.0	22.6	12.4	16.6	0.0	16.6
40	17.5	29.8	0.0	29.7	17.4	24.0	0.0	23.9	17.5	24.0	0.0	24.0	13.0	17.6	0.0	17.5
45	17.6	30.4	0.0	30.4	17.5	24.5	0.0	24.4	17.6	24.5	0.0	24.5	13.1	17.9	0.0	17.9
50	17.0	29.9	0.0	29.9	16.9	24.1	0.0	23.9	17.1	24.1	0.0	24.1	12.6	17.6	0.0	17.6
55	15.8	28.4	0.0	28.3	15.7	22.8	0.0	22.7	15.9	22.8	0.0	22.8	11.6	16.7	0.0	16.7
60	14.1	25.9	0.0	25.8	14.0	20.9	0.0	20.7	14.1	20.9	0.0	20.8	10.3	15.2	0.0	15.2
65	12.0	22.8	0.0	22.7	11.9	18.3	0.0	18.2	12.0	18.4	0.0	18.3	8.7	13.4	0.0	13.4
70	12.0	22.8	0.0	22.7	11.9	18.3	0.0	18.2	12.0	18.4	0.0	18.3	8.7	13.4	0.0	13.4
75	12.0	22.8	0.0	22.7	11.9	18.3	0.0	18.2	12.0	18.4	0.0	18.3	8.7	13.4	0.0	13.4
80	12.0	22.8	0.0	22.7	11.9	18.3	0.0	18.2	12.0	18.4	0.0	18.3	8.7	13.4	0.0	13.4

Note:

The EMFAC2007 run was done for the South Coast Air Basin and using the annual average option.

Table F.1-1A. 2008 Calendar Year EMFAC Based Fuel Consumption (miles/gallon)

Speed (MPH)	Vehicle Class and Fuel Type															
	LHD1 NCAT	LHD1 CAT	LHD1 DSL	LHD1 ALL	LHD2 NCAT	LHD2 CAT	LHD2 DSL	LHD2 ALL	MHD NCAT	MHD CAT	MHD DSL	MHD ALL	HHD NCAT	HHD CAT	HHD DSL	HHD ALL
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2.8	3.5	0.0	3.5	2.8	3.5	0.0	3.5	2.5	3.4	0.0	3.4	1.3	3.1	0.0	3.1
2	2.8	3.5	0.0	3.5	2.8	3.5	0.0	3.5	2.5	3.4	0.0	3.4	1.3	3.1	0.0	3.1
3	2.8	3.5	0.0	3.5	2.8	3.5	0.0	3.5	2.5	3.4	0.0	3.4	1.3	3.1	0.0	3.1
4	2.8	3.5	0.0	3.5	2.8	3.5	0.0	3.5	2.5	3.4	0.0	3.4	1.3	3.1	0.0	3.1
5	2.8	3.5	0.0	3.5	2.8	3.5	0.0	3.5	2.5	3.4	0.0	3.4	1.3	3.1	0.0	3.1
10	4.2	5.2	0.0	5.2	4.2	5.2	0.0	5.2	3.8	5.2	0.0	5.1	2.0	4.7	0.0	4.6
15	6.0	7.4	0.0	7.4	6.0	7.5	0.0	7.4	5.4	7.3	0.0	7.3	2.8	6.7	0.0	6.6
20	8.0	10.0	0.0	10.0	8.0	10.0	0.0	10.0	7.3	9.9	0.0	9.8	3.8	9.0	0.0	8.9
25	10.2	12.7	0.0	12.7	10.3	12.8	0.0	12.8	9.3	12.6	0.0	12.5	4.8	11.5	0.0	11.4
30	12.4	15.4	0.0	15.4	12.4	15.4	0.0	15.4	11.2	15.2	0.0	15.1	5.8	13.9	0.0	13.7
35	14.1	17.6	0.0	17.5	14.2	17.6	0.0	17.6	12.8	17.4	0.0	17.3	6.7	15.9	0.0	15.7
40	15.3	19.0	0.0	19.0	15.3	19.1	0.0	19.0	13.9	18.8	0.0	18.7	7.3	17.2	0.0	17.0
45	15.7	19.4	0.0	19.4	15.7	19.5	0.0	19.4	14.2	19.2	0.0	19.1	7.4	17.6	0.0	17.4
50	15.2	18.8	0.0	18.8	15.2	18.9	0.0	18.8	13.8	18.6	0.0	18.5	7.2	17.1	0.0	16.8
55	13.9	17.2	0.0	17.2	14.0	17.3	0.0	17.3	12.6	17.0	0.0	16.9	6.6	15.7	0.0	15.4
60	12.1	14.9	0.0	14.9	12.1	15.0	0.0	15.0	11.0	14.8	0.0	14.7	5.8	13.6	0.0	13.4
65	9.9	12.3	0.0	12.2	10.0	12.3	0.0	12.3	9.0	12.1	0.0	12.1	4.8	11.2	0.0	11.0
70	7.7	9.5	0.0	9.5	7.7	9.6	0.0	9.5	7.0	9.4	0.0	9.4	3.7	8.7	0.0	8.6
75	5.7	7.0	0.0	7.0	5.7	7.0	0.0	7.0	5.2	6.9	0.0	6.9	2.7	6.4	0.0	6.3
80	4.0	4.9	0.0	4.9	4.0	4.9	0.0	4.9	3.6	4.8	0.0	4.8	1.9	4.5	0.0	4.4

Note:

The EMFAC2007 run was done for the South Coast Air Basin and using the annual average option.

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
1	NCAT	1965	14,449	210	54,306	5,077	379,160
1	NCAT	1966	9,129	136	35,053	5,164	374,083
1	NCAT	1967	8,499	129	33,141	5,252	368,919
1	NCAT	1968	7,712	119	30,537	5,344	363,666
1	NCAT	1969	8,371	131	33,649	5,438	358,322
1	NCAT	1970	7,476	120	30,499	5,533	352,885
1	NCAT	1971	6,404	104	26,509	5,631	347,351
1	NCAT	1972	7,447	124	31,273	5,732	341,720
1	NCAT	1973	7,892	133	33,618	5,836	335,988
1	NCAT	1974	6,375	110	27,535	5,943	330,152
1	NCAT	1975	384	7	1,680	6,052	324,209
1	NCAT	1976	617	11	2,756	6,165	318,157
1	NCAT	1977	585	11	2,685	6,282	311,992
1	NCAT	1978	436	8	2,067	6,402	305,710
1	NCAT	1979	845	16	4,139	6,525	299,308
1	NCAT	1980	0	0	0	0	0
1	NCAT	1981	0	0	0	0	0
1	NCAT	1982	0	0	0	0	0
1	NCAT	1983	0	0	0	0	0
1	NCAT	1984	0	0	0	0	0
1	NCAT	1985	0	0	0	0	0
1	NCAT	1986	0	0	0	0	0
1	NCAT	1987	0	0	0	0	0
1	NCAT	1988	0	0	0	0	0
1	NCAT	1989	0	0	0	0	0
1	NCAT	1990	0	0	0	0	0
1	NCAT	1991	0	0	0	0	0
1	NCAT	1992	0	0	0	0	0
1	NCAT	1993	0	0	0	0	0
1	NCAT	1994	0	0	0	0	0
1	NCAT	1995	0	0	0	0	0
1	NCAT	1996	0	0	0	0	0
1	NCAT	1997	0	0	0	0	0
1	NCAT	1998	0	0	0	0	0
1	NCAT	1999	0	0	0	0	0
1	NCAT	2000	0	0	0	0	0
1	NCAT	2001	0	0	0	0	0
1	NCAT	2002	0	0	0	0	0
1	NCAT	2003	0	0	0	0	0
1	NCAT	2004	0	0	0	0	0
1	NCAT	2005	0	0	0	0	0
1	NCAT	2006	0	0	0	0	0
1	NCAT	2007	0	0	0	0	0
1	NCAT	2008	0	0	0	0	0
1	CAT	1965	0	0	0	0	0
1	CAT	1966	0	0	0	0	0
1	CAT	1967	0	0	0	0	0
1	CAT	1968	0	0	0	0	0
1	CAT	1969	0	0	0	0	0
1	CAT	1970	0	0	0	0	0
1	CAT	1971	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
1	CAT	1972	0	0	0	0	0
1	CAT	1973	0	0	0	0	0
1	CAT	1974	0	0	0	0	0
1	CAT	1975	3,450	61	15,110	6,052	324,209
1	CAT	1976	4,522	81	20,213	6,165	318,157
1	CAT	1977	5,914	108	27,145	6,282	311,992
1	CAT	1978	8,280	153	39,242	6,402	305,710
1	CAT	1979	9,707	183	47,562	6,525	299,308
1	CAT	1980	7,786	149	39,392	6,654	292,783
1	CAT	1981	9,280	182	48,435	6,786	286,130
1	CAT	1982	11,141	222	59,708	6,924	279,343
1	CAT	1983	14,838	302	81,303	7,067	272,419
1	CAT	1984	25,056	521	140,051	7,216	265,352
1	CAT	1985	34,529	733	196,108	7,370	258,137
1	CAT	1986	44,662	968	256,334	7,531	250,767
1	CAT	1987	59,559	1,319	346,002	7,698	243,237
1	CAT	1988	68,816	1,559	403,909	7,875	235,538
1	CAT	1989	89,738	2,081	530,298	8,059	227,664
1	CAT	1990	102,981	2,446	612,675	8,253	219,605
1	CAT	1991	115,622	2,816	693,660	8,457	211,352
1	CAT	1992	114,523	2,861	691,647	8,674	202,895
1	CAT	1993	135,425	3,474	823,301	8,903	194,221
1	CAT	1994	153,186	4,040	938,934	9,147	185,318
1	CAT	1995	189,807	5,146	1,170,994	9,408	176,171
1	CAT	1996	173,938	4,860	1,081,784	9,688	166,763
1	CAT	1997	207,253	5,972	1,297,274	9,991	157,075
1	CAT	1998	224,760	6,693	1,418,093	10,320	147,084
1	CAT	1999	247,436	7,631	1,571,059	10,681	136,764
1	CAT	2000	310,132	9,933	1,981,548	11,079	126,084
1	CAT	2001	309,788	10,320	1,988,638	11,525	115,004
1	CAT	2002	322,932	11,238	2,079,472	12,029	103,480
1	CAT	2003	350,692	12,782	2,268,748	12,612	91,450
1	CAT	2004	344,757	13,249	2,237,248	13,302	78,838
1	CAT	2005	419,229	17,039	2,724,714	14,146	65,536
1	CAT	2006	406,669	17,773	2,651,217	15,234	51,390
1	CAT	2007	398,615	19,138	2,606,684	16,767	36,156
1	CAT	2008	384,755	21,436	2,523,739	19,389	19,389
1	DSL	1965	11	0	41	5,077	379,160
1	DSL	1966	7	0	28	5,164	374,083
1	DSL	1967	13	0	50	5,252	368,919
1	DSL	1968	11	0	45	5,344	363,666
1	DSL	1969	11	0	45	5,438	358,322
1	DSL	1970	19	0	79	5,533	352,885
1	DSL	1971	15	0	64	5,631	347,351
1	DSL	1972	21	0	88	5,732	341,720
1	DSL	1973	22	0	93	5,836	335,988
1	DSL	1974	23	0	101	5,943	330,152
1	DSL	1975	93	2	408	6,052	324,209
1	DSL	1976	158	3	708	6,165	318,157
1	DSL	1977	244	4	1,121	6,282	311,992
1	DSL	1978	422	8	2,002	6,402	305,710

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
1	DSL	1979	1,058	20	5,184	6,525	299,308
1	DSL	1980	1,039	20	5,256	6,654	292,783
1	DSL	1981	1,493	29	7,791	6,786	286,130
1	DSL	1982	1,843	37	9,880	6,924	279,343
1	DSL	1983	2,013	41	11,030	7,067	272,419
1	DSL	1984	1,781	37	9,954	7,216	265,352
1	DSL	1985	1,622	34	9,214	7,370	258,137
1	DSL	1986	408	9	2,340	7,531	250,767
1	DSL	1987	932	20	5,412	7,698	243,237
1	DSL	1988	72	2	424	7,875	235,538
1	DSL	1989	54	1	322	8,059	227,664
1	DSL	1990	71	2	423	8,253	219,605
1	DSL	1991	117	3	704	8,457	211,352
1	DSL	1992	91	2	552	8,674	202,895
1	DSL	1993	72	2	437	8,903	194,221
1	DSL	1994	52	1	317	9,147	185,318
1	DSL	1995	343	9	2,117	9,408	176,171
1	DSL	1996	215	6	1,334	9,688	166,763
1	DSL	1997	206	6	1,289	9,991	157,075
1	DSL	1998	313	9	1,975	10,320	147,084
1	DSL	1999	327	10	2,075	10,681	136,764
1	DSL	2000	212	7	1,357	11,079	126,084
1	DSL	2001	225	8	1,446	11,525	115,004
1	DSL	2002	494	18	3,179	12,029	103,480
1	DSL	2003	516	19	3,340	12,612	91,450
1	DSL	2004	0	0	0	0	0
1	DSL	2005	0	0	0	0	0
1	DSL	2006	0	0	0	0	0
1	DSL	2007	0	0	0	0	0
1	DSL	2008	0	0	0	0	0
1	ELEC	1965	0	0	0	0	0
1	ELEC	1966	0	0	0	0	0
1	ELEC	1967	0	0	0	0	0
1	ELEC	1968	0	0	0	0	0
1	ELEC	1969	0	0	0	0	0
1	ELEC	1970	0	0	0	0	0
1	ELEC	1971	0	0	0	0	0
1	ELEC	1972	0	0	0	0	0
1	ELEC	1973	0	0	0	0	0
1	ELEC	1974	0	0	0	0	0
1	ELEC	1975	0	0	0	0	0
1	ELEC	1976	0	0	0	0	0
1	ELEC	1977	0	0	0	0	0
1	ELEC	1978	0	0	0	0	0
1	ELEC	1979	0	0	0	0	0
1	ELEC	1980	0	0	0	0	0
1	ELEC	1981	0	0	0	0	0
1	ELEC	1982	0	0	0	0	0
1	ELEC	1983	0	0	0	0	0
1	ELEC	1984	0	0	0	0	0
1	ELEC	1985	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
1	ELEC	1986	0	0	0	0	0
1	ELEC	1987	0	0	0	0	0
1	ELEC	1988	0	0	0	0	0
1	ELEC	1989	0	0	0	0	0
1	ELEC	1990	0	0	0	0	0
1	ELEC	1991	0	0	0	0	0
1	ELEC	1992	0	0	0	0	0
1	ELEC	1993	0	0	0	0	0
1	ELEC	1994	0	0	0	0	0
1	ELEC	1995	0	0	0	0	0
1	ELEC	1996	0	0	0	0	0
1	ELEC	1997	0	0	0	0	0
1	ELEC	1998	0	0	0	0	0
1	ELEC	1999	0	0	0	0	0
1	ELEC	2000	0	0	0	0	0
1	ELEC	2001	0	0	0	0	0
1	ELEC	2002	0	0	0	0	0
1	ELEC	2003	86	3	553	12,612	91,450
1	ELEC	2004	38	1	245	13,302	78,838
1	ELEC	2005	115	5	749	14,146	65,536
1	ELEC	2006	2,044	89	13,323	15,234	51,390
1	ELEC	2007	2,406	116	15,735	16,767	36,156
1	ELEC	2008	2,322	129	15,234	19,389	19,389
2	NCAT	1965	4,735	99	17,770	7,217	452,563
2	NCAT	1966	1,597	34	6,134	7,293	445,346
2	NCAT	1967	1,631	35	6,361	7,370	438,053
2	NCAT	1968	1,927	42	7,628	7,449	430,683
2	NCAT	1969	2,410	53	9,686	7,529	423,234
2	NCAT	1970	2,844	63	11,604	7,613	415,704
2	NCAT	1971	2,947	66	12,198	7,698	408,092
2	NCAT	1972	3,864	88	16,226	7,785	400,394
2	NCAT	1973	3,883	89	16,540	7,875	392,608
2	NCAT	1974	1,205	28	5,207	7,967	384,733
2	NCAT	1975	455	11	1,992	8,063	376,766
2	NCAT	1976	106	3	474	8,160	368,703
2	NCAT	1977	142	3	650	8,261	360,543
2	NCAT	1978	198	5	939	8,365	352,282
2	NCAT	1979	146	4	714	8,473	343,917
2	NCAT	1980	113	3	570	8,584	335,444
2	NCAT	1981	0	0	0	0	0
2	NCAT	1982	0	0	0	0	0
2	NCAT	1983	0	0	0	0	0
2	NCAT	1984	0	0	0	0	0
2	NCAT	1985	0	0	0	0	0
2	NCAT	1986	0	0	0	0	0
2	NCAT	1987	0	0	0	0	0
2	NCAT	1988	0	0	0	0	0
2	NCAT	1989	0	0	0	0	0
2	NCAT	1990	0	0	0	0	0
2	NCAT	1991	0	0	0	0	0
2	NCAT	1992	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
2	NCAT	1993	0	0	0	0	0
2	NCAT	1994	0	0	0	0	0
2	NCAT	1995	0	0	0	0	0
2	NCAT	1996	0	0	0	0	0
2	NCAT	1997	0	0	0	0	0
2	NCAT	1998	0	0	0	0	0
2	NCAT	1999	0	0	0	0	0
2	NCAT	2000	0	0	0	0	0
2	NCAT	2001	0	0	0	0	0
2	NCAT	2002	0	0	0	0	0
2	NCAT	2003	0	0	0	0	0
2	NCAT	2004	0	0	0	0	0
2	NCAT	2005	0	0	0	0	0
2	NCAT	2006	0	0	0	0	0
2	NCAT	2007	0	0	0	0	0
2	NCAT	2008	0	0	0	0	0
2	CAT	1965	0	0	0	0	0
2	CAT	1966	0	0	0	0	0
2	CAT	1967	0	0	0	0	0
2	CAT	1968	0	0	0	0	0
2	CAT	1969	0	0	0	0	0
2	CAT	1970	0	0	0	0	0
2	CAT	1971	0	0	0	0	0
2	CAT	1972	0	0	0	0	0
2	CAT	1973	0	0	0	0	0
2	CAT	1974	0	0	0	0	0
2	CAT	1975	346	8	1,515	8,063	376,766
2	CAT	1976	777	19	3,475	8,160	368,703
2	CAT	1977	1,038	25	4,766	8,261	360,543
2	CAT	1978	1,453	35	6,885	8,365	352,282
2	CAT	1979	1,589	39	7,784	8,473	343,917
2	CAT	1980	1,228	31	6,215	8,584	335,444
2	CAT	1981	1,652	42	8,624	8,699	326,860
2	CAT	1982	1,806	46	9,681	8,818	318,162
2	CAT	1983	2,063	54	11,306	8,942	309,344
2	CAT	1984	3,604	95	20,146	9,070	300,402
2	CAT	1985	4,651	124	26,417	9,205	291,332
2	CAT	1986	6,007	163	34,474	9,343	282,127
2	CAT	1987	6,507	179	37,800	9,489	272,784
2	CAT	1988	6,789	190	39,848	9,642	263,295
2	CAT	1989	7,742	220	45,752	9,802	253,653
2	CAT	1990	7,587	219	45,139	9,970	243,851
2	CAT	1991	9,873	289	59,231	10,147	233,881
2	CAT	1992	9,393	281	56,731	10,335	223,734
2	CAT	1993	13,230	402	80,433	10,533	213,399
2	CAT	1994	15,022	465	92,076	10,744	202,866
2	CAT	1995	17,581	555	108,463	10,971	192,121
2	CAT	1996	20,266	654	126,039	11,213	181,150
2	CAT	1997	21,649	715	135,511	11,476	169,937
2	CAT	1998	31,017	1,048	195,695	11,761	158,461
2	CAT	1999	57,978	2,016	368,125	12,074	146,700

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
2	CAT	2000	68,780	2,460	439,459	12,419	134,626
2	CAT	2001	79,306	2,929	509,094	12,805	122,207
2	CAT	2002	45,521	1,734	293,125	13,243	109,403
2	CAT	2003	42,874	1,697	277,369	13,748	96,160
2	CAT	2004	41,420	1,716	268,790	14,345	82,412
2	CAT	2005	45,777	1,990	297,519	15,076	68,067
2	CAT	2006	43,891	2,025	286,143	16,020	52,990
2	CAT	2007	42,275	2,110	276,451	17,349	36,970
2	CAT	2008	39,490	2,245	259,030	19,621	19,621
2	DSL	1965	5	0	18	7,217	452,563
2	DSL	1966	3	0	13	7,293	445,346
2	DSL	1967	3	0	12	7,370	438,053
2	DSL	1968	13	0	53	7,449	430,683
2	DSL	1969	10	0	40	7,529	423,234
2	DSL	1970	8	0	34	7,613	415,704
2	DSL	1971	11	0	44	7,698	408,092
2	DSL	1972	6	0	24	7,785	400,394
2	DSL	1973	16	0	68	7,875	392,608
2	DSL	1974	15	0	65	7,967	384,733
2	DSL	1975	12	0	52	8,063	376,766
2	DSL	1976	15	0	67	8,160	368,703
2	DSL	1977	25	1	116	8,261	360,543
2	DSL	1978	46	1	220	8,365	352,282
2	DSL	1979	63	2	311	8,473	343,917
2	DSL	1980	174	4	879	8,584	335,444
2	DSL	1981	262	7	1,365	8,699	326,860
2	DSL	1982	356	9	1,907	8,818	318,162
2	DSL	1983	345	9	1,891	8,942	309,344
2	DSL	1984	530	14	2,962	9,070	300,402
2	DSL	1985	574	15	3,262	9,205	291,332
2	DSL	1986	508	14	2,913	9,343	282,127
2	DSL	1987	361	10	2,095	9,489	272,784
2	DSL	1988	289	8	1,697	9,642	263,295
2	DSL	1989	408	12	2,414	9,802	253,653
2	DSL	1990	342	10	2,032	9,970	243,851
2	DSL	1991	321	10	1,927	10,147	233,881
2	DSL	1992	345	11	2,084	10,335	223,734
2	DSL	1993	493	15	2,995	10,533	213,399
2	DSL	1994	526	17	3,226	10,744	202,866
2	DSL	1995	999	32	6,165	10,971	192,121
2	DSL	1996	1,100	36	6,838	11,213	181,150
2	DSL	1997	1,321	45	8,266	11,476	169,937
2	DSL	1998	674	23	4,251	11,761	158,461
2	DSL	1999	2,945	106	18,697	12,074	146,700
2	DSL	2000	2,684	99	17,148	12,419	134,626
2	DSL	2001	3,952	151	25,369	12,805	122,207
2	DSL	2002	3,123	125	20,112	13,243	109,403
2	DSL	2003	3,402	140	22,009	13,748	96,160
2	DSL	2004	0	0	0	0	0
2	DSL	2005	0	0	0	0	0
2	DSL	2006	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
2	DSL	2007	0	0	0	0	0
2	DSL	2008	0	0	0	0	0
2	ELEC	1965	0	0	0	0	0
2	ELEC	1966	0	0	0	0	0
2	ELEC	1967	0	0	0	0	0
2	ELEC	1968	0	0	0	0	0
2	ELEC	1969	0	0	0	0	0
2	ELEC	1970	0	0	0	0	0
2	ELEC	1971	0	0	0	0	0
2	ELEC	1972	0	0	0	0	0
2	ELEC	1973	0	0	0	0	0
2	ELEC	1974	0	0	0	0	0
2	ELEC	1975	0	0	0	0	0
2	ELEC	1976	0	0	0	0	0
2	ELEC	1977	0	0	0	0	0
2	ELEC	1978	0	0	0	0	0
2	ELEC	1979	0	0	0	0	0
2	ELEC	1980	0	0	0	0	0
2	ELEC	1981	0	0	0	0	0
2	ELEC	1982	0	0	0	0	0
2	ELEC	1983	0	0	0	0	0
2	ELEC	1984	0	0	0	0	0
2	ELEC	1985	0	0	0	0	0
2	ELEC	1986	0	0	0	0	0
2	ELEC	1987	0	0	0	0	0
2	ELEC	1988	0	0	0	0	0
2	ELEC	1989	0	0	0	0	0
2	ELEC	1990	0	0	0	0	0
2	ELEC	1991	0	0	0	0	0
2	ELEC	1992	0	0	0	0	0
2	ELEC	1993	0	0	0	0	0
2	ELEC	1994	0	0	0	0	0
2	ELEC	1995	0	0	0	0	0
2	ELEC	1996	0	0	0	0	0
2	ELEC	1997	0	0	0	0	0
2	ELEC	1998	0	0	0	0	0
2	ELEC	1999	0	0	0	0	0
2	ELEC	2000	0	0	0	0	0
2	ELEC	2001	0	0	0	0	0
2	ELEC	2002	0	0	0	0	0
2	ELEC	2003	9	0	57	13,748	96,160
2	ELEC	2004	5	0	32	14,345	82,412
2	ELEC	2005	2	0	11	15,076	68,067
2	ELEC	2006	221	10	1,438	16,020	52,990
2	ELEC	2007	255	13	1,669	17,349	36,970
2	ELEC	2008	238	14	1,564	19,621	19,621
3	NCAT	1965	239	5	898	7,219	449,697
3	NCAT	1966	861	18	3,305	7,292	442,478
3	NCAT	1967	776	17	3,028	7,368	435,186
3	NCAT	1968	1,015	22	4,020	7,445	427,818
3	NCAT	1969	1,712	38	6,881	7,524	420,373

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
3	NCAT	1970	1,683	37	6,866	7,605	412,849
3	NCAT	1971	1,669	37	6,907	7,689	405,243
3	NCAT	1972	2,403	55	10,092	7,774	397,554
3	NCAT	1973	2,782	64	11,851	7,862	389,780
3	NCAT	1974	1,968	46	8,502	7,952	381,918
3	NCAT	1975	654	15	2,865	8,046	373,966
3	NCAT	1976	162	4	726	8,141	365,920
3	NCAT	1977	223	5	1,023	8,240	357,779
3	NCAT	1978	271	7	1,285	8,341	349,539
3	NCAT	1979	224	6	1,099	8,447	341,198
3	NCAT	1980	184	5	931	8,555	332,751
3	NCAT	1981	0	0	0	0	0
3	NCAT	1982	0	0	0	0	0
3	NCAT	1983	0	0	0	0	0
3	NCAT	1984	0	0	0	0	0
3	NCAT	1985	0	0	0	0	0
3	NCAT	1986	0	0	0	0	0
3	NCAT	1987	0	0	0	0	0
3	NCAT	1988	0	0	0	0	0
3	NCAT	1989	0	0	0	0	0
3	NCAT	1990	0	0	0	0	0
3	NCAT	1991	0	0	0	0	0
3	NCAT	1992	0	0	0	0	0
3	NCAT	1993	0	0	0	0	0
3	NCAT	1994	0	0	0	0	0
3	NCAT	1995	0	0	0	0	0
3	NCAT	1996	0	0	0	0	0
3	NCAT	1997	0	0	0	0	0
3	NCAT	1998	0	0	0	0	0
3	NCAT	1999	0	0	0	0	0
3	NCAT	2000	0	0	0	0	0
3	NCAT	2001	0	0	0	0	0
3	NCAT	2002	0	0	0	0	0
3	NCAT	2003	0	0	0	0	0
3	NCAT	2004	0	0	0	0	0
3	NCAT	2005	0	0	0	0	0
3	NCAT	2006	0	0	0	0	0
3	NCAT	2007	0	0	0	0	0
3	NCAT	2008	0	0	0	0	0
3	CAT	1965	0	0	0	0	0
3	CAT	1966	0	0	0	0	0
3	CAT	1967	0	0	0	0	0
3	CAT	1968	0	0	0	0	0
3	CAT	1969	0	0	0	0	0
3	CAT	1970	0	0	0	0	0
3	CAT	1971	0	0	0	0	0
3	CAT	1972	0	0	0	0	0
3	CAT	1973	0	0	0	0	0
3	CAT	1974	0	0	0	0	0
3	CAT	1975	498	12	2,179	8,046	373,966
3	CAT	1976	1,191	28	5,325	8,141	365,920

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
3	CAT	1977	1,635	39	7,503	8,240	357,779
3	CAT	1978	1,989	48	9,426	8,341	349,539
3	CAT	1979	2,446	60	11,983	8,447	341,198
3	CAT	1980	2,006	50	10,151	8,555	332,751
3	CAT	1981	2,730	69	14,251	8,668	324,195
3	CAT	1982	3,262	84	17,481	8,784	315,527
3	CAT	1983	3,504	91	19,199	8,906	306,743
3	CAT	1984	8,003	210	44,730	9,031	297,837
3	CAT	1985	12,022	319	68,281	9,163	288,805
3	CAT	1986	19,210	517	110,254	9,299	279,642
3	CAT	1987	20,725	566	120,401	9,441	270,344
3	CAT	1988	22,931	636	134,594	9,590	260,903
3	CAT	1989	30,784	867	181,916	9,747	251,312
3	CAT	1990	29,695	851	176,665	9,912	241,565
3	CAT	1991	41,026	1,194	246,130	10,085	231,653
3	CAT	1992	39,802	1,180	240,379	10,269	221,568
3	CAT	1993	54,891	1,657	333,705	10,463	211,300
3	CAT	1994	60,839	1,874	372,906	10,669	200,837
3	CAT	1995	70,335	2,210	433,926	10,891	190,167
3	CAT	1996	68,125	2,185	423,696	11,128	179,276
3	CAT	1997	80,557	2,646	504,236	11,385	168,148
3	CAT	1998	97,686	3,286	616,338	11,664	156,763
3	CAT	1999	112,543	3,884	714,574	11,970	145,099
3	CAT	2000	130,007	4,616	830,659	12,307	133,129
3	CAT	2001	118,538	4,341	760,941	12,685	120,822
3	CAT	2002	153,700	5,819	989,726	13,113	108,137
3	CAT	2003	160,472	6,313	1,038,147	13,608	95,023
3	CAT	2004	173,792	7,130	1,127,798	14,192	81,416
3	CAT	2005	173,780	7,445	1,129,459	14,908	67,223
3	CAT	2006	173,489	7,879	1,131,035	15,831	52,316
3	CAT	2007	173,089	8,486	1,131,891	17,131	36,485
3	CAT	2008	160,793	8,879	1,054,699	19,354	19,354
3	DSL	1965	2	0	6	7,219	449,697
3	DSL	1966	2	0	6	7,292	442,478
3	DSL	1967	3	0	12	7,368	435,186
3	DSL	1968	1	0	3	7,445	427,818
3	DSL	1969	3	0	13	7,524	420,373
3	DSL	1970	7	0	30	7,605	412,849
3	DSL	1971	1	0	6	7,689	405,243
3	DSL	1972	1	0	4	7,774	397,554
3	DSL	1973	1	0	5	7,862	389,780
3	DSL	1974	5	0	21	7,952	381,918
3	DSL	1975	8	0	35	8,046	373,966
3	DSL	1976	8	0	34	8,141	365,920
3	DSL	1977	13	0	60	8,240	357,779
3	DSL	1978	51	1	240	8,341	349,539
3	DSL	1979	147	4	721	8,447	341,198
3	DSL	1980	78	2	393	8,555	332,751
3	DSL	1981	49	1	255	8,668	324,195
3	DSL	1982	195	5	1,044	8,784	315,527
3	DSL	1983	194	5	1,064	8,906	306,743

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
3	DSL	1984	183	5	1,023	9,031	297,837
3	DSL	1985	154	4	876	9,163	288,805
3	DSL	1986	167	5	961	9,299	279,642
3	DSL	1987	141	4	816	9,441	270,344
3	DSL	1988	82	2	481	9,590	260,903
3	DSL	1989	106	3	628	9,747	251,312
3	DSL	1990	126	4	751	9,912	241,565
3	DSL	1991	88	3	526	10,085	231,653
3	DSL	1992	86	3	519	10,269	221,568
3	DSL	1993	101	3	616	10,463	211,300
3	DSL	1994	124	4	759	10,669	200,837
3	DSL	1995	217	7	1,336	10,891	190,167
3	DSL	1996	136	4	845	11,128	179,276
3	DSL	1997	184	6	1,154	11,385	168,148
3	DSL	1998	145	5	917	11,664	156,763
3	DSL	1999	176	6	1,117	11,970	145,099
3	DSL	2000	210	7	1,344	12,307	133,129
3	DSL	2001	319	12	2,048	12,685	120,822
3	DSL	2002	176	7	1,131	13,113	108,137
3	DSL	2003	223	9	1,440	13,608	95,023
3	DSL	2004	0	0	0	0	0
3	DSL	2005	0	0	0	0	0
3	DSL	2006	0	0	0	0	0
3	DSL	2007	0	0	0	0	0
3	DSL	2008	0	0	0	0	0
3	ELEC	1965	0	0	0	0	0
3	ELEC	1966	0	0	0	0	0
3	ELEC	1967	0	0	0	0	0
3	ELEC	1968	0	0	0	0	0
3	ELEC	1969	0	0	0	0	0
3	ELEC	1970	0	0	0	0	0
3	ELEC	1971	0	0	0	0	0
3	ELEC	1972	0	0	0	0	0
3	ELEC	1973	0	0	0	0	0
3	ELEC	1974	0	0	0	0	0
3	ELEC	1975	0	0	0	0	0
3	ELEC	1976	0	0	0	0	0
3	ELEC	1977	0	0	0	0	0
3	ELEC	1978	0	0	0	0	0
3	ELEC	1979	0	0	0	0	0
3	ELEC	1980	0	0	0	0	0
3	ELEC	1981	0	0	0	0	0
3	ELEC	1982	0	0	0	0	0
3	ELEC	1983	0	0	0	0	0
3	ELEC	1984	0	0	0	0	0
3	ELEC	1985	0	0	0	0	0
3	ELEC	1986	0	0	0	0	0
3	ELEC	1987	0	0	0	0	0
3	ELEC	1988	0	0	0	0	0
3	ELEC	1989	0	0	0	0	0
3	ELEC	1990	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
3	ELEC	1991	0	0	0	0	0
3	ELEC	1992	0	0	0	0	0
3	ELEC	1993	0	0	0	0	0
3	ELEC	1994	0	0	0	0	0
3	ELEC	1995	0	0	0	0	0
3	ELEC	1996	0	0	0	0	0
3	ELEC	1997	0	0	0	0	0
3	ELEC	1998	0	0	0	0	0
3	ELEC	1999	0	0	0	0	0
3	ELEC	2000	0	0	0	0	0
3	ELEC	2001	0	0	0	0	0
3	ELEC	2002	0	0	0	0	0
3	ELEC	2003	0	0	0	0	0
3	ELEC	2004	0	0	0	0	0
3	ELEC	2005	0	0	0	0	0
3	ELEC	2006	0	0	0	0	0
3	ELEC	2007	0	0	0	0	0
3	ELEC	2008	0	0	0	0	0
4	NCAT	1965	67	1	251	6,630	437,786
4	NCAT	1966	52	1	200	6,711	431,156
4	NCAT	1967	69	1	268	6,795	424,445
4	NCAT	1968	82	2	324	6,881	417,650
4	NCAT	1969	105	2	421	6,968	410,769
4	NCAT	1970	128	3	523	7,057	403,802
4	NCAT	1971	130	3	538	7,150	396,744
4	NCAT	1972	209	4	877	7,244	389,594
4	NCAT	1973	271	6	1,154	7,342	382,350
4	NCAT	1974	1,646	35	7,110	7,442	375,008
4	NCAT	1975	1,778	39	7,789	7,544	367,567
4	NCAT	1976	2,327	51	10,401	7,650	360,022
4	NCAT	1977	3,584	80	16,449	7,759	352,372
4	NCAT	1978	414	9	1,963	7,872	344,613
4	NCAT	1979	492	11	2,410	7,988	336,741
4	NCAT	1980	211	5	1,069	8,109	328,753
4	NCAT	1981	158	4	826	8,233	320,644
4	NCAT	1982	105	3	562	8,362	312,412
4	NCAT	1983	0	0	0	0	0
4	NCAT	1984	0	0	0	0	0
4	NCAT	1985	0	0	0	0	0
4	NCAT	1986	0	0	0	0	0
4	NCAT	1987	0	0	0	0	0
4	NCAT	1988	0	0	0	0	0
4	NCAT	1989	0	0	0	0	0
4	NCAT	1990	0	0	0	0	0
4	NCAT	1991	0	0	0	0	0
4	NCAT	1992	0	0	0	0	0
4	NCAT	1993	0	0	0	0	0
4	NCAT	1994	0	0	0	0	0
4	NCAT	1995	0	0	0	0	0
4	NCAT	1996	0	0	0	0	0
4	NCAT	1997	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
4	NCAT	1998	0	0	0	0	0
4	NCAT	1999	0	0	0	0	0
4	NCAT	2000	0	0	0	0	0
4	NCAT	2001	0	0	0	0	0
4	NCAT	2002	0	0	0	0	0
4	NCAT	2003	0	0	0	0	0
4	NCAT	2004	0	0	0	0	0
4	NCAT	2005	0	0	0	0	0
4	NCAT	2006	0	0	0	0	0
4	NCAT	2007	0	0	0	0	0
4	NCAT	2008	0	0	0	0	0
4	CAT	1965	0	0	0	0	0
4	CAT	1966	0	0	0	0	0
4	CAT	1967	0	0	0	0	0
4	CAT	1968	0	0	0	0	0
4	CAT	1969	0	0	0	0	0
4	CAT	1970	0	0	0	0	0
4	CAT	1971	0	0	0	0	0
4	CAT	1972	0	0	0	0	0
4	CAT	1973	0	0	0	0	0
4	CAT	1974	0	0	0	0	0
4	CAT	1975	0	0	0	0	0
4	CAT	1976	0	0	0	0	0
4	CAT	1977	0	0	0	0	0
4	CAT	1978	3,037	69	14,396	7,872	344,613
4	CAT	1979	3,608	82	17,676	7,988	336,741
4	CAT	1980	1,549	36	7,838	8,109	328,753
4	CAT	1981	1,601	38	8,355	8,233	320,644
4	CAT	1982	1,992	48	10,677	8,362	312,412
4	CAT	1983	2,497	61	13,682	8,496	304,049
4	CAT	1984	4,047	100	22,619	8,634	295,553
4	CAT	1985	5,404	136	30,692	8,779	286,919
4	CAT	1986	6,811	174	39,092	8,930	278,140
4	CAT	1987	7,350	191	42,698	9,088	269,210
4	CAT	1988	8,917	236	52,337	9,253	260,122
4	CAT	1989	9,983	270	58,994	9,426	250,869
4	CAT	1990	9,577	264	56,977	9,608	241,443
4	CAT	1991	10,285	289	61,705	9,800	231,835
4	CAT	1992	12,781	367	77,191	10,002	222,035
4	CAT	1993	17,131	503	104,149	10,218	212,033
4	CAT	1994	25,159	755	154,209	10,447	201,815
4	CAT	1995	33,820	1,039	208,650	10,691	191,368
4	CAT	1996	29,030	914	180,548	10,954	180,678
4	CAT	1997	49,990	1,616	312,907	11,239	169,724
4	CAT	1998	46,048	1,530	290,531	11,547	158,485
4	CAT	1999	43,173	1,475	274,123	11,885	146,939
4	CAT	2000	48,487	1,713	309,802	12,258	135,054
4	CAT	2001	67,431	2,465	432,861	12,676	122,796
4	CAT	2002	74,475	2,830	479,574	13,150	110,120
4	CAT	2003	85,961	3,399	556,115	13,696	96,970
4	CAT	2004	98,760	4,093	640,889	14,343	83,274

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
4	CAT	2005	76,992	3,365	500,395	15,134	68,931
4	CAT	2006	76,725	3,579	500,195	16,154	53,797
4	CAT	2007	76,492	3,885	500,205	17,593	37,643
4	CAT	2008	71,102	4,115	466,380	20,051	20,051
4	DSL	1965	1	0	2	6,630	437,786
4	DSL	1966	0	0	0	6,711	431,156
4	DSL	1967	1	0	2	6,795	424,445
4	DSL	1968	1	0	4	6,881	417,650
4	DSL	1969	0	0	0	6,968	410,769
4	DSL	1970	0	0	0	7,057	403,802
4	DSL	1971	0	0	0	7,150	396,744
4	DSL	1972	1	0	4	7,244	389,594
4	DSL	1973	1	0	6	7,342	382,350
4	DSL	1974	1	0	5	7,442	375,008
4	DSL	1975	1	0	5	7,544	367,567
4	DSL	1976	1	0	3	7,650	360,022
4	DSL	1977	1	0	5	7,759	352,372
4	DSL	1978	4	0	17	7,872	344,613
4	DSL	1979	4	0	19	7,988	336,741
4	DSL	1980	7	0	33	8,109	328,753
4	DSL	1981	3	0	13	8,233	320,644
4	DSL	1982	53	1	283	8,362	312,412
4	DSL	1983	42	1	232	8,496	304,049
4	DSL	1984	80	2	448	8,634	295,553
4	DSL	1985	52	1	298	8,779	286,919
4	DSL	1986	85	2	487	8,930	278,140
4	DSL	1987	105	3	609	9,088	269,210
4	DSL	1988	87	2	512	9,253	260,122
4	DSL	1989	32	1	190	9,426	250,869
4	DSL	1990	53	1	314	9,608	241,443
4	DSL	1991	38	1	230	9,800	231,835
4	DSL	1992	19	1	115	10,002	222,035
4	DSL	1993	32	1	193	10,218	212,033
4	DSL	1994	56	2	341	10,447	201,815
4	DSL	1995	93	3	573	10,691	191,368
4	DSL	1996	108	3	671	10,954	180,678
4	DSL	1997	118	4	736	11,239	169,724
4	DSL	1998	89	3	558	11,547	158,485
4	DSL	1999	151	5	957	11,885	146,939
4	DSL	2000	501	18	3,202	12,258	135,054
4	DSL	2001	593	22	3,809	12,676	122,796
4	DSL	2002	659	25	4,245	13,150	110,120
4	DSL	2003	701	28	4,533	13,696	96,970
4	DSL	2004	0	0	0	0	0
4	DSL	2005	0	0	0	0	0
4	DSL	2006	0	0	0	0	0
4	DSL	2007	0	0	0	0	0
4	DSL	2008	0	0	0	0	0
4	ELEC	1965	0	0	0	0	0
4	ELEC	1966	0	0	0	0	0
4	ELEC	1967	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
4	ELEC	1968	0	0	0	0	0
4	ELEC	1969	0	0	0	0	0
4	ELEC	1970	0	0	0	0	0
4	ELEC	1971	0	0	0	0	0
4	ELEC	1972	0	0	0	0	0
4	ELEC	1973	0	0	0	0	0
4	ELEC	1974	0	0	0	0	0
4	ELEC	1975	0	0	0	0	0
4	ELEC	1976	0	0	0	0	0
4	ELEC	1977	0	0	0	0	0
4	ELEC	1978	0	0	0	0	0
4	ELEC	1979	0	0	0	0	0
4	ELEC	1980	0	0	0	0	0
4	ELEC	1981	0	0	0	0	0
4	ELEC	1982	0	0	0	0	0
4	ELEC	1983	0	0	0	0	0
4	ELEC	1984	0	0	0	0	0
4	ELEC	1985	0	0	0	0	0
4	ELEC	1986	0	0	0	0	0
4	ELEC	1987	0	0	0	0	0
4	ELEC	1988	0	0	0	0	0
4	ELEC	1989	0	0	0	0	0
4	ELEC	1990	0	0	0	0	0
4	ELEC	1991	0	0	0	0	0
4	ELEC	1992	0	0	0	0	0
4	ELEC	1993	0	0	0	0	0
4	ELEC	1994	0	0	0	0	0
4	ELEC	1995	0	0	0	0	0
4	ELEC	1996	0	0	0	0	0
4	ELEC	1997	0	0	0	0	0
4	ELEC	1998	0	0	0	0	0
4	ELEC	1999	0	0	0	0	0
4	ELEC	2000	0	0	0	0	0
4	ELEC	2001	0	0	0	0	0
4	ELEC	2002	0	0	0	0	0
4	ELEC	2003	0	0	0	0	0
4	ELEC	2004	0	0	0	0	0
4	ELEC	2005	0	0	0	0	0
4	ELEC	2006	0	0	0	0	0
4	ELEC	2007	0	0	0	0	0
4	ELEC	2008	0	0	0	0	0
5	NCAT	1965	62	1	2,045	7,701	516,129
5	NCAT	1966	12	0	384	7,800	508,428
5	NCAT	1967	14	0	470	7,902	500,628
5	NCAT	1968	24	1	777	8,005	492,726
5	NCAT	1969	22	1	723	8,111	484,721
5	NCAT	1970	35	1	1,156	8,221	476,610
5	NCAT	1971	32	1	1,063	8,332	468,389
5	NCAT	1972	52	1	1,732	8,448	460,057
5	NCAT	1973	75	2	2,487	8,565	451,609
5	NCAT	1974	388	11	12,825	8,687	443,043

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
5	NCAT	1975	377	11	12,454	8,811	434,356
5	NCAT	1976	457	13	15,128	8,939	425,546
5	NCAT	1977	0	0	0	0	0
5	NCAT	1978	0	0	0	0	0
5	NCAT	1979	0	0	0	0	0
5	NCAT	1980	0	0	0	0	0
5	NCAT	1981	0	0	0	0	0
5	NCAT	1982	0	0	0	0	0
5	NCAT	1983	0	0	0	0	0
5	NCAT	1984	0	0	0	0	0
5	NCAT	1985	0	0	0	0	0
5	NCAT	1986	0	0	0	0	0
5	NCAT	1987	0	0	0	0	0
5	NCAT	1988	0	0	0	0	0
5	NCAT	1989	0	0	0	0	0
5	NCAT	1990	0	0	0	0	0
5	NCAT	1991	0	0	0	0	0
5	NCAT	1992	0	0	0	0	0
5	NCAT	1993	0	0	0	0	0
5	NCAT	1994	0	0	0	0	0
5	NCAT	1995	0	0	0	0	0
5	NCAT	1996	0	0	0	0	0
5	NCAT	1997	0	0	0	0	0
5	NCAT	1998	0	0	0	0	0
5	NCAT	1999	0	0	0	0	0
5	NCAT	2000	0	0	0	0	0
5	NCAT	2001	0	0	0	0	0
5	NCAT	2002	0	0	0	0	0
5	NCAT	2003	0	0	0	0	0
5	NCAT	2004	0	0	0	0	0
5	NCAT	2005	0	0	0	0	0
5	NCAT	2006	0	0	0	0	0
5	NCAT	2007	0	0	0	0	0
5	NCAT	2008	0	0	0	0	0
5	CAT	1965	0	0	0	0	0
5	CAT	1966	0	0	0	0	0
5	CAT	1967	0	0	0	0	0
5	CAT	1968	0	0	0	0	0
5	CAT	1969	0	0	0	0	0
5	CAT	1970	0	0	0	0	0
5	CAT	1971	0	0	0	0	0
5	CAT	1972	0	0	0	0	0
5	CAT	1973	0	0	0	0	0
5	CAT	1974	0	0	0	0	0
5	CAT	1975	0	0	0	0	0
5	CAT	1976	0	0	0	0	0
5	CAT	1977	722	21	23,861	9,072	416,606
5	CAT	1978	912	26	30,148	9,208	407,535
5	CAT	1979	1,126	33	37,235	9,351	398,327
5	CAT	1980	896	27	29,636	9,496	388,976
5	CAT	1981	1,052	32	34,791	9,647	379,480

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
5	CAT	1982	868	27	28,705	9,803	369,833
5	CAT	1983	897	28	29,677	9,966	360,029
5	CAT	1984	1,528	49	50,539	10,134	350,064
5	CAT	1985	2,286	74	75,588	10,311	339,930
5	CAT	1986	2,594	85	85,782	10,493	329,619
5	CAT	1987	2,218	74	73,335	10,685	319,126
5	CAT	1988	2,746	93	90,795	10,886	308,441
5	CAT	1989	4,225	146	139,696	11,094	297,555
5	CAT	1990	3,432	121	113,479	11,316	286,461
5	CAT	1991	2,625	95	86,810	11,549	275,145
5	CAT	1992	2,521	92	83,360	11,794	263,596
5	CAT	1993	2,859	107	94,527	12,055	251,802
5	CAT	1994	3,225	124	106,639	12,333	239,747
5	CAT	1995	4,919	193	162,647	12,630	227,414
5	CAT	1996	4,110	165	135,905	12,949	214,785
5	CAT	1997	5,211	215	172,307	13,293	201,835
5	CAT	1998	3,942	167	130,341	13,668	188,542
5	CAT	1999	2,503	109	82,757	14,078	174,874
5	CAT	2000	3,205	143	105,973	14,532	160,796
5	CAT	2001	3,389	156	112,055	15,038	146,264
5	CAT	2002	5,576	267	184,385	15,613	131,225
5	CAT	2003	8,652	432	286,095	16,276	115,613
5	CAT	2004	6,018	314	199,011	17,061	99,337
5	CAT	2005	5,148	284	170,238	18,022	82,275
5	CAT	2006	11,130	646	368,019	19,260	64,253
5	CAT	2007	12,478	787	412,595	21,005	44,993
5	CAT	2008	11,800	848	390,201	23,988	23,988
5	DSL	1965	2	0	26	7,701	516,129
5	DSL	1966	0	0	4	7,800	508,428
5	DSL	1967	0	0	6	7,902	500,628
5	DSL	1968	1	0	13	8,005	492,726
5	DSL	1969	1	0	14	8,111	484,721
5	DSL	1970	2	0	20	8,221	476,610
5	DSL	1971	2	0	30	8,332	468,389
5	DSL	1972	2	0	31	8,448	460,057
5	DSL	1973	1	0	13	8,565	451,609
5	DSL	1974	6	0	76	8,687	443,043
5	DSL	1975	5	0	66	8,811	434,356
5	DSL	1976	5	0	68	8,939	425,546
5	DSL	1977	7	0	93	9,072	416,606
5	DSL	1978	9	0	116	9,208	407,535
5	DSL	1979	9	0	115	9,351	398,327
5	DSL	1980	15	0	185	9,496	388,976
5	DSL	1981	3	0	38	9,647	379,480
5	DSL	1982	9	0	118	9,803	369,833
5	DSL	1983	14	0	180	9,966	360,029
5	DSL	1984	31	1	392	10,134	350,064
5	DSL	1985	41	1	514	10,311	339,930
5	DSL	1986	64	2	807	10,493	329,619
5	DSL	1987	72	2	912	10,685	319,126
5	DSL	1988	90	3	1,131	10,886	308,441

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
5	DSL	1989	71	2	888	11,094	297,555
5	DSL	1990	97	3	1,225	11,316	286,461
5	DSL	1991	29	1	363	11,549	275,145
5	DSL	1992	16	1	203	11,794	263,596
5	DSL	1993	23	1	287	12,055	251,802
5	DSL	1994	27	1	346	12,333	239,747
5	DSL	1995	51	2	640	12,630	227,414
5	DSL	1996	33	1	414	12,949	214,785
5	DSL	1997	56	2	701	13,293	201,835
5	DSL	1998	21	1	270	13,668	188,542
5	DSL	1999	79	3	990	14,078	174,874
5	DSL	2000	78	3	979	14,532	160,796
5	DSL	2001	197	9	2,474	15,038	146,264
5	DSL	2002	962	45	12,106	15,613	131,225
5	DSL	2003	1,984	97	24,950	16,276	115,613
5	DSL	2004	6,266	321	78,812	17,061	99,337
5	DSL	2005	7,014	379	88,229	18,022	82,275
5	DSL	2006	2,598	151	32,679	19,260	64,253
5	DSL	2007	2,908	183	36,582	21,005	44,993
5	DSL	2008	2,750	198	34,597	23,988	23,988
5	ELEC	1965	0	0	0	0	0
5	ELEC	1966	0	0	0	0	0
5	ELEC	1967	0	0	0	0	0
5	ELEC	1968	0	0	0	0	0
5	ELEC	1969	0	0	0	0	0
5	ELEC	1970	0	0	0	0	0
5	ELEC	1971	0	0	0	0	0
5	ELEC	1972	0	0	0	0	0
5	ELEC	1973	0	0	0	0	0
5	ELEC	1974	0	0	0	0	0
5	ELEC	1975	0	0	0	0	0
5	ELEC	1976	0	0	0	0	0
5	ELEC	1977	0	0	0	0	0
5	ELEC	1978	0	0	0	0	0
5	ELEC	1979	0	0	0	0	0
5	ELEC	1980	0	0	0	0	0
5	ELEC	1981	0	0	0	0	0
5	ELEC	1982	0	0	0	0	0
5	ELEC	1983	0	0	0	0	0
5	ELEC	1984	0	0	0	0	0
5	ELEC	1985	0	0	0	0	0
5	ELEC	1986	0	0	0	0	0
5	ELEC	1987	0	0	0	0	0
5	ELEC	1988	0	0	0	0	0
5	ELEC	1989	0	0	0	0	0
5	ELEC	1990	0	0	0	0	0
5	ELEC	1991	0	0	0	0	0
5	ELEC	1992	0	0	0	0	0
5	ELEC	1993	0	0	0	0	0
5	ELEC	1994	0	0	0	0	0
5	ELEC	1995	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
5	ELEC	1996	0	0	0	0	0
5	ELEC	1997	0	0	0	0	0
5	ELEC	1998	0	0	0	0	0
5	ELEC	1999	0	0	0	0	0
5	ELEC	2000	0	0	0	0	0
5	ELEC	2001	0	0	0	0	0
5	ELEC	2002	0	0	0	0	0
5	ELEC	2003	0	0	0	0	0
5	ELEC	2004	0	0	0	0	0
5	ELEC	2005	0	0	0	0	0
5	ELEC	2006	0	0	0	0	0
5	ELEC	2007	0	0	0	0	0
5	ELEC	2008	0	0	0	0	0
6	NCAT	1965	0	0	0	7,033	495,338
6	NCAT	1966	9	0	310	7,136	488,306
6	NCAT	1967	19	0	616	7,243	481,169
6	NCAT	1968	25	1	820	7,352	473,927
6	NCAT	1969	28	1	940	7,462	466,575
6	NCAT	1970	30	1	1,008	7,577	459,113
6	NCAT	1971	24	1	802	7,694	451,536
6	NCAT	1972	61	1	2,006	7,814	443,842
6	NCAT	1973	150	4	4,973	7,939	436,028
6	NCAT	1974	56	1	1,846	8,066	428,089
6	NCAT	1975	51	1	1,691	8,196	420,023
6	NCAT	1976	35	1	1,146	8,331	411,827
6	NCAT	1977	0	0	0	0	0
6	NCAT	1978	0	0	0	0	0
6	NCAT	1979	0	0	0	0	0
6	NCAT	1980	0	0	0	0	0
6	NCAT	1981	0	0	0	0	0
6	NCAT	1982	0	0	0	0	0
6	NCAT	1983	0	0	0	0	0
6	NCAT	1984	0	0	0	0	0
6	NCAT	1985	0	0	0	0	0
6	NCAT	1986	0	0	0	0	0
6	NCAT	1987	0	0	0	0	0
6	NCAT	1988	0	0	0	0	0
6	NCAT	1989	0	0	0	0	0
6	NCAT	1990	0	0	0	0	0
6	NCAT	1991	0	0	0	0	0
6	NCAT	1992	0	0	0	0	0
6	NCAT	1993	0	0	0	0	0
6	NCAT	1994	0	0	0	0	0
6	NCAT	1995	0	0	0	0	0
6	NCAT	1996	0	0	0	0	0
6	NCAT	1997	0	0	0	0	0
6	NCAT	1998	0	0	0	0	0
6	NCAT	1999	0	0	0	0	0
6	NCAT	2000	0	0	0	0	0
6	NCAT	2001	0	0	0	0	0
6	NCAT	2002	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
6	NCAT	2003	0	0	0	0	0
6	NCAT	2004	0	0	0	0	0
6	NCAT	2005	0	0	0	0	0
6	NCAT	2006	0	0	0	0	0
6	NCAT	2007	0	0	0	0	0
6	NCAT	2008	0	0	0	0	0
6	CAT	1965	0	0	0	0	0
6	CAT	1966	0	0	0	0	0
6	CAT	1967	0	0	0	0	0
6	CAT	1968	0	0	0	0	0
6	CAT	1969	0	0	0	0	0
6	CAT	1970	0	0	0	0	0
6	CAT	1971	0	0	0	0	0
6	CAT	1972	0	0	0	0	0
6	CAT	1973	0	0	0	0	0
6	CAT	1974	0	0	0	0	0
6	CAT	1975	0	0	0	0	0
6	CAT	1976	0	0	0	0	0
6	CAT	1977	118	3	3,896	8,471	403,496
6	CAT	1978	124	3	4,099	8,614	395,025
6	CAT	1979	210	6	6,929	8,761	386,411
6	CAT	1980	101	3	3,335	8,915	377,650
6	CAT	1981	116	3	3,848	9,073	368,735
6	CAT	1982	88	3	2,909	9,237	359,663
6	CAT	1983	92	3	3,032	9,408	350,426
6	CAT	1984	177	5	5,855	9,584	341,018
6	CAT	1985	302	9	10,000	9,769	331,434
6	CAT	1986	353	11	11,684	9,960	321,665
6	CAT	1987	373	12	12,346	10,161	311,705
6	CAT	1988	490	16	16,205	10,371	301,544
6	CAT	1989	680	22	22,470	10,591	291,173
6	CAT	1990	632	21	20,889	10,822	280,582
6	CAT	1991	429	15	14,170	11,067	269,759
6	CAT	1992	394	14	13,013	11,325	258,692
6	CAT	1993	589	21	19,478	11,598	247,367
6	CAT	1994	858	32	28,384	11,890	235,769
6	CAT	1995	938	36	31,016	12,202	223,880
6	CAT	1996	840	33	27,782	12,536	211,678
6	CAT	1997	987	39	32,626	12,897	199,142
6	CAT	1998	857	35	28,328	13,290	186,244
6	CAT	1999	2,232	94	73,813	13,720	172,954
6	CAT	2000	2,319	101	76,675	14,196	159,234
6	CAT	2001	680	31	22,490	14,727	145,038
6	CAT	2002	1,197	57	39,576	15,330	130,312
6	CAT	2003	1,324	66	43,790	16,026	114,982
6	CAT	2004	1,699	88	56,178	16,849	98,956
6	CAT	2005	1,098	60	36,314	17,856	82,106
6	CAT	2006	1,889	110	62,457	19,154	64,251
6	CAT	2007	2,040	129	67,467	20,984	45,097
6	CAT	2008	1,855	135	61,338	24,113	24,113
6	DSL	1965	0	0	0	7,033	495,338

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VTM/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
6	DSL	1966	0	0	0	7,136	488,306
6	DSL	1967	0	0	0	7,243	481,169
6	DSL	1968	0	0	0	7,352	473,927
6	DSL	1969	0	0	0	7,462	466,575
6	DSL	1970	0	0	0	7,577	459,113
6	DSL	1971	0	0	0	7,694	451,536
6	DSL	1972	0	0	0	7,814	443,842
6	DSL	1973	1	0	13	7,939	436,028
6	DSL	1974	0	0	5	8,066	428,089
6	DSL	1975	1	0	7	8,196	420,023
6	DSL	1976	3	0	39	8,331	411,827
6	DSL	1977	2	0	23	8,471	403,496
6	DSL	1978	5	0	62	8,614	395,025
6	DSL	1979	6	0	75	8,761	386,411
6	DSL	1980	10	0	128	8,915	377,650
6	DSL	1981	1	0	16	9,073	368,735
6	DSL	1982	87	3	1,094	9,237	359,663
6	DSL	1983	45	1	561	9,408	350,426
6	DSL	1984	87	3	1,092	9,584	341,018
6	DSL	1985	152	5	1,906	9,769	331,434
6	DSL	1986	301	9	3,792	9,960	321,665
6	DSL	1987	193	6	2,430	10,161	311,705
6	DSL	1988	255	8	3,206	10,371	301,544
6	DSL	1989	538	18	6,773	10,591	291,173
6	DSL	1990	677	23	8,520	10,822	280,582
6	DSL	1991	363	12	4,560	11,067	269,759
6	DSL	1992	487	17	6,121	11,325	258,692
6	DSL	1993	496	18	6,238	11,598	247,367
6	DSL	1994	658	24	8,273	11,890	235,769
6	DSL	1995	966	36	12,155	12,202	223,880
6	DSL	1996	751	29	9,451	12,536	211,678
6	DSL	1997	932	36	11,721	12,897	199,142
6	DSL	1998	563	23	7,087	13,290	186,244
6	DSL	1999	1,223	51	15,379	13,720	172,954
6	DSL	2000	1,108	48	13,941	14,196	159,234
6	DSL	2001	603	27	7,581	14,727	145,038
6	DSL	2002	937	43	11,784	15,330	130,312
6	DSL	2003	1,194	58	15,025	16,026	114,982
6	DSL	2004	1,595	81	20,067	16,849	98,956
6	DSL	2005	1,941	104	24,410	17,856	82,106
6	DSL	2006	1,380	80	17,363	19,154	64,251
6	DSL	2007	1,479	94	18,600	20,984	45,097
6	DSL	2008	1,344	98	16,910	24,113	24,113
6	ELEC	1965	0	0	0	0	0
6	ELEC	1966	0	0	0	0	0
6	ELEC	1967	0	0	0	0	0
6	ELEC	1968	0	0	0	0	0
6	ELEC	1969	0	0	0	0	0
6	ELEC	1970	0	0	0	0	0
6	ELEC	1971	0	0	0	0	0
6	ELEC	1972	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
6	ELEC	1973	0	0	0	0	0
6	ELEC	1974	0	0	0	0	0
6	ELEC	1975	0	0	0	0	0
6	ELEC	1976	0	0	0	0	0
6	ELEC	1977	0	0	0	0	0
6	ELEC	1978	0	0	0	0	0
6	ELEC	1979	0	0	0	0	0
6	ELEC	1980	0	0	0	0	0
6	ELEC	1981	0	0	0	0	0
6	ELEC	1982	0	0	0	0	0
6	ELEC	1983	0	0	0	0	0
6	ELEC	1984	0	0	0	0	0
6	ELEC	1985	0	0	0	0	0
6	ELEC	1986	0	0	0	0	0
6	ELEC	1987	0	0	0	0	0
6	ELEC	1988	0	0	0	0	0
6	ELEC	1989	0	0	0	0	0
6	ELEC	1990	0	0	0	0	0
6	ELEC	1991	0	0	0	0	0
6	ELEC	1992	0	0	0	0	0
6	ELEC	1993	0	0	0	0	0
6	ELEC	1994	0	0	0	0	0
6	ELEC	1995	0	0	0	0	0
6	ELEC	1996	0	0	0	0	0
6	ELEC	1997	0	0	0	0	0
6	ELEC	1998	0	0	0	0	0
6	ELEC	1999	0	0	0	0	0
6	ELEC	2000	0	0	0	0	0
6	ELEC	2001	0	0	0	0	0
6	ELEC	2002	0	0	0	0	0
6	ELEC	2003	0	0	0	0	0
6	ELEC	2004	0	0	0	0	0
6	ELEC	2005	0	0	0	0	0
6	ELEC	2006	0	0	0	0	0
6	ELEC	2007	0	0	0	0	0
6	ELEC	2008	0	0	0	0	0
7	NCAT	1965	223	2	10,167	2,755	436,397
7	NCAT	1966	139	1	6,362	2,754	433,642
7	NCAT	1967	155	1	7,067	2,754	430,888
7	NCAT	1968	163	1	7,436	2,754	428,134
7	NCAT	1969	198	2	9,036	2,755	425,379
7	NCAT	1970	225	2	10,289	2,754	422,624
7	NCAT	1971	213	2	9,707	2,754	419,870
7	NCAT	1972	274	2	12,496	2,755	417,116
7	NCAT	1973	302	3	13,811	2,754	414,361
7	NCAT	1974	206	2	9,421	2,755	411,607
7	NCAT	1975	196	2	8,952	2,929	408,852
7	NCAT	1976	194	2	8,854	3,147	405,924
7	NCAT	1977	0	0	0	0	0
7	NCAT	1978	0	0	0	0	0
7	NCAT	1979	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
7	NCAT	1980	0	0	0	0	0
7	NCAT	1981	0	0	0	0	0
7	NCAT	1982	0	0	0	0	0
7	NCAT	1983	0	0	0	0	0
7	NCAT	1984	0	0	0	0	0
7	NCAT	1985	0	0	0	0	0
7	NCAT	1986	0	0	0	0	0
7	NCAT	1987	0	0	0	0	0
7	NCAT	1988	0	0	0	0	0
7	NCAT	1989	0	0	0	0	0
7	NCAT	1990	0	0	0	0	0
7	NCAT	1991	0	0	0	0	0
7	NCAT	1992	0	0	0	0	0
7	NCAT	1993	0	0	0	0	0
7	NCAT	1994	0	0	0	0	0
7	NCAT	1995	0	0	0	0	0
7	NCAT	1996	0	0	0	0	0
7	NCAT	1997	0	0	0	0	0
7	NCAT	1998	0	0	0	0	0
7	NCAT	1999	0	0	0	0	0
7	NCAT	2000	0	0	0	0	0
7	NCAT	2001	0	0	0	0	0
7	NCAT	2002	0	0	0	0	0
7	NCAT	2003	0	0	0	0	0
7	NCAT	2004	0	0	0	0	0
7	NCAT	2005	0	0	0	0	0
7	NCAT	2006	0	0	0	0	0
7	NCAT	2007	0	0	0	0	0
7	NCAT	2008	0	0	0	0	0
7	CAT	1965	0	0	0	0	0
7	CAT	1966	0	0	0	0	0
7	CAT	1967	0	0	0	0	0
7	CAT	1968	0	0	0	0	0
7	CAT	1969	0	0	0	0	0
7	CAT	1970	0	0	0	0	0
7	CAT	1971	0	0	0	0	0
7	CAT	1972	0	0	0	0	0
7	CAT	1973	0	0	0	0	0
7	CAT	1974	0	0	0	0	0
7	CAT	1975	0	0	0	0	0
7	CAT	1976	0	0	0	0	0
7	CAT	1977	192	2	8,754	3,404	402,777
7	CAT	1978	189	2	8,611	3,698	399,373
7	CAT	1979	273	3	12,454	4,031	395,675
7	CAT	1980	164	2	7,471	4,398	391,645
7	CAT	1981	215	3	9,802	4,803	387,246
7	CAT	1982	132	2	6,012	5,242	382,443
7	CAT	1983	97	2	4,419	5,714	377,201
7	CAT	1984	268	5	12,232	6,218	371,487
7	CAT	1985	376	8	17,191	6,752	365,269
7	CAT	1986	317	7	14,471	7,316	358,517

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
7	CAT	1987	371	9	16,948	7,910	351,200
7	CAT	1988	347	9	15,861	8,532	343,290
7	CAT	1989	462	13	21,102	9,181	334,758
7	CAT	1990	507	15	23,161	9,855	325,577
7	CAT	1991	374	12	17,085	10,556	315,721
7	CAT	1992	302	10	13,795	11,277	305,165
7	CAT	1993	282	10	12,895	12,023	293,888
7	CAT	1994	278	11	12,678	12,790	281,865
7	CAT	1995	516	22	23,554	13,577	269,075
7	CAT	1996	414	18	18,888	14,384	255,498
7	CAT	1997	620	29	28,329	15,208	241,114
7	CAT	1998	444	22	20,261	16,052	225,905
7	CAT	1999	975	50	44,506	16,909	209,853
7	CAT	2000	1,021	56	46,610	17,782	192,945
7	CAT	2001	1,028	59	46,966	18,670	175,163
7	CAT	2002	702	42	32,078	19,570	156,493
7	CAT	2003	873	56	39,868	20,483	136,923
7	CAT	2004	864	57	39,477	21,406	116,440
7	CAT	2005	590	41	26,954	22,338	95,034
7	CAT	2006	1,236	88	56,460	23,280	72,696
7	CAT	2007	1,297	96	59,235	24,230	49,416
7	CAT	2008	1,212	93	55,372	25,186	25,186
7	DSL	1965	6	0	173	3,522	538,506
7	DSL	1966	4	0	120	3,522	534,984
7	DSL	1967	8	0	211	3,522	531,462
7	DSL	1968	7	0	196	3,522	527,940
7	DSL	1969	10	0	293	3,522	524,417
7	DSL	1970	25	0	693	3,522	520,895
7	DSL	1971	26	0	726	3,522	517,373
7	DSL	1972	39	0	1,090	3,522	513,851
7	DSL	1973	38	0	1,067	3,522	510,329
7	DSL	1974	51	1	1,440	3,522	506,807
7	DSL	1975	47	1	1,325	3,522	503,284
7	DSL	1976	53	1	1,483	3,522	499,762
7	DSL	1977	68	1	1,909	3,522	496,240
7	DSL	1978	124	2	3,473	4,365	492,718
7	DSL	1979	252	4	7,056	5,099	488,353
7	DSL	1980	238	4	6,674	5,751	483,254
7	DSL	1981	249	5	6,984	6,345	477,503
7	DSL	1982	182	4	5,109	6,904	471,158
7	DSL	1983	177	4	4,961	7,448	464,254
7	DSL	1984	439	11	12,321	7,994	456,805
7	DSL	1985	586	16	16,424	8,557	448,812
7	DSL	1986	646	18	18,109	9,152	440,255
7	DSL	1987	969	29	27,165	9,789	431,103
7	DSL	1988	1,072	35	30,059	10,474	421,314
7	DSL	1989	1,237	43	34,692	11,219	410,840
7	DSL	1990	1,769	65	49,609	12,023	399,621
7	DSL	1991	1,422	56	39,864	12,891	387,598
7	DSL	1992	1,060	45	29,733	13,820	374,707
7	DSL	1993	1,222	56	34,263	14,808	360,887

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
7	DSL	1994	1,495	73	41,916	15,851	346,079
7	DSL	1995	2,752	143	77,158	16,942	330,227
7	DSL	1996	2,218	122	62,201	18,067	313,285
7	DSL	1997	2,542	149	71,288	19,221	295,218
7	DSL	1998	2,723	171	76,341	20,384	275,997
7	DSL	1999	4,354	286	122,085	21,542	255,613
7	DSL	2000	5,078	351	142,374	22,678	234,071
7	DSL	2001	4,238	306	118,828	23,766	211,393
7	DSL	2002	3,133	238	87,847	24,787	187,626
7	DSL	2003	3,289	260	92,223	25,715	162,839
7	DSL	2004	4,269	347	119,715	26,520	137,125
7	DSL	2005	5,082	420	142,495	27,175	110,605
7	DSL	2006	4,758	401	133,409	27,644	83,430
7	DSL	2007	4,988	424	139,856	27,896	55,786
7	DSL	2008	4,662	396	130,736	27,890	27,890
7	ELEC	1965	0	0	0	0	0
7	ELEC	1966	0	0	0	0	0
7	ELEC	1967	0	0	0	0	0
7	ELEC	1968	0	0	0	0	0
7	ELEC	1969	0	0	0	0	0
7	ELEC	1970	0	0	0	0	0
7	ELEC	1971	0	0	0	0	0
7	ELEC	1972	0	0	0	0	0
7	ELEC	1973	0	0	0	0	0
7	ELEC	1974	0	0	0	0	0
7	ELEC	1975	0	0	0	0	0
7	ELEC	1976	0	0	0	0	0
7	ELEC	1977	0	0	0	0	0
7	ELEC	1978	0	0	0	0	0
7	ELEC	1979	0	0	0	0	0
7	ELEC	1980	0	0	0	0	0
7	ELEC	1981	0	0	0	0	0
7	ELEC	1982	0	0	0	0	0
7	ELEC	1983	0	0	0	0	0
7	ELEC	1984	0	0	0	0	0
7	ELEC	1985	0	0	0	0	0
7	ELEC	1986	0	0	0	0	0
7	ELEC	1987	0	0	0	0	0
7	ELEC	1988	0	0	0	0	0
7	ELEC	1989	0	0	0	0	0
7	ELEC	1990	0	0	0	0	0
7	ELEC	1991	0	0	0	0	0
7	ELEC	1992	0	0	0	0	0
7	ELEC	1993	0	0	0	0	0
7	ELEC	1994	0	0	0	0	0
7	ELEC	1995	0	0	0	0	0
7	ELEC	1996	0	0	0	0	0
7	ELEC	1997	0	0	0	0	0
7	ELEC	1998	0	0	0	0	0
7	ELEC	1999	0	0	0	0	0
7	ELEC	2000	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
7	ELEC	2001	0	0	0	0	0
7	ELEC	2002	0	0	0	0	0
7	ELEC	2003	0	0	0	0	0
7	ELEC	2004	0	0	0	0	0
7	ELEC	2005	0	0	0	0	0
7	ELEC	2006	0	0	0	0	0
7	ELEC	2007	0	0	0	0	0
7	ELEC	2008	0	0	0	0	0
8	NCAT	1965	87	1	3,972	4,312	1,035,214
8	NCAT	1966	90	1	4,098	4,312	1,030,902
8	NCAT	1967	115	2	5,235	4,312	1,026,590
8	NCAT	1968	114	2	5,223	4,312	1,022,278
8	NCAT	1969	52	1	2,383	4,312	1,017,966
8	NCAT	1970	55	1	2,529	4,312	1,013,654
8	NCAT	1971	43	1	1,941	4,312	1,009,342
8	NCAT	1972	35	0	1,581	4,312	1,005,029
8	NCAT	1973	26	0	1,199	4,312	1,000,717
8	NCAT	1974	14	0	647	4,312	996,405
8	NCAT	1975	17	0	785	4,312	992,093
8	NCAT	1976	19	0	850	4,312	987,781
8	NCAT	1977	0	0	0	0	0
8	NCAT	1978	0	0	0	0	0
8	NCAT	1979	0	0	0	0	0
8	NCAT	1980	0	0	0	0	0
8	NCAT	1981	0	0	0	0	0
8	NCAT	1982	0	0	0	0	0
8	NCAT	1983	0	0	0	0	0
8	NCAT	1984	0	0	0	0	0
8	NCAT	1985	0	0	0	0	0
8	NCAT	1986	0	0	0	0	0
8	NCAT	1987	0	0	0	0	0
8	NCAT	1988	0	0	0	0	0
8	NCAT	1989	0	0	0	0	0
8	NCAT	1990	0	0	0	0	0
8	NCAT	1991	0	0	0	0	0
8	NCAT	1992	0	0	0	0	0
8	NCAT	1993	0	0	0	0	0
8	NCAT	1994	0	0	0	0	0
8	NCAT	1995	0	0	0	0	0
8	NCAT	1996	0	0	0	0	0
8	NCAT	1997	0	0	0	0	0
8	NCAT	1998	0	0	0	0	0
8	NCAT	1999	0	0	0	0	0
8	NCAT	2000	0	0	0	0	0
8	NCAT	2001	0	0	0	0	0
8	NCAT	2002	0	0	0	0	0
8	NCAT	2003	0	0	0	0	0
8	NCAT	2004	0	0	0	0	0
8	NCAT	2005	0	0	0	0	0
8	NCAT	2006	0	0	0	0	0
8	NCAT	2007	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
8	NCAT	2008	0	0	0	0	0
8	CAT	1965	0	0	0	0	0
8	CAT	1966	0	0	0	0	0
8	CAT	1967	0	0	0	0	0
8	CAT	1968	0	0	0	0	0
8	CAT	1969	0	0	0	0	0
8	CAT	1970	0	0	0	0	0
8	CAT	1971	0	0	0	0	0
8	CAT	1972	0	0	0	0	0
8	CAT	1973	0	0	0	0	0
8	CAT	1974	0	0	0	0	0
8	CAT	1975	0	0	0	0	0
8	CAT	1976	0	0	0	0	0
8	CAT	1977	22	0	993	5,389	983,469
8	CAT	1978	14	0	641	6,404	978,081
8	CAT	1979	21	0	944	7,373	971,676
8	CAT	1980	17	0	772	8,313	964,303
8	CAT	1981	13	0	581	9,236	955,990
8	CAT	1982	13	0	578	10,156	946,754
8	CAT	1983	6	0	277	11,092	936,598
8	CAT	1984	23	1	1,046	12,054	925,506
8	CAT	1985	56	2	2,573	13,062	913,452
8	CAT	1986	98	4	4,487	14,127	900,390
8	CAT	1987	118	5	5,395	15,263	886,264
8	CAT	1988	135	7	6,175	16,489	871,001
8	CAT	1989	109	6	4,962	17,818	854,512
8	CAT	1990	83	5	3,800	19,264	836,694
8	CAT	1991	102	7	4,650	20,843	817,430
8	CAT	1992	91	6	4,146	22,570	796,587
8	CAT	1993	86	6	3,927	24,458	774,017
8	CAT	1994	83	7	3,795	26,526	749,559
8	CAT	1995	123	11	5,632	28,784	723,033
8	CAT	1996	95	9	4,331	31,249	694,249
8	CAT	1997	155	16	7,083	33,936	663,000
8	CAT	1998	238	27	10,891	36,862	629,064
8	CAT	1999	234	28	10,667	40,037	592,201
8	CAT	2000	260	34	11,860	43,480	552,164
8	CAT	2001	365	53	16,661	47,205	508,684
8	CAT	2002	153	24	7,006	51,223	461,480
8	CAT	2003	116	20	5,297	55,557	410,256
8	CAT	2004	171	32	7,831	60,215	354,699
8	CAT	2005	177	36	8,103	65,214	294,484
8	CAT	2006	28	6	1,289	70,569	229,271
8	CAT	2007	28	7	1,284	76,295	158,702
8	CAT	2008	30	8	1,359	82,407	82,407
8	DSL	1965	14	0	70	4,411	1,633,423
8	DSL	1966	13	0	65	4,411	1,629,012
8	DSL	1967	29	0	148	4,411	1,624,601
8	DSL	1968	41	1	207	4,411	1,620,190
8	DSL	1969	66	1	332	4,411	1,615,779
8	DSL	1970	70	1	353	4,411	1,611,368

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VTM/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
8	DSL	1971	59	1	301	4,411	1,606,958
8	DSL	1972	101	1	511	4,411	1,602,547
8	DSL	1973	92	1	466	4,411	1,598,136
8	DSL	1974	100	1	504	4,411	1,593,725
8	DSL	1975	105	2	531	5,300	1,589,314
8	DSL	1976	100	2	506	6,459	1,584,014
8	DSL	1977	123	3	621	7,845	1,577,555
8	DSL	1978	187	5	947	9,412	1,569,710
8	DSL	1979	255	9	1,289	11,111	1,560,298
8	DSL	1980	236	9	1,196	12,894	1,549,186
8	DSL	1981	288	13	1,459	14,722	1,536,292
8	DSL	1982	220	11	1,111	16,562	1,521,570
8	DSL	1983	204	11	1,031	18,396	1,505,008
8	DSL	1984	502	31	2,542	20,213	1,486,612
8	DSL	1985	614	41	3,106	22,018	1,466,399
8	DSL	1986	640	47	3,239	23,831	1,444,381
8	DSL	1987	772	61	3,907	25,683	1,420,550
8	DSL	1988	926	78	4,685	27,615	1,394,867
8	DSL	1989	1,305	119	6,605	29,683	1,367,252
8	DSL	1990	1,354	132	6,853	31,947	1,337,568
8	DSL	1991	1,053	111	5,329	34,473	1,305,621
8	DSL	1992	951	109	4,810	37,330	1,271,148
8	DSL	1993	1,337	166	6,768	40,581	1,233,819
8	DSL	1994	1,780	241	9,010	44,283	1,193,238
8	DSL	1995	2,308	342	11,677	48,482	1,148,955
8	DSL	1996	2,134	347	10,800	53,200	1,100,473
8	DSL	1997	1,912	342	9,678	58,434	1,047,273
8	DSL	1998	1,947	382	9,852	64,150	988,838
8	DSL	1999	2,361	507	11,947	70,271	924,688
8	DSL	2000	2,380	558	12,042	76,668	854,418
8	DSL	2001	1,693	431	8,566	83,154	777,750
8	DSL	2002	1,101	301	5,574	89,473	694,596
8	DSL	2003	1,353	394	6,848	95,286	605,124
8	DSL	2004	1,120	343	5,668	100,167	509,838
8	DSL	2005	1,545	490	7,818	103,583	409,670
8	DSL	2006	1,672	537	8,460	104,885	306,088
8	DSL	2007	1,692	534	8,563	103,298	201,202
8	DSL	2008	1,791	535	9,064	97,904	97,904
8	ELEC	1965	0	0	0	0	0
8	ELEC	1966	0	0	0	0	0
8	ELEC	1967	0	0	0	0	0
8	ELEC	1968	0	0	0	0	0
8	ELEC	1969	0	0	0	0	0
8	ELEC	1970	0	0	0	0	0
8	ELEC	1971	0	0	0	0	0
8	ELEC	1972	0	0	0	0	0
8	ELEC	1973	0	0	0	0	0
8	ELEC	1974	0	0	0	0	0
8	ELEC	1975	0	0	0	0	0
8	ELEC	1976	0	0	0	0	0
8	ELEC	1977	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
8	ELEC	1978	0	0	0	0	0
8	ELEC	1979	0	0	0	0	0
8	ELEC	1980	0	0	0	0	0
8	ELEC	1981	0	0	0	0	0
8	ELEC	1982	0	0	0	0	0
8	ELEC	1983	0	0	0	0	0
8	ELEC	1984	0	0	0	0	0
8	ELEC	1985	0	0	0	0	0
8	ELEC	1986	0	0	0	0	0
8	ELEC	1987	0	0	0	0	0
8	ELEC	1988	0	0	0	0	0
8	ELEC	1989	0	0	0	0	0
8	ELEC	1990	0	0	0	0	0
8	ELEC	1991	0	0	0	0	0
8	ELEC	1992	0	0	0	0	0
8	ELEC	1993	0	0	0	0	0
8	ELEC	1994	0	0	0	0	0
8	ELEC	1995	0	0	0	0	0
8	ELEC	1996	0	0	0	0	0
8	ELEC	1997	0	0	0	0	0
8	ELEC	1998	0	0	0	0	0
8	ELEC	1999	0	0	0	0	0
8	ELEC	2000	0	0	0	0	0
8	ELEC	2001	0	0	0	0	0
8	ELEC	2002	0	0	0	0	0
8	ELEC	2003	0	0	0	0	0
8	ELEC	2004	0	0	0	0	0
8	ELEC	2005	0	0	0	0	0
8	ELEC	2006	0	0	0	0	0
8	ELEC	2007	0	0	0	0	0
8	ELEC	2008	0	0	0	0	0
9	NCAT	1965	13	0	609	2,267	359,184
9	NCAT	1966	10	0	448	2,267	356,916
9	NCAT	1967	13	0	598	2,267	354,649
9	NCAT	1968	9	0	431	2,267	352,382
9	NCAT	1969	15	0	674	2,267	350,114
9	NCAT	1970	12	0	557	2,267	347,847
9	NCAT	1971	23	0	1,054	2,267	345,579
9	NCAT	1972	12	0	564	2,267	343,312
9	NCAT	1973	12	0	532	2,267	341,045
9	NCAT	1974	12	0	568	2,267	338,777
9	NCAT	1975	13	0	614	2,411	336,510
9	NCAT	1976	8	0	382	2,590	334,099
9	NCAT	1977	0	0	0	0	0
9	NCAT	1978	0	0	0	0	0
9	NCAT	1979	0	0	0	0	0
9	NCAT	1980	0	0	0	0	0
9	NCAT	1981	0	0	0	0	0
9	NCAT	1982	0	0	0	0	0
9	NCAT	1983	0	0	0	0	0
9	NCAT	1984	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
9	NCAT	1985	0	0	0	0	0
9	NCAT	1986	0	0	0	0	0
9	NCAT	1987	0	0	0	0	0
9	NCAT	1988	0	0	0	0	0
9	NCAT	1989	0	0	0	0	0
9	NCAT	1990	0	0	0	0	0
9	NCAT	1991	0	0	0	0	0
9	NCAT	1992	0	0	0	0	0
9	NCAT	1993	0	0	0	0	0
9	NCAT	1994	0	0	0	0	0
9	NCAT	1995	0	0	0	0	0
9	NCAT	1996	0	0	0	0	0
9	NCAT	1997	0	0	0	0	0
9	NCAT	1998	0	0	0	0	0
9	NCAT	1999	0	0	0	0	0
9	NCAT	2000	0	0	0	0	0
9	NCAT	2001	0	0	0	0	0
9	NCAT	2002	0	0	0	0	0
9	NCAT	2003	0	0	0	0	0
9	NCAT	2004	0	0	0	0	0
9	NCAT	2005	0	0	0	0	0
9	NCAT	2006	0	0	0	0	0
9	NCAT	2007	0	0	0	0	0
9	NCAT	2008	0	0	0	0	0
9	CAT	1965	0	0	0	0	0
9	CAT	1966	0	0	0	0	0
9	CAT	1967	0	0	0	0	0
9	CAT	1968	0	0	0	0	0
9	CAT	1969	0	0	0	0	0
9	CAT	1970	0	0	0	0	0
9	CAT	1971	0	0	0	0	0
9	CAT	1972	0	0	0	0	0
9	CAT	1973	0	0	0	0	0
9	CAT	1974	0	0	0	0	0
9	CAT	1975	0	0	0	0	0
9	CAT	1976	0	0	0	0	0
9	CAT	1977	12	0	557	2,802	331,509
9	CAT	1978	15	0	706	3,044	328,708
9	CAT	1979	20	0	930	3,318	325,664
9	CAT	1980	16	0	751	3,620	322,346
9	CAT	1981	13	0	584	3,953	318,726
9	CAT	1982	14	0	657	4,315	314,773
9	CAT	1983	13	0	615	4,702	310,458
9	CAT	1984	13	0	576	5,118	305,756
9	CAT	1985	22	0	1,027	5,557	300,638
9	CAT	1986	25	0	1,140	6,022	295,081
9	CAT	1987	18	0	800	6,511	289,059
9	CAT	1988	20	0	910	7,023	282,548
9	CAT	1989	27	1	1,250	7,557	275,526
9	CAT	1990	54	1	2,447	8,111	267,969
9	CAT	1991	38	1	1,758	8,688	259,858

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
9	CAT	1992	40	1	1,847	9,281	251,169
9	CAT	1993	47	1	2,168	9,896	241,888
9	CAT	1994	62	2	2,809	10,527	231,992
9	CAT	1995	74	3	3,392	11,175	221,465
9	CAT	1996	59	2	2,681	11,839	210,290
9	CAT	1997	93	4	4,260	12,518	198,451
9	CAT	1998	122	5	5,573	13,211	185,934
9	CAT	1999	363	16	16,561	13,917	172,723
9	CAT	2000	339	15	15,468	14,636	158,806
9	CAT	2001	440	21	20,099	15,366	144,170
9	CAT	2002	317	16	14,478	16,107	128,804
9	CAT	2003	482	25	22,005	16,859	112,696
9	CAT	2004	607	33	27,707	17,619	95,838
9	CAT	2005	656	37	29,980	18,386	78,219
9	CAT	2006	157	9	7,185	19,161	59,833
9	CAT	2007	162	10	7,394	19,943	40,672
9	CAT	2008	164	10	7,475	20,730	20,730
9	DSL	1965	1	0	38	2,899	443,224
9	DSL	1966	3	0	74	2,899	440,325
9	DSL	1967	5	0	141	2,899	437,426
9	DSL	1968	2	0	55	2,899	434,527
9	DSL	1969	1	0	37	2,899	431,628
9	DSL	1970	2	0	47	2,899	428,729
9	DSL	1971	3	0	72	2,899	425,830
9	DSL	1972	2	0	60	2,899	422,931
9	DSL	1973	6	0	174	2,899	420,032
9	DSL	1974	9	0	240	2,899	417,133
9	DSL	1975	8	0	217	2,899	414,234
9	DSL	1976	13	0	366	2,899	411,334
9	DSL	1977	11	0	304	2,899	408,435
9	DSL	1978	14	0	389	3,593	405,536
9	DSL	1979	24	0	682	4,196	401,943
9	DSL	1980	23	0	659	4,733	397,747
9	DSL	1981	47	1	1,329	5,222	393,014
9	DSL	1982	33	1	935	5,682	387,791
9	DSL	1983	25	0	689	6,130	382,109
9	DSL	1984	48	1	1,347	6,579	375,979
9	DSL	1985	38	1	1,066	7,043	369,399
9	DSL	1986	29	1	821	7,533	362,356
9	DSL	1987	61	2	1,716	8,057	354,824
9	DSL	1988	57	2	1,589	8,621	346,766
9	DSL	1989	71	2	1,982	9,234	338,146
9	DSL	1990	64	2	1,784	9,896	328,912
9	DSL	1991	81	3	2,260	10,610	319,016
9	DSL	1992	61	2	1,707	11,375	308,406
9	DSL	1993	46	2	1,278	12,188	297,032
9	DSL	1994	38	2	1,078	13,047	284,844
9	DSL	1995	67	3	1,883	13,944	271,797
9	DSL	1996	90	4	2,535	14,871	257,852
9	DSL	1997	122	6	3,428	15,820	242,982
9	DSL	1998	168	9	4,705	16,777	227,162

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
9	DSL	1999	131	7	3,686	17,731	210,385
9	DSL	2000	301	17	8,428	18,665	192,654
9	DSL	2001	222	13	6,219	19,561	173,989
9	DSL	2002	124	8	3,487	20,401	154,428
9	DSL	2003	103	7	2,892	21,165	134,027
9	DSL	2004	65	4	1,816	21,827	112,862
9	DSL	2005	79	5	2,201	22,366	91,035
9	DSL	2006	605	42	16,977	22,753	68,668
9	DSL	2007	623	43	17,458	22,961	45,916
9	DSL	2008	629	44	17,650	22,955	22,955
9	ELEC	1965	0	0	0	0	0
9	ELEC	1966	0	0	0	0	0
9	ELEC	1967	0	0	0	0	0
9	ELEC	1968	0	0	0	0	0
9	ELEC	1969	0	0	0	0	0
9	ELEC	1970	0	0	0	0	0
9	ELEC	1971	0	0	0	0	0
9	ELEC	1972	0	0	0	0	0
9	ELEC	1973	0	0	0	0	0
9	ELEC	1974	0	0	0	0	0
9	ELEC	1975	0	0	0	0	0
9	ELEC	1976	0	0	0	0	0
9	ELEC	1977	0	0	0	0	0
9	ELEC	1978	0	0	0	0	0
9	ELEC	1979	0	0	0	0	0
9	ELEC	1980	0	0	0	0	0
9	ELEC	1981	0	0	0	0	0
9	ELEC	1982	0	0	0	0	0
9	ELEC	1983	0	0	0	0	0
9	ELEC	1984	0	0	0	0	0
9	ELEC	1985	0	0	0	0	0
9	ELEC	1986	0	0	0	0	0
9	ELEC	1987	0	0	0	0	0
9	ELEC	1988	0	0	0	0	0
9	ELEC	1989	0	0	0	0	0
9	ELEC	1990	0	0	0	0	0
9	ELEC	1991	0	0	0	0	0
9	ELEC	1992	0	0	0	0	0
9	ELEC	1993	0	0	0	0	0
9	ELEC	1994	0	0	0	0	0
9	ELEC	1995	0	0	0	0	0
9	ELEC	1996	0	0	0	0	0
9	ELEC	1997	0	0	0	0	0
9	ELEC	1998	0	0	0	0	0
9	ELEC	1999	0	0	0	0	0
9	ELEC	2000	0	0	0	0	0
9	ELEC	2001	0	0	0	0	0
9	ELEC	2002	0	0	0	0	0
9	ELEC	2003	0	0	0	0	0
9	ELEC	2004	0	0	0	0	0
9	ELEC	2005	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
9	ELEC	2006	0	0	0	0	0
9	ELEC	2007	0	0	0	0	0
9	ELEC	2008	0	0	0	0	0
10	NCAT	1965	6	1	23	35,789	1,574,733
10	NCAT	1966	0	0	0	35,789	1,538,944
10	NCAT	1967	2	0	8	35,789	1,503,154
10	NCAT	1968	4	0	16	35,789	1,467,365
10	NCAT	1969	3	0	12	35,789	1,431,576
10	NCAT	1970	6	1	24	35,790	1,395,786
10	NCAT	1971	4	0	16	35,789	1,359,997
10	NCAT	1972	2	0	8	35,789	1,324,208
10	NCAT	1973	5	1	20	35,789	1,288,418
10	NCAT	1974	3	0	12	35,789	1,252,629
10	NCAT	1975	14	2	57	35,789	1,216,839
10	NCAT	1976	1	0	4	35,789	1,181,050
10	NCAT	1977	0	0	0	0	0
10	NCAT	1978	0	0	0	0	0
10	NCAT	1979	0	0	0	0	0
10	NCAT	1980	0	0	0	0	0
10	NCAT	1981	0	0	0	0	0
10	NCAT	1982	0	0	0	0	0
10	NCAT	1983	0	0	0	0	0
10	NCAT	1984	0	0	0	0	0
10	NCAT	1985	0	0	0	0	0
10	NCAT	1986	0	0	0	0	0
10	NCAT	1987	0	0	0	0	0
10	NCAT	1988	0	0	0	0	0
10	NCAT	1989	0	0	0	0	0
10	NCAT	1990	0	0	0	0	0
10	NCAT	1991	0	0	0	0	0
10	NCAT	1992	0	0	0	0	0
10	NCAT	1993	0	0	0	0	0
10	NCAT	1994	0	0	0	0	0
10	NCAT	1995	0	0	0	0	0
10	NCAT	1996	0	0	0	0	0
10	NCAT	1997	0	0	0	0	0
10	NCAT	1998	0	0	0	0	0
10	NCAT	1999	0	0	0	0	0
10	NCAT	2000	0	0	0	0	0
10	NCAT	2001	0	0	0	0	0
10	NCAT	2002	0	0	0	0	0
10	NCAT	2003	0	0	0	0	0
10	NCAT	2004	0	0	0	0	0
10	NCAT	2005	0	0	0	0	0
10	NCAT	2006	0	0	0	0	0
10	NCAT	2007	0	0	0	0	0
10	NCAT	2008	0	0	0	0	0
10	CAT	1965	0	0	0	0	0
10	CAT	1966	0	0	0	0	0
10	CAT	1967	0	0	0	0	0
10	CAT	1968	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
10	CAT	1969	0	0	0	0	0
10	CAT	1970	0	0	0	0	0
10	CAT	1971	0	0	0	0	0
10	CAT	1972	0	0	0	0	0
10	CAT	1973	0	0	0	0	0
10	CAT	1974	0	0	0	0	0
10	CAT	1975	0	0	0	0	0
10	CAT	1976	0	0	0	0	0
10	CAT	1977	0	0	0	35,789	1,145,261
10	CAT	1978	2	0	7	35,789	1,109,471
10	CAT	1979	1	0	6	35,789	1,073,682
10	CAT	1980	19	2	78	35,789	1,037,892
10	CAT	1981	58	6	230	35,789	1,002,103
10	CAT	1982	2	0	8	35,789	966,314
10	CAT	1983	5	1	19	35,789	930,524
10	CAT	1984	5	1	20	35,789	894,735
10	CAT	1985	25	3	99	35,789	858,945
10	CAT	1986	23	2	90	35,789	823,156
10	CAT	1987	12	1	50	35,789	787,367
10	CAT	1988	16	2	66	35,789	751,577
10	CAT	1989	67	7	268	35,789	715,788
10	CAT	1990	37	4	148	35,789	679,998
10	CAT	1991	16	2	65	35,789	644,209
10	CAT	1992	19	2	75	35,789	608,420
10	CAT	1993	27	3	107	35,789	572,630
10	CAT	1994	41	5	163	35,789	536,841
10	CAT	1995	41	5	166	35,789	501,051
10	CAT	1996	25	3	102	35,789	465,262
10	CAT	1997	54	6	215	35,789	429,473
10	CAT	1998	54	6	216	35,789	393,683
10	CAT	1999	55	6	221	35,789	357,894
10	CAT	2000	156	17	625	35,789	322,105
10	CAT	2001	60	7	241	35,789	286,315
10	CAT	2002	95	11	378	35,789	250,526
10	CAT	2003	118	13	471	35,789	214,736
10	CAT	2004	102	11	406	35,789	178,947
10	CAT	2005	105	12	422	35,789	143,158
10	CAT	2006	90	10	360	35,789	107,368
10	CAT	2007	85	9	338	35,789	71,579
10	CAT	2008	87	10	346	35,789	35,789
10	DSL	1965	17	2	69	35,789	1,574,733
10	DSL	1966	4	0	16	35,789	1,538,944
10	DSL	1967	29	3	114	35,789	1,503,154
10	DSL	1968	178	19	712	35,789	1,467,365
10	DSL	1969	26	3	106	35,789	1,431,576
10	DSL	1970	40	4	160	35,790	1,395,786
10	DSL	1971	110	12	439	35,789	1,359,997
10	DSL	1972	10	1	40	35,789	1,324,208
10	DSL	1973	173	19	692	35,789	1,288,418
10	DSL	1974	103	11	412	35,789	1,252,629
10	DSL	1975	69	8	277	35,789	1,216,839

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
10	DSL	1976	29	3	115	35,789	1,181,050
10	DSL	1977	1	0	4	35,789	1,145,261
10	DSL	1978	1	0	4	35,789	1,109,471
10	DSL	1979	3	0	12	35,789	1,073,682
10	DSL	1980	175	19	700	35,789	1,037,892
10	DSL	1981	180	20	720	35,789	1,002,103
10	DSL	1982	45	5	180	35,789	966,314
10	DSL	1983	78	9	313	35,789	930,524
10	DSL	1984	212	23	849	35,789	894,735
10	DSL	1985	16	2	63	35,789	858,945
10	DSL	1986	37	4	150	35,789	823,156
10	DSL	1987	47	5	188	35,789	787,367
10	DSL	1988	316	34	1,263	35,789	751,577
10	DSL	1989	255	28	1,019	35,789	715,788
10	DSL	1990	161	18	645	35,789	679,998
10	DSL	1991	74	8	297	35,789	644,209
10	DSL	1992	466	51	1,864	35,789	608,420
10	DSL	1993	44	5	177	35,789	572,630
10	DSL	1994	7	1	28	35,789	536,841
10	DSL	1995	123	13	493	35,789	501,051
10	DSL	1996	32	4	129	35,789	465,262
10	DSL	1997	274	30	1,095	35,789	429,473
10	DSL	1998	93	10	371	35,789	393,683
10	DSL	1999	77	8	307	35,789	357,894
10	DSL	2000	92	10	369	35,789	322,105
10	DSL	2001	186	20	745	35,789	286,315
10	DSL	2002	123	13	491	35,789	250,526
10	DSL	2003	83	9	330	35,789	214,736
10	DSL	2004	100	11	400	35,789	178,947
10	DSL	2005	30	3	119	35,789	143,158
10	DSL	2006	53	6	211	35,789	107,368
10	DSL	2007	50	6	199	35,789	71,579
10	DSL	2008	51	6	204	35,789	35,789
10	ELEC	1965	0	0	0	0	0
10	ELEC	1966	0	0	0	0	0
10	ELEC	1967	0	0	0	0	0
10	ELEC	1968	0	0	0	0	0
10	ELEC	1969	0	0	0	0	0
10	ELEC	1970	0	0	0	0	0
10	ELEC	1971	0	0	0	0	0
10	ELEC	1972	0	0	0	0	0
10	ELEC	1973	0	0	0	0	0
10	ELEC	1974	0	0	0	0	0
10	ELEC	1975	0	0	0	0	0
10	ELEC	1976	0	0	0	0	0
10	ELEC	1977	0	0	0	0	0
10	ELEC	1978	0	0	0	0	0
10	ELEC	1979	0	0	0	0	0
10	ELEC	1980	0	0	0	0	0
10	ELEC	1981	0	0	0	0	0
10	ELEC	1982	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
10	ELEC	1983	0	0	0	0	0
10	ELEC	1984	0	0	0	0	0
10	ELEC	1985	0	0	0	0	0
10	ELEC	1986	0	0	0	0	0
10	ELEC	1987	0	0	0	0	0
10	ELEC	1988	0	0	0	0	0
10	ELEC	1989	0	0	0	0	0
10	ELEC	1990	0	0	0	0	0
10	ELEC	1991	0	0	0	0	0
10	ELEC	1992	0	0	0	0	0
10	ELEC	1993	0	0	0	0	0
10	ELEC	1994	0	0	0	0	0
10	ELEC	1995	0	0	0	0	0
10	ELEC	1996	0	0	0	0	0
10	ELEC	1997	0	0	0	0	0
10	ELEC	1998	0	0	0	0	0
10	ELEC	1999	0	0	0	0	0
10	ELEC	2000	0	0	0	0	0
10	ELEC	2001	0	0	0	0	0
10	ELEC	2002	0	0	0	0	0
10	ELEC	2003	0	0	0	0	0
10	ELEC	2004	0	0	0	0	0
10	ELEC	2005	0	0	0	0	0
10	ELEC	2006	0	0	0	0	0
10	ELEC	2007	0	0	0	0	0
10	ELEC	2008	0	0	0	0	0
11	NCAT	1965	190	0	380	232	57,814
11	NCAT	1966	126	0	251	250	57,581
11	NCAT	1967	174	0	348	266	57,332
11	NCAT	1968	201	0	401	284	57,066
11	NCAT	1969	300	0	600	303	56,783
11	NCAT	1970	400	0	801	322	56,480
11	NCAT	1971	358	0	716	345	56,158
11	NCAT	1972	341	0	683	368	55,813
11	NCAT	1973	375	0	749	394	55,445
11	NCAT	1974	445	1	890	420	55,051
11	NCAT	1975	461	1	922	448	54,632
11	NCAT	1976	400	1	800	478	54,184
11	NCAT	1977	414	1	827	510	53,706
11	NCAT	1978	657	1	1,314	544	53,196
11	NCAT	1979	844	1	1,687	583	52,653
11	NCAT	1980	953	2	1,905	622	52,070
11	NCAT	1981	1,110	2	2,219	663	51,448
11	NCAT	1982	1,591	3	3,182	708	50,785
11	NCAT	1983	1,614	3	3,227	756	50,076
11	NCAT	1984	1,537	4	3,073	807	49,321
11	NCAT	1985	2,351	6	4,702	861	48,513
11	NCAT	1986	2,340	6	4,679	920	47,652
11	NCAT	1987	1,982	6	3,963	983	46,732
11	NCAT	1988	1,407	4	2,814	1,048	45,750
11	NCAT	1989	1,621	5	3,242	1,120	44,701

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
11	NCAT	1990	1,793	6	3,585	1,195	43,581
11	NCAT	1991	1,935	7	3,871	1,277	42,386
11	NCAT	1992	1,928	7	3,855	1,362	41,109
11	NCAT	1993	2,331	10	4,662	1,454	39,747
11	NCAT	1994	2,446	11	4,892	1,553	38,293
11	NCAT	1995	2,123	10	4,246	1,658	36,740
11	NCAT	1996	2,754	14	5,508	1,770	35,082
11	NCAT	1997	2,911	16	5,821	1,888	33,313
11	NCAT	1998	3,321	19	6,641	2,017	31,424
11	NCAT	1999	4,497	28	8,993	2,153	29,408
11	NCAT	2000	6,908	45	13,814	2,298	27,254
11	NCAT	2001	8,519	60	17,037	2,454	24,956
11	NCAT	2002	22,296	169	44,587	2,619	22,502
11	NCAT	2003	25,084	203	50,164	2,797	19,883
11	NCAT	2004	18,259	158	36,513	2,986	17,086
11	NCAT	2005	23,170	214	46,334	3,187	14,101
11	NCAT	2006	23,561	233	47,118	3,403	10,914
11	NCAT	2007	24,047	254	48,089	3,633	7,511
11	NCAT	2008	9,276	105	18,549	3,878	3,878
11	CAT	1965	0	0	0	0	0
11	CAT	1966	0	0	0	0	0
11	CAT	1967	0	0	0	0	0
11	CAT	1968	0	0	0	0	0
11	CAT	1969	0	0	0	0	0
11	CAT	1970	0	0	0	0	0
11	CAT	1971	0	0	0	0	0
11	CAT	1972	0	0	0	0	0
11	CAT	1973	0	0	0	0	0
11	CAT	1974	0	0	0	0	0
11	CAT	1975	0	0	0	0	0
11	CAT	1976	0	0	0	0	0
11	CAT	1977	0	0	0	0	0
11	CAT	1978	0	0	0	0	0
11	CAT	1979	0	0	0	0	0
11	CAT	1980	0	0	0	0	0
11	CAT	1981	0	0	0	0	0
11	CAT	1982	0	0	0	0	0
11	CAT	1983	0	0	0	0	0
11	CAT	1984	0	0	0	0	0
11	CAT	1985	0	0	0	0	0
11	CAT	1986	0	0	0	0	0
11	CAT	1987	0	0	0	0	0
11	CAT	1988	0	0	0	0	0
11	CAT	1989	0	0	0	0	0
11	CAT	1990	0	0	0	0	0
11	CAT	1991	0	0	0	0	0
11	CAT	1992	0	0	0	0	0
11	CAT	1993	0	0	0	0	0
11	CAT	1994	37	0	74	1,553	38,293
11	CAT	1995	708	3	1,415	1,658	36,740
11	CAT	1996	777	4	1,554	1,770	35,082

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
11	CAT	1997	821	4	1,642	1,888	33,313
11	CAT	1998	937	5	1,873	2,017	31,424
11	CAT	1999	1,268	8	2,536	2,153	29,408
11	CAT	2000	1,948	13	3,896	2,298	27,254
11	CAT	2001	2,403	17	4,805	2,454	24,956
11	CAT	2002	6,289	48	12,576	2,619	22,502
11	CAT	2003	7,075	57	14,149	2,797	19,883
11	CAT	2004	4,008	35	8,015	2,986	17,086
11	CAT	2005	5,086	47	10,171	3,187	14,101
11	CAT	2006	5,172	51	10,343	3,403	10,914
11	CAT	2007	5,279	56	10,556	3,633	7,511
11	CAT	2008	19,004	214	38,004	3,878	3,878
11	DSL	1965	0	0	0	0	0
11	DSL	1966	0	0	0	0	0
11	DSL	1967	0	0	0	0	0
11	DSL	1968	0	0	0	0	0
11	DSL	1969	0	0	0	0	0
11	DSL	1970	0	0	0	0	0
11	DSL	1971	0	0	0	0	0
11	DSL	1972	0	0	0	0	0
11	DSL	1973	0	0	0	0	0
11	DSL	1974	0	0	0	0	0
11	DSL	1975	0	0	0	0	0
11	DSL	1976	0	0	0	0	0
11	DSL	1977	0	0	0	0	0
11	DSL	1978	0	0	0	0	0
11	DSL	1979	0	0	0	0	0
11	DSL	1980	0	0	0	0	0
11	DSL	1981	0	0	0	0	0
11	DSL	1982	0	0	0	0	0
11	DSL	1983	0	0	0	0	0
11	DSL	1984	0	0	0	0	0
11	DSL	1985	0	0	0	0	0
11	DSL	1986	0	0	0	0	0
11	DSL	1987	0	0	0	0	0
11	DSL	1988	0	0	0	0	0
11	DSL	1989	0	0	0	0	0
11	DSL	1990	0	0	0	0	0
11	DSL	1991	0	0	0	0	0
11	DSL	1992	0	0	0	0	0
11	DSL	1993	0	0	0	0	0
11	DSL	1994	0	0	0	0	0
11	DSL	1995	0	0	0	0	0
11	DSL	1996	0	0	0	0	0
11	DSL	1997	0	0	0	0	0
11	DSL	1998	0	0	0	0	0
11	DSL	1999	0	0	0	0	0
11	DSL	2000	0	0	0	0	0
11	DSL	2001	0	0	0	0	0
11	DSL	2002	0	0	0	0	0
11	DSL	2003	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
11	DSL	2004	0	0	0	0	0
11	DSL	2005	0	0	0	0	0
11	DSL	2006	0	0	0	0	0
11	DSL	2007	0	0	0	0	0
11	DSL	2008	0	0	0	0	0
11	ELEC	1965	0	0	0	0	0
11	ELEC	1966	0	0	0	0	0
11	ELEC	1967	0	0	0	0	0
11	ELEC	1968	0	0	0	0	0
11	ELEC	1969	0	0	0	0	0
11	ELEC	1970	0	0	0	0	0
11	ELEC	1971	0	0	0	0	0
11	ELEC	1972	0	0	0	0	0
11	ELEC	1973	0	0	0	0	0
11	ELEC	1974	0	0	0	0	0
11	ELEC	1975	0	0	0	0	0
11	ELEC	1976	0	0	0	0	0
11	ELEC	1977	0	0	0	0	0
11	ELEC	1978	0	0	0	0	0
11	ELEC	1979	0	0	0	0	0
11	ELEC	1980	0	0	0	0	0
11	ELEC	1981	0	0	0	0	0
11	ELEC	1982	0	0	0	0	0
11	ELEC	1983	0	0	0	0	0
11	ELEC	1984	0	0	0	0	0
11	ELEC	1985	0	0	0	0	0
11	ELEC	1986	0	0	0	0	0
11	ELEC	1987	0	0	0	0	0
11	ELEC	1988	0	0	0	0	0
11	ELEC	1989	0	0	0	0	0
11	ELEC	1990	0	0	0	0	0
11	ELEC	1991	0	0	0	0	0
11	ELEC	1992	0	0	0	0	0
11	ELEC	1993	0	0	0	0	0
11	ELEC	1994	0	0	0	0	0
11	ELEC	1995	0	0	0	0	0
11	ELEC	1996	0	0	0	0	0
11	ELEC	1997	0	0	0	0	0
11	ELEC	1998	0	0	0	0	0
11	ELEC	1999	0	0	0	0	0
11	ELEC	2000	0	0	0	0	0
11	ELEC	2001	0	0	0	0	0
11	ELEC	2002	0	0	0	0	0
11	ELEC	2003	0	0	0	0	0
11	ELEC	2004	0	0	0	0	0
11	ELEC	2005	0	0	0	0	0
11	ELEC	2006	0	0	0	0	0
11	ELEC	2007	0	0	0	0	0
11	ELEC	2008	0	0	0	0	0
12	NCAT	1965	5	0	19	12,216	537,500
12	NCAT	1966	4	0	16	12,216	525,284

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
12	NCAT	1967	17	1	67	12,216	513,068
12	NCAT	1968	18	1	73	12,216	500,853
12	NCAT	1969	13	1	53	12,216	488,637
12	NCAT	1970	11	0	43	12,216	476,421
12	NCAT	1971	12	0	47	12,216	464,205
12	NCAT	1972	8	0	31	12,216	451,989
12	NCAT	1973	22	1	88	12,216	439,773
12	NCAT	1974	27	1	107	12,216	427,557
12	NCAT	1975	7	0	29	12,216	415,341
12	NCAT	1976	5	0	19	12,216	403,125
12	NCAT	1977	0	0	0	0	0
12	NCAT	1978	0	0	0	0	0
12	NCAT	1979	0	0	0	0	0
12	NCAT	1980	0	0	0	0	0
12	NCAT	1981	0	0	0	0	0
12	NCAT	1982	0	0	0	0	0
12	NCAT	1983	0	0	0	0	0
12	NCAT	1984	0	0	0	0	0
12	NCAT	1985	0	0	0	0	0
12	NCAT	1986	0	0	0	0	0
12	NCAT	1987	0	0	0	0	0
12	NCAT	1988	0	0	0	0	0
12	NCAT	1989	0	0	0	0	0
12	NCAT	1990	0	0	0	0	0
12	NCAT	1991	0	0	0	0	0
12	NCAT	1992	0	0	0	0	0
12	NCAT	1993	0	0	0	0	0
12	NCAT	1994	0	0	0	0	0
12	NCAT	1995	0	0	0	0	0
12	NCAT	1996	0	0	0	0	0
12	NCAT	1997	0	0	0	0	0
12	NCAT	1998	0	0	0	0	0
12	NCAT	1999	0	0	0	0	0
12	NCAT	2000	0	0	0	0	0
12	NCAT	2001	0	0	0	0	0
12	NCAT	2002	0	0	0	0	0
12	NCAT	2003	0	0	0	0	0
12	NCAT	2004	0	0	0	0	0
12	NCAT	2005	0	0	0	0	0
12	NCAT	2006	0	0	0	0	0
12	NCAT	2007	0	0	0	0	0
12	NCAT	2008	0	0	0	0	0
12	CAT	1965	0	0	0	0	0
12	CAT	1966	0	0	0	0	0
12	CAT	1967	0	0	0	0	0
12	CAT	1968	0	0	0	0	0
12	CAT	1969	0	0	0	0	0
12	CAT	1970	0	0	0	0	0
12	CAT	1971	0	0	0	0	0
12	CAT	1972	0	0	0	0	0
12	CAT	1973	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
12	CAT	1974	0	0	0	0	0
12	CAT	1975	0	0	0	0	0
12	CAT	1976	0	0	0	0	0
12	CAT	1977	26	1	106	12,216	390,909
12	CAT	1978	71	3	284	12,216	378,693
12	CAT	1979	36	1	144	12,216	366,478
12	CAT	1980	15	1	62	12,216	354,262
12	CAT	1981	14	1	57	12,216	342,046
12	CAT	1982	14	1	56	12,216	329,830
12	CAT	1983	4	0	17	12,216	317,614
12	CAT	1984	27	1	110	12,216	305,398
12	CAT	1985	29	1	115	12,216	293,182
12	CAT	1986	28	1	112	12,216	280,966
12	CAT	1987	47	2	189	12,216	268,750
12	CAT	1988	45	2	179	12,216	256,534
12	CAT	1989	34	1	136	12,216	244,318
12	CAT	1990	32	1	129	12,216	232,102
12	CAT	1991	33	1	134	12,216	219,886
12	CAT	1992	33	1	132	12,216	207,671
12	CAT	1993	14	1	58	12,216	195,455
12	CAT	1994	26	1	103	12,216	183,239
12	CAT	1995	35	1	139	12,216	171,023
12	CAT	1996	18	1	73	12,216	158,807
12	CAT	1997	9	0	38	12,216	146,591
12	CAT	1998	18	1	74	12,216	134,375
12	CAT	1999	42	2	169	12,216	122,159
12	CAT	2000	38	1	152	12,216	109,943
12	CAT	2001	87	3	350	12,216	97,727
12	CAT	2002	49	2	195	12,216	85,511
12	CAT	2003	51	2	203	12,216	73,296
12	CAT	2004	90	3	360	12,216	61,080
12	CAT	2005	43	2	170	12,216	48,864
12	CAT	2006	34	1	135	12,216	36,648
12	CAT	2007	31	1	124	12,216	24,432
12	CAT	2008	29	1	114	12,216	12,216
12	DSL	1965	4	0	16	12,216	537,500
12	DSL	1966	1	0	4	12,216	525,284
12	DSL	1967	19	1	74	12,216	513,068
12	DSL	1968	20	1	80	12,216	500,853
12	DSL	1969	24	1	95	12,216	488,637
12	DSL	1970	16	1	63	12,216	476,421
12	DSL	1971	10	0	40	12,216	464,205
12	DSL	1972	27	1	110	12,216	451,989
12	DSL	1973	23	1	93	12,216	439,773
12	DSL	1974	42	2	168	12,216	427,557
12	DSL	1975	11	0	43	12,216	415,341
12	DSL	1976	16	1	63	12,216	403,125
12	DSL	1977	34	1	135	12,216	390,909
12	DSL	1978	70	3	278	12,216	378,693
12	DSL	1979	25	1	99	12,216	366,478
12	DSL	1980	16	1	64	12,216	354,262

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
12	DSL	1981	15	1	59	12,216	342,046
12	DSL	1982	17	1	68	12,216	329,830
12	DSL	1983	11	0	45	12,216	317,614
12	DSL	1984	39	1	155	12,216	305,398
12	DSL	1985	66	2	265	12,216	293,182
12	DSL	1986	342	13	1,369	12,216	280,966
12	DSL	1987	223	8	891	12,216	268,750
12	DSL	1988	250	9	1,002	12,216	256,534
12	DSL	1989	239	9	955	12,216	244,318
12	DSL	1990	470	18	1,882	12,216	232,102
12	DSL	1991	205	8	821	12,216	219,886
12	DSL	1992	146	5	584	12,216	207,671
12	DSL	1993	201	7	803	12,216	195,455
12	DSL	1994	221	8	885	12,216	183,239
12	DSL	1995	456	17	1,822	12,216	171,023
12	DSL	1996	316	12	1,265	12,216	158,807
12	DSL	1997	301	11	1,203	12,216	146,591
12	DSL	1998	410	15	1,641	12,216	134,375
12	DSL	1999	487	18	1,947	12,216	122,159
12	DSL	2000	468	17	1,873	12,216	109,943
12	DSL	2001	305	11	1,219	12,216	97,727
12	DSL	2002	491	19	1,963	12,216	85,511
12	DSL	2003	313	12	1,253	12,216	73,296
12	DSL	2004	397	15	1,590	12,216	61,080
12	DSL	2005	216	8	865	12,216	48,864
12	DSL	2006	207	8	827	12,216	36,648
12	DSL	2007	192	7	769	12,216	24,432
12	DSL	2008	177	7	707	12,216	12,216
12	ELEC	1965	0	0	0	0	0
12	ELEC	1966	0	0	0	0	0
12	ELEC	1967	0	0	0	0	0
12	ELEC	1968	0	0	0	0	0
12	ELEC	1969	0	0	0	0	0
12	ELEC	1970	0	0	0	0	0
12	ELEC	1971	0	0	0	0	0
12	ELEC	1972	0	0	0	0	0
12	ELEC	1973	0	0	0	0	0
12	ELEC	1974	0	0	0	0	0
12	ELEC	1975	0	0	0	0	0
12	ELEC	1976	0	0	0	0	0
12	ELEC	1977	0	0	0	0	0
12	ELEC	1978	0	0	0	0	0
12	ELEC	1979	0	0	0	0	0
12	ELEC	1980	0	0	0	0	0
12	ELEC	1981	0	0	0	0	0
12	ELEC	1982	0	0	0	0	0
12	ELEC	1983	0	0	0	0	0
12	ELEC	1984	0	0	0	0	0
12	ELEC	1985	0	0	0	0	0
12	ELEC	1986	0	0	0	0	0
12	ELEC	1987	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
12	ELEC	1988	0	0	0	0	0
12	ELEC	1989	0	0	0	0	0
12	ELEC	1990	0	0	0	0	0
12	ELEC	1991	0	0	0	0	0
12	ELEC	1992	0	0	0	0	0
12	ELEC	1993	0	0	0	0	0
12	ELEC	1994	0	0	0	0	0
12	ELEC	1995	0	0	0	0	0
12	ELEC	1996	0	0	0	0	0
12	ELEC	1997	0	0	0	0	0
12	ELEC	1998	0	0	0	0	0
12	ELEC	1999	0	0	0	0	0
12	ELEC	2000	0	0	0	0	0
12	ELEC	2001	0	0	0	0	0
12	ELEC	2002	0	0	0	0	0
12	ELEC	2003	0	0	0	0	0
12	ELEC	2004	0	0	0	0	0
12	ELEC	2005	0	0	0	0	0
12	ELEC	2006	0	0	0	0	0
12	ELEC	2007	0	0	0	0	0
12	ELEC	2008	0	0	0	0	0
13	NCAT	1965	105	1	10	2,824	150,326
13	NCAT	1966	44	0	4	2,839	147,502
13	NCAT	1967	80	1	8	2,854	144,663
13	NCAT	1968	132	1	13	2,869	141,809
13	NCAT	1969	259	2	26	2,885	138,940
13	NCAT	1970	257	2	26	2,901	136,055
13	NCAT	1971	424	4	42	2,917	133,154
13	NCAT	1972	725	7	72	2,934	130,237
13	NCAT	1973	1,095	10	110	2,951	127,303
13	NCAT	1974	552	5	55	2,969	124,352
13	NCAT	1975	708	6	71	2,987	121,383
13	NCAT	1976	1,194	11	119	3,006	118,396
13	NCAT	1977	0	0	0	0	0
13	NCAT	1978	0	0	0	0	0
13	NCAT	1979	0	0	0	0	0
13	NCAT	1980	0	0	0	0	0
13	NCAT	1981	0	0	0	0	0
13	NCAT	1982	0	0	0	0	0
13	NCAT	1983	0	0	0	0	0
13	NCAT	1984	0	0	0	0	0
13	NCAT	1985	0	0	0	0	0
13	NCAT	1986	0	0	0	0	0
13	NCAT	1987	0	0	0	0	0
13	NCAT	1988	0	0	0	0	0
13	NCAT	1989	0	0	0	0	0
13	NCAT	1990	0	0	0	0	0
13	NCAT	1991	0	0	0	0	0
13	NCAT	1992	0	0	0	0	0
13	NCAT	1993	0	0	0	0	0
13	NCAT	1994	0	0	0	0	0

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
13	NCAT	1995	0	0	0	0	0
13	NCAT	1996	0	0	0	0	0
13	NCAT	1997	0	0	0	0	0
13	NCAT	1998	0	0	0	0	0
13	NCAT	1999	0	0	0	0	0
13	NCAT	2000	0	0	0	0	0
13	NCAT	2001	0	0	0	0	0
13	NCAT	2002	0	0	0	0	0
13	NCAT	2003	0	0	0	0	0
13	NCAT	2004	0	0	0	0	0
13	NCAT	2005	0	0	0	0	0
13	NCAT	2006	0	0	0	0	0
13	NCAT	2007	0	0	0	0	0
13	NCAT	2008	0	0	0	0	0
13	CAT	1965	0	0	0	0	0
13	CAT	1966	0	0	0	0	0
13	CAT	1967	0	0	0	0	0
13	CAT	1968	0	0	0	0	0
13	CAT	1969	0	0	0	0	0
13	CAT	1970	0	0	0	0	0
13	CAT	1971	0	0	0	0	0
13	CAT	1972	0	0	0	0	0
13	CAT	1973	0	0	0	0	0
13	CAT	1974	0	0	0	0	0
13	CAT	1975	0	0	0	0	0
13	CAT	1976	0	0	0	0	0
13	CAT	1977	1,904	18	190	3,026	115,390
13	CAT	1978	2,409	22	241	3,046	112,364
13	CAT	1979	1,997	19	200	3,067	109,318
13	CAT	1980	642	6	64	3,088	106,251
13	CAT	1981	1,131	11	113	3,110	103,163
13	CAT	1982	1,278	12	128	3,133	100,053
13	CAT	1983	1,662	16	166	3,157	96,920
13	CAT	1984	2,637	26	264	3,182	93,763
13	CAT	1985	2,041	20	204	3,208	90,581
13	CAT	1986	1,717	17	172	3,235	87,373
13	CAT	1987	1,945	19	195	3,263	84,138
13	CAT	1988	2,154	22	216	3,292	80,875
13	CAT	1989	2,404	24	240	3,323	77,583
13	CAT	1990	2,196	23	220	3,356	74,260
13	CAT	1991	1,822	19	182	3,390	70,904
13	CAT	1992	1,746	18	175	3,426	67,514
13	CAT	1993	1,388	15	139	3,464	64,088
13	CAT	1994	1,765	19	177	3,505	60,624
13	CAT	1995	1,782	19	178	3,549	57,119
13	CAT	1996	1,613	18	161	3,596	53,570
13	CAT	1997	1,780	20	178	3,646	49,974
13	CAT	1998	1,564	18	156	3,701	46,328
13	CAT	1999	2,326	27	233	3,762	42,627
13	CAT	2000	2,351	28	235	3,828	38,865
13	CAT	2001	1,600	19	160	3,903	35,037

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VTM/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
13	CAT	2002	1,887	23	189	3,987	31,134
13	CAT	2003	2,550	32	255	4,085	27,147
13	CAT	2004	3,333	43	333	4,200	23,062
13	CAT	2005	3,266	43	327	4,341	18,862
13	CAT	2006	4,323	60	432	4,523	14,521
13	CAT	2007	4,864	71	487	4,780	9,998
13	CAT	2008	5,186	83	519	5,218	5,218
13	DSL	1965	6	0	1	2,824	150,326
13	DSL	1966	2	0	0	2,839	147,502
13	DSL	1967	1	0	0	2,854	144,663
13	DSL	1968	4	0	0	2,869	141,809
13	DSL	1969	6	0	1	2,885	138,940
13	DSL	1970	3	0	0	2,901	136,055
13	DSL	1971	5	0	1	2,917	133,154
13	DSL	1972	9	0	1	2,934	130,237
13	DSL	1973	9	0	1	2,951	127,303
13	DSL	1974	9	0	1	2,969	124,352
13	DSL	1975	7	0	1	2,987	121,383
13	DSL	1976	6	0	1	3,006	118,396
13	DSL	1977	10	0	1	3,026	115,390
13	DSL	1978	12	0	1	3,046	112,364
13	DSL	1979	13	0	1	3,067	109,318
13	DSL	1980	16	0	2	3,088	106,251
13	DSL	1981	21	0	2	3,110	103,163
13	DSL	1982	87	1	9	3,133	100,053
13	DSL	1983	101	1	10	3,157	96,920
13	DSL	1984	46	0	5	3,182	93,763
13	DSL	1985	31	0	3	3,208	90,581
13	DSL	1986	49	0	5	3,235	87,373
13	DSL	1987	36	0	4	3,263	84,138
13	DSL	1988	58	1	6	3,292	80,875
13	DSL	1989	78	1	8	3,323	77,583
13	DSL	1990	75	1	7	3,356	74,260
13	DSL	1991	96	1	10	3,390	70,904
13	DSL	1992	192	2	19	3,426	67,514
13	DSL	1993	228	2	23	3,464	64,088
13	DSL	1994	269	3	27	3,505	60,624
13	DSL	1995	233	3	23	3,549	57,119
13	DSL	1996	217	2	22	3,596	53,570
13	DSL	1997	234	3	23	3,646	49,974
13	DSL	1998	310	4	31	3,701	46,328
13	DSL	1999	428	5	43	3,762	42,627
13	DSL	2000	533	6	53	3,828	38,865
13	DSL	2001	469	6	47	3,903	35,037
13	DSL	2002	599	7	60	3,987	31,134
13	DSL	2003	727	9	73	4,085	27,147
13	DSL	2004	910	12	91	4,200	23,062
13	DSL	2005	949	13	95	4,341	18,862
13	DSL	2006	362	5	36	4,523	14,521
13	DSL	2007	393	6	39	4,780	9,998
13	DSL	2008	419	7	42	5,218	5,218

Table F.1-1B. 2008 Calendar Year EMFAC Burden Run for Model Years 1965 to 2008

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
13	ELEC	1965	0	0	0	0	0
13	ELEC	1966	0	0	0	0	0
13	ELEC	1967	0	0	0	0	0
13	ELEC	1968	0	0	0	0	0
13	ELEC	1969	0	0	0	0	0
13	ELEC	1970	0	0	0	0	0
13	ELEC	1971	0	0	0	0	0
13	ELEC	1972	0	0	0	0	0
13	ELEC	1973	0	0	0	0	0
13	ELEC	1974	0	0	0	0	0
13	ELEC	1975	0	0	0	0	0
13	ELEC	1976	0	0	0	0	0
13	ELEC	1977	0	0	0	0	0
13	ELEC	1978	0	0	0	0	0
13	ELEC	1979	0	0	0	0	0
13	ELEC	1980	0	0	0	0	0
13	ELEC	1981	0	0	0	0	0
13	ELEC	1982	0	0	0	0	0
13	ELEC	1983	0	0	0	0	0
13	ELEC	1984	0	0	0	0	0
13	ELEC	1985	0	0	0	0	0
13	ELEC	1986	0	0	0	0	0
13	ELEC	1987	0	0	0	0	0
13	ELEC	1988	0	0	0	0	0
13	ELEC	1989	0	0	0	0	0
13	ELEC	1990	0	0	0	0	0
13	ELEC	1991	0	0	0	0	0
13	ELEC	1992	0	0	0	0	0
13	ELEC	1993	0	0	0	0	0
13	ELEC	1994	0	0	0	0	0
13	ELEC	1995	0	0	0	0	0
13	ELEC	1996	0	0	0	0	0
13	ELEC	1997	0	0	0	0	0
13	ELEC	1998	0	0	0	0	0
13	ELEC	1999	0	0	0	0	0
13	ELEC	2000	0	0	0	0	0
13	ELEC	2001	0	0	0	0	0
13	ELEC	2002	0	0	0	0	0
13	ELEC	2003	0	0	0	0	0
13	ELEC	2004	0	0	0	0	0
13	ELEC	2005	0	0	0	0	0
13	ELEC	2006	0	0	0	0	0
13	ELEC	2007	0	0	0	0	0
13	ELEC	2007	0	0	0	0	0

Note:

The EMFAC2007 burden run was done for the South Coast Air Basin and using the annual average option.

Table F.1-1C. Fleet Characteristics for Calendar Year 2008 (Model Years 1965-2008)

Vehicle Class:	LDA	LDA	LDA	LDA	LDT1	LDT1	LDT1	LDT1	LDT2	LDT2	LDT2	LDT2
Fuel Type:	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
VMT fraction	0.004	0.506	0.001	0.511	0.002	0.072	0.002	0.077	0.001	0.23	0	0.232
Trip fraction	0.005	0.487	0.001	0.493	0.002	0.064	0.002	0.068	0.001	0.203	0	0.204
Vehicle fraction	0.009	0.525	0.002	0.535	0.003	0.069	0.003	0.075	0.002	0.218	0	0.22

Vehicle Class:	MDV	MDV	MDV	MDV	LHD1	LHD1	LHD1	LHD1	LHD2	LHD2	LHD2	LHD2
Fuel Type:	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
VMT fraction	0.001	0.107	0	0.108	0	0.016	0.004	0.02	0	0.003	0.003	0.006
Trip fraction	0.001	0.093	0	0.094	0.001	0.06	0.005	0.065	0	0.012	0.004	0.016
Vehicle fraction	0.001	0.1	0	0.101	0	0.012	0.003	0.015	0	0.003	0.002	0.005

Vehicle Class:	MHD	MHD	MHD	MHD	HHD	HHD	HHD	HHD	OBUS	OBUS	OBUS	OBUS
Fuel Type:	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
VMT fraction	0	0.002	0.012	0.014	0	0.001	0.02	0.021	0	0.001	0.001	0.001
Trip fraction	0.002	0.011	0.027	0.04	0	0.002	0.003	0.005	0	0.003	0.002	0.005
Vehicle fraction	0	0.002	0.007	0.009	0	0	0.004	0.004	0	0	0	0.001

Vehicle Class:	UBUS	UBUS	UBUS	UBUS	MCY	MCY	MCY	MCY	SBUS	SBUS	SBUS	SBUS
Fuel Type:	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
VMT fraction	0	0	0.001	0.002	0.004	0.002	0	0.006	0	0	0.001	0.001
Trip fraction	0	0	0	0	0.006	0.002	0	0.008	0	0	0	0.001
Vehicle fraction	0	0	0	0.001	0.021	0.006	0	0.027	0	0	0.001	0.001

Vehicle Class:	MH	MH	MH	MH	ALL	ALL	ALL	ALL
Fuel Type:	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
VMT fraction	0	0.002	0	0.003	0.012	0.943	0.045	1
Trip fraction	0	0	0	0	0.018	0.937	0.045	1
Vehicle fraction	0.001	0.007	0.001	0.008	0.036	0.942	0.022	1

Table F.1-1D. EMFAC Based Speed Dependent Fuel Consumption per Vehicle Class (miles/gallon)

Speed (mph) ¹	Auto Vehicle Classes				Weighted Auto	Weighted LHD	MHD	HHD
	LDA	LDT1	LDT2	MDV				
0	0	0	0	0	0	0	0	0
1	4.01	0.52	1.47	0.50	7.01	19.15	6.70	2.62
2	4.01	0.52	1.47	0.50	7.01	19.15	6.70	2.62
3	4.14	0.54	1.51	0.52	7.24	19.15	6.70	2.62
4	4.40	0.57	1.61	0.55	7.69	19.15	6.70	2.62
5	4.68	0.60	1.71	0.58	8.17	19.15	6.70	2.62
6	4.98	0.64	1.82	0.62	8.69	19.15	6.70	2.73
7	5.28	0.67	1.93	0.66	9.21	19.15	6.70	2.85
8	5.58	0.71	2.04	0.70	9.74	19.15	6.70	2.96
9	5.88	0.74	2.15	0.73	10.26	19.15	6.70	3.07
10	6.19	0.78	2.26	0.77	10.78	19.15	6.70	3.18
11	6.52	0.82	2.38	0.81	11.37	19.15	6.70	3.32
12	6.86	0.86	2.51	0.86	11.95	19.15	6.70	3.46
13	7.20	0.90	2.63	0.90	12.54	19.15	6.70	3.60
14	7.54	0.94	2.75	0.94	13.13	19.15	6.70	3.74
15	7.88	0.97	2.88	0.98	13.72	19.15	6.70	3.88
16	8.24	1.02	3.01	1.03	14.34	19.15	6.70	4.03
17	8.60	1.06	3.14	1.07	14.96	19.15	6.70	4.18
18	8.95	1.10	3.27	1.12	15.58	19.15	6.70	4.32
19	9.31	1.14	3.40	1.16	16.20	19.15	6.70	4.47
20	9.67	1.18	3.53	1.21	16.82	19.15	6.70	4.62
21	10.02	1.22	3.66	1.25	17.43	19.15	6.70	4.68
22	10.38	1.27	3.79	1.29	18.05	19.15	6.70	4.74
23	10.73	1.31	3.92	1.34	18.66	19.15	6.70	4.81
24	11.09	1.35	4.05	1.38	19.27	19.15	6.70	4.87
25	11.44	1.39	4.18	1.43	19.89	19.15	6.70	4.94
26	11.76	1.43	4.29	1.47	20.44	19.15	6.70	5.00
27	12.08	1.46	4.41	1.51	20.99	19.15	6.70	5.06
28	12.40	1.50	4.53	1.55	21.55	19.15	6.70	5.12
29	12.72	1.54	4.65	1.59	22.10	19.15	6.70	5.18
30	13.04	1.58	4.76	1.63	22.66	19.15	6.70	5.24
31	13.30	1.61	4.86	1.66	23.10	19.15	6.70	5.29
32	13.55	1.64	4.95	1.69	23.55	19.15	6.70	5.35
33	13.81	1.67	5.04	1.72	24.00	19.15	6.70	5.40
34	14.07	1.69	5.14	1.76	24.44	19.15	6.70	5.46
35	14.33	1.72	5.23	1.79	24.89	19.15	6.70	5.52
36	14.49	1.74	5.29	1.81	25.18	19.15	6.70	5.56
37	14.66	1.76	5.36	1.83	25.47	19.15	6.70	5.61
38	14.83	1.78	5.42	1.85	25.76	19.15	6.70	5.66
39	15.00	1.80	5.48	1.87	26.05	19.15	6.70	5.70
40	15.17	1.82	5.54	1.89	26.35	19.15	6.70	5.75
41	15.23	1.83	5.56	1.90	26.45	19.15	6.70	5.78
42	15.29	1.84	5.59	1.91	26.56	19.15	6.70	5.82
43	15.35	1.84	5.61	1.92	26.67	19.15	6.70	5.86
44	15.42	1.85	5.63	1.92	26.77	19.15	6.70	5.89
45	15.48	1.86	5.65	1.93	26.88	19.15	6.70	5.93
46	15.43	1.85	5.63	1.92	26.79	19.15	6.70	5.95
47	15.37	1.85	5.62	1.92	26.70	19.15	6.70	5.97
48	15.32	1.84	5.60	1.91	26.61	19.15	6.70	5.99

Table F.1-1D. EMFAC Based Speed Dependent Fuel Consumption per Vehicle Class (miles/gallon)

Speed (mph) ¹	Auto Vehicle Classes				Weighted Auto	Weighted LHD	MHD	HHD
	LDA	LDT1	LDT2	MDV				
49	15.27	1.83	5.58	1.90	26.52	19.15	6.70	6.01
50	15.22	1.83	5.56	1.90	26.44	19.15	6.70	6.03
51	15.06	1.81	5.50	1.88	26.16	19.15	6.70	6.04
52	14.90	1.79	5.44	1.86	25.88	19.15	6.70	6.05
53	14.74	1.77	5.39	1.84	25.61	19.15	6.70	6.05
54	14.58	1.75	5.33	1.82	25.33	19.15	6.70	6.06
55	14.42	1.73	5.27	1.80	25.05	19.15	6.70	6.06
56	14.17	1.70	5.18	1.77	24.62	19.15	6.70	6.05
57	13.92	1.68	5.09	1.74	24.18	19.15	6.70	6.04
58	13.67	1.65	4.99	1.70	23.75	19.15	6.70	6.03
59	13.42	1.62	4.90	1.67	23.32	19.15	6.70	6.02
60	13.17	1.59	4.81	1.64	22.88	19.15	6.70	6.01
61	12.85	1.55	4.70	1.60	22.33	19.15	6.70	5.99
62	12.54	1.51	4.58	1.56	21.78	19.15	6.70	5.96
63	12.22	1.48	4.46	1.52	21.23	19.15	6.70	5.94
64	11.90	1.44	4.35	1.48	20.69	19.15	6.70	5.91
65	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.89
66	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.85
67	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.81
68	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.77
69	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.73
70	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.70
71	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.65
72	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.60
73	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.55
74	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.50
75	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.45
76	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.39
77	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.34
78	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.28
79	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.22
80	11.59	1.40	4.23	1.44	20.14	19.15	6.70	5.17

Notes:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

**Table F.1-1E. California Climate Action Registry
CO₂ Emission Factors**

Fuel Type	Emission Factor (kg CO₂/gallon)
Diesel	10.15
Motor Gasoline	8.81

Source: California Climate Action Registry General Reporting Protocol, version 3.1, Jan 2009, Table C.3.

Table F.1-1F. Composite Methane Emission Factor

Model Year	CH ₄ Emission Factor (g/mi) ¹								Model Year Composite Emission Factor (g/mi) ²			
	Passenger Car (gasoline)	LDT (gasoline)	LDT (diesel)	MDV (gasoline)	MDV (diesel)	LHD (diesel)	MHD (diesel)	HHD (diesel)	Autos	LHD (diesel)	MHD (diesel)	HHD (diesel)
1966	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	8.52E-05	0.00E+00	2.01E-09	6.54E-09
1967	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	8.11E-05	0.00E+00	4.03E-09	1.46E-08
1968	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	8.05E-05	5.03E-10	3.52E-09	2.06E-08
1969	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	9.54E-05	5.03E-10	5.03E-09	3.32E-08
1970	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	9.34E-05	1.01E-09	1.26E-08	3.52E-08
1971	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	8.68E-05	1.01E-09	1.31E-08	2.97E-08
1972	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	1.10E-04	1.01E-09	1.96E-08	5.08E-08
1973	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	1.19E-04	5.03E-10	1.91E-08	4.63E-08
1974	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	1.36E-04	3.02E-09	2.57E-08	5.03E-08
1975	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	1.14E-04	2.52E-09	2.37E-08	5.28E-08
1976	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	1.48E-04	2.52E-09	2.67E-08	5.03E-08
1977	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	2.14E-04	3.52E-09	3.42E-08	6.19E-08
1978	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	2.31E-04	4.53E-09	6.24E-08	9.41E-08
1979	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	2.74E-04	4.53E-09	1.27E-07	1.28E-07
1980	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	1.53E-04	7.55E-09	1.20E-07	1.19E-07
1981	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	1.71E-04	1.51E-09	1.25E-07	1.45E-07
1982	0.0704	0.0813	0.0011	0.409	0.0051	0.0051	0.0051	0.0051	2.03E-04	4.53E-09	9.16E-08	1.11E-07
1983	0.0704	0.0813	0.0009	0.409	0.0051	0.0051	0.0051	0.0051	2.49E-04	7.04E-09	8.91E-08	1.03E-07
1984	0.0704	0.0813	0.0009	0.409	0.0051	0.0051	0.0051	0.0051	4.31E-04	1.56E-08	2.21E-07	2.53E-07
1985	0.0704	0.0813	0.0009	0.409	0.0051	0.0051	0.0051	0.0051	5.92E-04	2.06E-08	2.95E-07	3.09E-07
1986	0.0704	0.0813	0.0009	0.409	0.0051	0.0051	0.0051	0.0051	7.87E-04	3.22E-08	3.25E-07	3.22E-07
1987	0.0704	0.0813	0.0009	0.3675	0.0051	0.0051	0.0051	0.0051	8.99E-04	3.62E-08	4.88E-07	3.88E-07
1988	0.0704	0.0813	0.0009	0.3492	0.0051	0.0051	0.0051	0.0051	1.02E-03	4.53E-08	5.39E-07	4.66E-07
1989	0.0704	0.0813	0.0009	0.3492	0.0051	0.0051	0.0051	0.0051	1.28E-03	3.57E-08	6.22E-07	6.57E-07
1990	0.0704	0.0813	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	1.32E-03	4.88E-08	8.90E-07	6.81E-07
1991	0.0704	0.0813	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	1.54E-03	1.46E-08	7.16E-07	5.30E-07
1992	0.0704	0.0813	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	1.60E-03	8.05E-09	5.33E-07	4.79E-07
1993	0.0704	0.0813	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	2.04E-03	1.16E-08	6.15E-07	6.73E-07
1994	0.0531	0.0646	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	2.09E-03	1.36E-08	7.52E-07	8.96E-07
1995	0.0358	0.0517	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	2.20E-03	2.57E-08	1.38E-06	1.16E-06
1996	0.0272	0.0452	0.001	0.1278	0.0051	0.0051	0.0051	0.0051	1.23E-03	1.66E-08	1.12E-06	1.07E-06
1997	0.0268	0.0452	0.001	0.0924	0.0051	0.0051	0.0051	0.0051	1.46E-03	2.82E-08	1.28E-06	9.62E-07
1998	0.0249	0.0391	0.001	0.0641	0.0051	0.0051	0.0051	0.0051	1.34E-03	1.06E-08	1.37E-06	9.80E-07
1999	0.0216	0.0321	0.001	0.0578	0.0051	0.0051	0.0051	0.0051	1.31E-03	3.98E-08	2.19E-06	1.19E-06
2000	0.0178	0.0346	0.001	0.0493	0.0051	0.0051	0.0051	0.0051	1.46E-03	3.92E-08	2.56E-06	1.20E-06
2001	0.011	0.0151	0.001	0.0528	0.0051	0.0051	0.0051	0.0051	9.83E-04	9.91E-08	2.13E-06	8.52E-07
2002	0.0107	0.0178	0.001	0.0546	0.0051	0.0051	0.0051	0.0051	1.09E-03	4.84E-07	1.58E-06	5.54E-07

Table F.1-1F. Composite Methane Emission Factor

Model Year	CH ₄ Emission Factor (g/mi) ¹								Model Year Composite Emission Factor (g/mi) ²			
	Passenger Car (gasoline)	LDT (gasoline)	LDT (diesel)	MDV (gasoline)	MDV (diesel)	LHD (diesel)	MHD (diesel)	HHD (diesel)	Autos	LHD (diesel)	MHD (diesel)	HHD (diesel)
2003	0.0114	0.0155	0.001	0.0533	0.0051	0.0051	0.0051	0.0051	1.16E-03	9.98E-07	1.66E-06	6.81E-07
2004	0.0145	0.0152	0.001	0.0341	0.0051	0.0051	0.0051	0.0051	1.15E-03	3.15E-06	2.15E-06	5.64E-07
2005	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.20E-03	3.53E-06	2.56E-06	7.77E-07
2006	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.17E-03	1.31E-06	2.39E-06	8.41E-07
2007	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.16E-03	1.46E-06	2.51E-06	8.51E-07
2008	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.10E-03	1.38E-06	2.35E-06	9.01E-07
Fleet Composite Emission Factor (g/mi) ³									3.43E-02	1.29E-05	3.40E-05	1.94E-05

Notes:

¹ Emission factors are from California Climate Action Registry General Reporting Protocol, Version 3.1, Jan. 2009, Table C.4.

² Model year composite emission factors are calculated by weighting CH₄ emission factors per vehicle class by the fraction of vehicle class within the 2008 fleet.

³ Fleet composite emission factor is the sum of model year composite emission factors.

Table F.1-1G. Composite Nitrous Oxide Emission Factor

Model Year	CCAR N ₂ O Emission Factor (g/mi) ¹								Model Year Composite Emission Factor (g/mi) ²			
	Passenger Car (gasoline)	LDT (gasoline)	LDT (diesel)	MDV (gasoline)	MDV (diesel)	LHD (diesel)	MHD (diesel)	HHD (diesel)	Autos	LHD (diesel)	MHD (diesel)	HHD (diesel)
1966	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	8.36E-05	0.00E+00	1.89E-09	6.16E-09
1967	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	7.92E-05	0.00E+00	3.79E-09	1.37E-08
1968	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	7.97E-05	4.74E-10	3.32E-09	1.94E-08
1969	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	9.61E-05	4.74E-10	4.74E-09	3.13E-08
1970	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	9.46E-05	9.47E-10	1.18E-08	3.32E-08
1971	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	8.87E-05	9.47E-10	1.23E-08	2.79E-08
1972	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	1.13E-04	9.47E-10	1.85E-08	4.78E-08
1973	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	1.20E-04	4.74E-10	1.80E-08	4.36E-08
1974	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	8.15E-05	2.84E-09	2.42E-08	4.74E-08
1975	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	5.35E-05	2.37E-09	2.23E-08	4.97E-08
1976	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	6.75E-05	2.37E-09	2.51E-08	4.74E-08
1977	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	9.07E-05	3.32E-09	3.22E-08	5.83E-08
1978	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	1.13E-04	4.26E-09	5.87E-08	8.86E-08
1979	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	1.33E-04	4.26E-09	1.19E-07	1.21E-07
1980	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	9.47E-05	7.10E-09	1.13E-07	1.12E-07
1981	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	1.13E-04	1.42E-09	1.18E-07	1.36E-07
1982	0.0647	0.1035	0.0017	0.0515	0.0048	0.0048	0.0048	0.0048	1.34E-04	4.26E-09	8.62E-08	1.04E-07
1983	0.0647	0.1035	0.0014	0.0515	0.0048	0.0048	0.0048	0.0048	1.64E-04	6.63E-09	8.38E-08	9.66E-08
1984	0.0647	0.1035	0.0014	0.0515	0.0048	0.0048	0.0048	0.0048	2.99E-04	1.47E-08	2.08E-07	2.38E-07
1985	0.0647	0.1035	0.0014	0.0515	0.0048	0.0048	0.0048	0.0048	4.18E-04	1.94E-08	2.78E-07	2.91E-07
1986	0.0647	0.1035	0.0014	0.0515	0.0048	0.0048	0.0048	0.0048	5.77E-04	3.03E-08	3.06E-07	3.03E-07
1987	0.0647	0.1035	0.0014	0.0849	0.0048	0.0048	0.0048	0.0048	7.20E-04	3.41E-08	4.59E-07	3.66E-07
1988	0.0647	0.1035	0.0014	0.0933	0.0048	0.0048	0.0048	0.0048	8.25E-04	4.26E-08	5.08E-07	4.39E-07
1989	0.0647	0.1035	0.0014	0.0933	0.0048	0.0048	0.0048	0.0048	1.06E-03	3.36E-08	5.86E-07	6.18E-07
1990	0.0647	0.1035	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	1.15E-03	4.59E-08	8.38E-07	6.41E-07
1991	0.0647	0.1035	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	1.37E-03	1.37E-08	6.73E-07	4.99E-07
1992	0.0647	0.1035	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	1.38E-03	7.58E-09	5.02E-07	4.50E-07
1993	0.0647	0.1035	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	1.75E-03	1.09E-08	5.79E-07	6.33E-07
1994	0.056	0.0982	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	1.87E-03	1.28E-08	7.08E-07	8.43E-07
1995	0.0473	0.0908	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	2.05E-03	2.42E-08	1.30E-06	1.09E-06
1996	0.0426	0.0871	0.0015	0.168	0.0048	0.0048	0.0048	0.0048	1.97E-03	1.56E-08	1.05E-06	1.01E-06
1997	0.0422	0.0871	0.0015	0.1726	0.0048	0.0048	0.0048	0.0048	2.59E-03	2.65E-08	1.20E-06	9.06E-07
1998	0.0393	0.0728	0.0015	0.1693	0.0048	0.0048	0.0048	0.0048	2.57E-03	9.95E-09	1.29E-06	9.22E-07
1999	0.0337	0.0564	0.0015	0.1435	0.0048	0.0048	0.0048	0.0048	2.38E-03	3.74E-08	2.06E-06	1.12E-06
2000	0.0273	0.0621	0.0015	0.1092	0.0048	0.0048	0.0048	0.0048	2.58E-03	3.69E-08	2.40E-06	1.13E-06
2001	0.0158	0.0164	0.0015	0.1235	0.0048	0.0048	0.0048	0.0048	1.63E-03	9.33E-08	2.01E-06	8.02E-07
2002	0.0153	0.0228	0.0015	0.1307	0.0048	0.0048	0.0048	0.0048	1.90E-03	4.56E-07	1.48E-06	5.21E-07
2003	0.0135	0.0114	0.0015	0.124	0.0048	0.0048	0.0048	0.0048	1.75E-03	9.40E-07	1.56E-06	6.41E-07

Table F.1-1G. Composite Nitrous Oxide Emission Factor

Model Year	CCAR N ₂ O Emission Factor (g/mi) ¹								Model Year Composite Emission Factor (g/mi) ²			
	Passenger Car (gasoline)	LDT (gasoline)	LDT (diesel)	MDV (gasoline)	MDV (diesel)	LHD (diesel)	MHD (diesel)	HHD (diesel)	Autos	LHD (diesel)	MHD (diesel)	HHD (diesel)
2004	0.083	0.0132	0.0015	0.0285	0.0048	0.0048	0.0048	0.0048	3.38E-03	2.97E-06	2.02E-06	5.30E-07
2005	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	6.80E-04	3.32E-06	2.41E-06	7.32E-07
2006	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	6.68E-04	1.23E-06	2.25E-06	7.92E-07
2007	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	6.59E-04	1.38E-06	2.36E-06	8.01E-07
2008	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	6.24E-04	1.30E-06	2.21E-06	8.48E-07
Fleet Composite Emission Factor (g/mi)³									3.86E-02	1.21E-05	3.20E-05	1.82E-05

Notes:

¹ Emission factors are from California Climate Action Registry General Reporting Protocol, Version 3.1, Jan. 2009, Table C.4.

² Model year composite emission factors are calculated by weighting N₂O emission factors per vehicle class by the fraction of vehicle class within the 2008 fleet.

³ Fleet composite emission factor is the sum of model year composite emission factors.

Table F.2-1A. 2035 Calendar Year EMFAC Based Fuel Consumption (miles/gallon)

Speed (MPH)	Vehicle Class and Fuel Type															
	LDA	LDA	LDA	LDA	LDT1	LDT1	LDT1	LDT1	LDT2	LDT2	LDT2	LDT2	MDV	MDV	MDV	MDV
	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	8.225	0	8.225	0	6.511	0	6.511	0	6.366	0	6.366	0	4.681	0	4.681
2	0	8.225	0	8.225	0	6.511	0	6.511	0	6.366	0	6.366	0	4.681	0	4.681
3	0	8.488	0	8.488	0	6.72	0	6.72	0	6.57	0	6.57	0	4.831	0	4.831
4	0	9.03	0	9.03	0	7.149	0	7.149	0	6.99	0	6.99	0	5.139	0	5.139
5	0	9.593	0	9.593	0	7.595	0	7.595	0	7.425	0	7.425	0	5.459	0	5.459
10	0	12.692	0	12.692	0	10.048	0	10.048	0	9.822	0	9.822	0	7.222	0	7.222
15	0	16.178	0	16.178	0	12.809	0	12.809	0	12.519	0	12.519	0	9.205	0	9.205
20	0	19.87	0	19.87	0	15.732	0	15.732	0	15.374	0	15.374	0	11.305	0	11.305
25	0	23.515	0	23.515	0	18.617	0	18.617	0	18.193	0	18.193	0	13.377	0	13.377
30	0	26.813	0	26.813	0	21.229	0	21.229	0	20.743	0	20.743	0	15.253	0	15.253
35	0	29.46	0	29.46	0	23.324	0	23.324	0	22.791	0	22.791	0	16.758	0	16.758
40	0	31.188	0	31.188	0	24.693	0	24.693	0	24.129	0	24.129	0	17.742	0	17.742
45	0	31.815	0	31.815	0	25.189	0	25.189	0	24.615	0	24.615	0	18.099	0	18.099
50	0	31.272	0	31.272	0	24.759	0	24.759	0	24.197	0	24.197	0	17.792	0	17.792
55	0	29.617	0	29.617	0	23.448	0	23.448	0	22.919	0	22.919	0	16.852	0	16.852
60	0	27.025	0	27.025	0	21.396	0	21.396	0	20.917	0	20.917	0	15.379	0	15.379
65	0	23.761	0	23.761	0	18.811	0	18.811	0	18.392	0	18.392	0	13.523	0	13.523
70	0	23.761	0	23.761	0	18.811	0	18.811	0	18.392	0	18.392	0	13.523	0	13.523
75	0	23.761	0	23.761	0	18.811	0	18.811	0	18.392	0	18.392	0	13.523	0	13.523
80	0	23.761	0	23.761	0	18.811	0	18.811	0	18.392	0	18.392	0	13.523	0	13.523

Note:

The EMFAC2007 run was done for the South Coast Air Basin and using the annual average option.

Table F.2-1A. 2035 Calendar Year EMFAC Based Fuel Consumption (miles/gallon)

Speed (MPH)	Vehicle Class and Fuel Type															
	LHD1	LHD1	LHD1	LHD1	LHD2	LHD2	LHD2	LHD2	MHD	MHD	MHD	MHD	HHD	HHD	HHD	HHD
	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	3.523	0	3.523	0	3.524	0	3.524	0	3.522	0	3.522	0	3.265	0	3.265
2	0	3.523	0	3.523	0	3.524	0	3.524	0	3.522	0	3.522	0	3.265	0	3.265
3	0	3.523	0	3.523	0	3.524	0	3.524	0	3.522	0	3.522	0	3.265	0	3.265
4	0	3.523	0	3.523	0	3.524	0	3.524	0	3.522	0	3.522	0	3.265	0	3.265
5	0	3.523	0	3.523	0	3.524	0	3.524	0	3.522	0	3.522	0	3.265	0	3.265
10	0	5.295	0	5.295	0	5.297	0	5.297	0	5.294	0	5.294	0	4.907	0	4.907
15	0	7.533	0	7.533	0	7.535	0	7.535	0	7.532	0	7.532	0	6.982	0	6.982
20	0	10.144	0	10.144	0	10.146	0	10.146	0	10.141	0	10.141	0	9.402	0	9.402
25	0	12.928	0	12.928	0	12.93	0	12.93	0	12.925	0	12.925	0	11.985	0	11.985
30	0	15.594	0	15.594	0	15.597	0	15.597	0	15.59	0	15.59	0	14.46	0	14.46
35	0	17.803	0	17.803	0	17.807	0	17.807	0	17.799	0	17.799	0	16.514	0	16.514
40	0	19.238	0	19.238	0	19.242	0	19.242	0	19.234	0	19.234	0	17.849	0	17.849
45	0	19.676	0	19.676	0	19.68	0	19.68	0	19.672	0	19.672	0	18.261	0	18.261
50	0	19.047	0	19.047	0	19.051	0	19.051	0	19.043	0	19.043	0	17.682	0	17.682
55	0	17.451	0	17.451	0	17.455	0	17.455	0	17.447	0	17.447	0	16.205	0	16.205
60	0	15.134	0	15.134	0	15.137	0	15.137	0	15.13	0	15.13	0	14.057	0	14.057
65	0	12.421	0	12.421	0	12.424	0	12.424	0	12.419	0	12.419	0	11.54	0	11.54
70	0	9.65	0	9.65	0	9.652	0	9.652	0	9.648	0	9.648	0	8.967	0	8.967
75	0	7.095	0	7.095	0	7.097	0	7.097	0	7.094	0	7.094	0	6.595	0	6.595
80	0	4.938	0	4.938	0	4.939	0	4.939	0	4.937	0	4.937	0	4.59	0	4.59

Note:

The EMFAC2007 run was done for the South Coast Air Basin and using the annual average option.

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
1	NCAT	1991	0	0	0	0	0
1	NCAT	1992	0	0	0	0	0
1	NCAT	1993	0	0	0	0	0
1	NCAT	1994	0	0	0	0	0
1	NCAT	1995	0	0	0	0	0
1	NCAT	1996	0	0	0	0	0
1	NCAT	1997	0	0	0	0	0
1	NCAT	1998	0	0	0	0	0
1	NCAT	1999	0	0	0	0	0
1	NCAT	2000	0	0	0	0	0
1	NCAT	2001	0	0	0	0	0
1	NCAT	2002	0	0	0	0	0
1	NCAT	2003	0	0	0	0	0
1	NCAT	2004	0	0	0	0	0
1	NCAT	2005	0	0	0	0	0
1	NCAT	2006	0	0	0	0	0
1	NCAT	2007	0	0	0	0	0
1	NCAT	2008	0	0	0	0	0
1	NCAT	2009	0	0	0	0	0
1	NCAT	2010	0	0	0	0	0
1	NCAT	2011	0	0	0	0	0
1	NCAT	2012	0	0	0	0	0
1	NCAT	2013	0	0	0	0	0
1	NCAT	2014	0	0	0	0	0
1	NCAT	2015	0	0	0	0	0
1	NCAT	2016	0	0	0	0	0
1	NCAT	2017	0	0	0	0	0
1	NCAT	2018	0	0	0	0	0
1	NCAT	2019	0	0	0	0	0
1	NCAT	2020	0	0	0	0	0
1	NCAT	2021	0	0	0	0	0
1	NCAT	2022	0	0	0	0	0
1	NCAT	2023	0	0	0	0	0
1	NCAT	2024	0	0	0	0	0
1	NCAT	2025	0	0	0	0	0
1	NCAT	2026	0	0	0	0	0
1	NCAT	2027	0	0	0	0	0
1	NCAT	2028	0	0	0	0	0
1	NCAT	2029	0	0	0	0	0
1	NCAT	2030	0	0	0	0	0
1	NCAT	2031	0	0	0	0	0
1	NCAT	2032	0	0	0	0	0
1	NCAT	2033	0	0	0	0	0
1	NCAT	2034	0	0	0	0	0
1	NCAT	2035	0	0	0	0	0
1	CAT	1991	6358	91.64	23650	5002	386211
1	CAT	1992	6355	93.06	24018	5088	381210
1	CAT	1993	7584	112.87	29120	5175	376122
1	CAT	1994	8824	133.53	34409	5265	370947
1	CAT	1995	11253	173.09	44557	5357	365682
1	CAT	1996	10914	170.7	43869	5452	360325

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
1	CAT	1997	14152	224.98	57734	5549	354873
1	CAT	1998	16729	270.47	69250	5648	349324
1	CAT	1999	20150	331.51	84622	5749	343677
1	CAT	2000	27659	463.68	117815	5854	337927
1	CAT	2001	30613	522.24	132235	5962	332073
1	CAT	2002	35258	612.59	154416	6073	326111
1	CAT	2003	42159	745.91	188434	6187	320038
1	CAT	2004	42657	770.71	195774	6304	313852
1	CAT	2005	53483	989.1	253486	6426	307547
1	CAT	2006	53549	1010.37	262364	6550	301122
1	CAT	2007	53654	1033.12	271464	6680	294571
1	CAT	2008	54738	1073.91	285704	6814	287891
1	CAT	2009	55995	1120.35	300101	6953	281076
1	CAT	2010	57695	1178.19	316134	7098	274123
1	CAT	2011	60362	1257.54	337390	7248	267026
1	CAT	2012	68877	1464.61	391181	7404	259778
1	CAT	2013	79542	1728.61	456528	7566	252374
1	CAT	2014	88306	1964.47	513008	7736	244808
1	CAT	2015	102211	2326.32	599921	7914	237072
1	CAT	2016	114171	2660.06	674684	8100	229159
1	CAT	2017	134736	3215.58	801601	8296	221059
1	CAT	2018	158729	3882.73	952276	8502	212763
1	CAT	2019	185174	4646.63	1118337	8721	204261
1	CAT	2020	210644	5426.58	1280590	8952	195540
1	CAT	2021	218114	5776.58	1336904	9199	186588
1	CAT	2022	241533	6580.4	1490110	9463	177389
1	CAT	2023	261077	7326.44	1623736	9746	167926
1	CAT	2024	285512	8274.69	1787123	10051	158181
1	CAT	2025	301104	9017.69	1899778	10384	148129
1	CAT	2026	315486	9783.31	2003136	10748	137745
1	CAT	2027	328459	10571.13	2098642	11151	126997
1	CAT	2028	339309	11365.34	2178145	11601	115846
1	CAT	2029	349451	12223.44	2250240	12111	104245
1	CAT	2030	357205	13107.85	2310883	12700	92134
1	CAT	2031	343127	13262.1	2226673	13396	79435
1	CAT	2032	349128	14358.7	2269104	14249	66039
1	CAT	2033	356140	15781.66	2321801	15348	51790
1	CAT	2034	369108	18012.48	2413725	16897	36442
1	CAT	2035	371333	20968.68	2435701	19545	19545
1	DSL	1991	2	0.03	7	5002	386211
1	DSL	1992	2	0.03	7	5088	381210
1	DSL	1993	1	0.02	6	5175	376122
1	DSL	1994	1	0.02	4	5265	370947
1	DSL	1995	9	0.13	35	5357	365682
1	DSL	1996	7	0.11	29	5452	360325
1	DSL	1997	8	0.13	33	5549	354873
1	DSL	1998	14	0.22	58	5648	349324
1	DSL	1999	17	0.28	72	5749	343677
1	DSL	2000	12	0.21	52	5854	337927
1	DSL	2001	15	0.25	63	5962	332073
1	DSL	2002	44	0.76	191	6073	326111

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
1	DSL	2003	54	0.97	243	6187	320038
1	DSL	2004	0	0	0	0	0
1	DSL	2005	0	0	0	0	0
1	DSL	2006	0	0	0	0	0
1	DSL	2007	0	0	0	0	0
1	DSL	2008	0	0	0	0	0
1	DSL	2009	0	0	0	0	0
1	DSL	2010	0	0	0	0	0
1	DSL	2011	0	0	0	0	0
1	DSL	2012	0	0	0	0	0
1	DSL	2013	0	0	0	0	0
1	DSL	2014	0	0	0	0	0
1	DSL	2015	0	0	0	0	0
1	DSL	2016	0	0	0	0	0
1	DSL	2017	0	0	0	0	0
1	DSL	2018	0	0	0	0	0
1	DSL	2019	0	0	0	0	0
1	DSL	2020	0	0	0	0	0
1	DSL	2021	0	0	0	0	0
1	DSL	2022	0	0	0	0	0
1	DSL	2023	0	0	0	0	0
1	DSL	2024	0	0	0	0	0
1	DSL	2025	0	0	0	0	0
1	DSL	2026	0	0	0	0	0
1	DSL	2027	0	0	0	0	0
1	DSL	2028	0	0	0	0	0
1	DSL	2029	0	0	0	0	0
1	DSL	2030	0	0	0	0	0
1	DSL	2031	0	0	0	0	0
1	DSL	2032	0	0	0	0	0
1	DSL	2033	0	0	0	0	0
1	DSL	2034	0	0	0	0	0
1	DSL	2035	0	0	0	0	0
1	ELEC	1991	0	0	0	0	0
1	ELEC	1992	0	0	0	0	0
1	ELEC	1993	0	0	0	0	0
1	ELEC	1994	0	0	0	0	0
1	ELEC	1995	0	0	0	0	0
1	ELEC	1996	0	0	0	0	0
1	ELEC	1997	0	0	0	0	0
1	ELEC	1998	0	0	0	0	0
1	ELEC	1999	0	0	0	0	0
1	ELEC	2000	0	0	0	0	0
1	ELEC	2001	0	0	0	0	0
1	ELEC	2002	0	0	0	0	0
1	ELEC	2003	10	0.18	46	6187	320038
1	ELEC	2004	5	0.09	21	6304	313852
1	ELEC	2005	15	0.27	70	6426	307547
1	ELEC	2006	269	5.08	1318	6550	301122
1	ELEC	2007	324	6.24	1639	6680	294571
1	ELEC	2008	330	6.48	1725	6814	287891

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
1	ELEC	2009	509	10.17	2725	6953	281076
1	ELEC	2010	583	11.9	3193	7098	274123
1	ELEC	2011	610	12.7	3408	7248	267026
1	ELEC	2012	978	20.8	5554	7404	259778
1	ELEC	2013	1129	24.54	6482	7566	252374
1	ELEC	2014	1254	27.89	7284	7736	244808
1	ELEC	2015	1980	45.06	11619	7914	237072
1	ELEC	2016	2211	51.52	13067	8100	229159
1	ELEC	2017	2610	62.28	15525	8296	221059
1	ELEC	2018	3903	95.48	23417	8502	212763
1	ELEC	2019	4553	114.26	27500	8721	204261
1	ELEC	2020	5180	133.44	31490	8952	195540
1	ELEC	2021	5363	142.05	32875	9199	186588
1	ELEC	2022	5939	161.81	36642	9463	177389
1	ELEC	2023	6420	180.16	39928	9746	167926
1	ELEC	2024	7021	203.48	43946	10051	158181
1	ELEC	2025	7404	221.75	46716	10384	148129
1	ELEC	2026	7758	240.57	49257	10748	137745
1	ELEC	2027	8077	259.95	51606	11151	126997
1	ELEC	2028	8344	279.48	53561	11601	115846
1	ELEC	2029	8593	300.58	55334	12111	104245
1	ELEC	2030	8784	322.32	56825	12700	92134
1	ELEC	2031	8438	326.12	54754	13396	79435
1	ELEC	2032	8585	353.08	55798	14249	66039
1	ELEC	2033	8758	388.07	57093	15348	51790
1	ELEC	2034	9076	442.93	59354	16897	36442
1	ELEC	2035	9131	515.62	59894	19545	19545
2	NCAT	1991	0	0	0	0	0
2	NCAT	1992	0	0	0	0	0
2	NCAT	1993	0	0	0	0	0
2	NCAT	1994	0	0	0	0	0
2	NCAT	1995	0	0	0	0	0
2	NCAT	1996	0	0	0	0	0
2	NCAT	1997	0	0	0	0	0
2	NCAT	1998	0	0	0	0	0
2	NCAT	1999	0	0	0	0	0
2	NCAT	2000	0	0	0	0	0
2	NCAT	2001	0	0	0	0	0
2	NCAT	2002	0	0	0	0	0
2	NCAT	2003	0	0	0	0	0
2	NCAT	2004	0	0	0	0	0
2	NCAT	2005	0	0	0	0	0
2	NCAT	2006	0	0	0	0	0
2	NCAT	2007	0	0	0	0	0
2	NCAT	2008	0	0	0	0	0
2	NCAT	2009	0	0	0	0	0
2	NCAT	2010	0	0	0	0	0
2	NCAT	2011	0	0	0	0	0
2	NCAT	2012	0	0	0	0	0
2	NCAT	2013	0	0	0	0	0
2	NCAT	2014	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
2	NCAT	2015	0	0	0	0	0
2	NCAT	2016	0	0	0	0	0
2	NCAT	2017	0	0	0	0	0
2	NCAT	2018	0	0	0	0	0
2	NCAT	2019	0	0	0	0	0
2	NCAT	2020	0	0	0	0	0
2	NCAT	2021	0	0	0	0	0
2	NCAT	2022	0	0	0	0	0
2	NCAT	2023	0	0	0	0	0
2	NCAT	2024	0	0	0	0	0
2	NCAT	2025	0	0	0	0	0
2	NCAT	2026	0	0	0	0	0
2	NCAT	2027	0	0	0	0	0
2	NCAT	2028	0	0	0	0	0
2	NCAT	2029	0	0	0	0	0
2	NCAT	2030	0	0	0	0	0
2	NCAT	2031	0	0	0	0	0
2	NCAT	2032	0	0	0	0	0
2	NCAT	2033	0	0	0	0	0
2	NCAT	2034	0	0	0	0	0
2	NCAT	2035	0	0	0	0	0
2	CAT	1991	840	17.54	3124	7128	461621
2	CAT	1992	845	17.85	3195	7203	454493
2	CAT	1993	1252	26.64	4808	7280	447290
2	CAT	1994	1525	32.73	5949	7359	440010
2	CAT	1995	1893	41.09	7495	7439	432651
2	CAT	1996	2312	50.53	9293	7521	425212
2	CAT	1997	2687	59.45	10963	7606	417691
2	CAT	1998	4177	92.8	17289	7693	410085
2	CAT	1999	8423	188.01	35373	7782	402393
2	CAT	2000	10899	246.14	46426	7873	394611
2	CAT	2001	13693	312.64	59146	7967	386737
2	CAT	2002	8500	196.44	37227	8064	378770
2	CAT	2003	8668	202.45	38740	8164	370706
2	CAT	2004	8608	204.04	39509	8267	362542
2	CAT	2005	9785	235.53	46378	8373	354276
2	CAT	2006	9652	235.51	47292	8482	345903
2	CAT	2007	9552	236.3	48329	8595	337421
2	CAT	2008	9334	234.73	48719	8713	328825
2	CAT	2009	9775	248.78	52387	8834	320113
2	CAT	2010	10709	276.58	58680	8960	311279
2	CAT	2011	11821	309.26	66076	9091	302319
2	CAT	2012	13489	358.08	76610	9228	293227
2	CAT	2013	15526	418.34	89110	9369	284000
2	CAT	2014	16713	458.11	97094	9518	274630
2	CAT	2015	18765	522.69	110142	9673	265112
2	CAT	2016	19716	558.05	116510	9836	255439
2	CAT	2017	22356	643.78	133003	10008	245602
2	CAT	2018	24812	727.45	148857	10188	235594
2	CAT	2019	26744	798.85	161520	10379	225406
2	CAT	2020	29143	887.64	177170	10582	215027

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
2	CAT	2021	31313	973.45	191928	10797	204445
2	CAT	2022	33687	1069.72	207825	11028	193648
2	CAT	2023	36221	1176.27	225270	11275	182620
2	CAT	2024	39498	1315.49	247230	11543	171345
2	CAT	2025	41091	1403.64	259256	11833	159802
2	CAT	2026	42478	1490.83	269711	12151	147970
2	CAT	2027	44127	1594.3	281946	12503	135818
2	CAT	2028	45593	1699.67	292679	12896	123315
2	CAT	2029	47170	1819.66	303742	13342	110419
2	CAT	2030	48692	1951.83	315005	13857	97076
2	CAT	2031	50561	2110.2	328106	14466	83219
2	CAT	2032	52385	2299.83	340469	15211	68753
2	CAT	2033	54227	2531.9	353525	16173	53542
2	CAT	2034	56659	2867.56	370511	17527	37369
2	CAT	2035	57407	3290.08	376556	19842	19842
2	DSL	1991	21	0.43	78	7128	461621
2	DSL	1992	20	0.43	77	7203	454493
2	DSL	1993	34	0.72	132	7280	447290
2	DSL	1994	40	0.84	155	7359	440010
2	DSL	1995	81	1.73	320	7439	432651
2	DSL	1996	83	1.81	335	7521	425212
2	DSL	1997	96	2.11	391	7606	417691
2	DSL	1998	53	1.18	220	7693	410085
2	DSL	1999	264	5.92	1108	7782	402393
2	DSL	2000	259	5.85	1102	7873	394611
2	DSL	2001	383	8.8	1656	7967	386737
2	DSL	2002	363	8.44	1592	8064	378770
2	DSL	2003	435	10.18	1943	8164	370706
2	DSL	2004	0	0	0	0	0
2	DSL	2005	0	0	0	0	0
2	DSL	2006	0	0	0	0	0
2	DSL	2007	0	0	0	0	0
2	DSL	2008	0	0	0	0	0
2	DSL	2009	0	0	0	0	0
2	DSL	2010	0	0	0	0	0
2	DSL	2011	0	0	0	0	0
2	DSL	2012	0	0	0	0	0
2	DSL	2013	0	0	0	0	0
2	DSL	2014	0	0	0	0	0
2	DSL	2015	0	0	0	0	0
2	DSL	2016	0	0	0	0	0
2	DSL	2017	0	0	0	0	0
2	DSL	2018	0	0	0	0	0
2	DSL	2019	0	0	0	0	0
2	DSL	2020	0	0	0	0	0
2	DSL	2021	0	0	0	0	0
2	DSL	2022	0	0	0	0	0
2	DSL	2023	0	0	0	0	0
2	DSL	2024	0	0	0	0	0
2	DSL	2025	0	0	0	0	0
2	DSL	2026	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
2	DSL	2027	0	0	0	0	0
2	DSL	2028	0	0	0	0	0
2	DSL	2029	0	0	0	0	0
2	DSL	2030	0	0	0	0	0
2	DSL	2031	0	0	0	0	0
2	DSL	2032	0	0	0	0	0
2	DSL	2033	0	0	0	0	0
2	DSL	2034	0	0	0	0	0
2	DSL	2035	0	0	0	0	0
2	ELEC	1991	0	0	0	0	0
2	ELEC	1992	0	0	0	0	0
2	ELEC	1993	0	0	0	0	0
2	ELEC	1994	0	0	0	0	0
2	ELEC	1995	0	0	0	0	0
2	ELEC	1996	0	0	0	0	0
2	ELEC	1997	0	0	0	0	0
2	ELEC	1998	0	0	0	0	0
2	ELEC	1999	0	0	0	0	0
2	ELEC	2000	0	0	0	0	0
2	ELEC	2001	0	0	0	0	0
2	ELEC	2002	0	0	0	0	0
2	ELEC	2003	2	0.04	8	8164	370706
2	ELEC	2004	1	0.03	5	8267	362542
2	ELEC	2005	0	0.01	2	8373	354276
2	ELEC	2006	49	1.18	238	8482	345903
2	ELEC	2007	58	1.43	292	8595	337421
2	ELEC	2008	56	1.42	294	8713	328825
2	ELEC	2009	89	2.26	476	8834	320113
2	ELEC	2010	108	2.79	593	8960	311279
2	ELEC	2011	119	3.12	667	9091	302319
2	ELEC	2012	192	5.08	1088	9228	293227
2	ELEC	2013	220	5.94	1265	9369	284000
2	ELEC	2014	237	6.5	1379	9518	274630
2	ELEC	2015	363	10.12	2133	9673	265112
2	ELEC	2016	382	10.81	2257	9836	255439
2	ELEC	2017	433	12.47	2576	10008	245602
2	ELEC	2018	610	17.89	3660	10188	235594
2	ELEC	2019	658	19.64	3972	10379	225406
2	ELEC	2020	717	21.83	4357	10582	215027
2	ELEC	2021	770	23.94	4720	10797	204445
2	ELEC	2022	828	26.3	5110	11028	193648
2	ELEC	2023	891	28.92	5539	11275	182620
2	ELEC	2024	971	32.35	6079	11543	171345
2	ELEC	2025	1010	34.52	6375	11833	159802
2	ELEC	2026	1045	36.66	6632	12151	147970
2	ELEC	2027	1085	39.2	6933	12503	135818
2	ELEC	2028	1121	41.8	7197	12896	123315
2	ELEC	2029	1160	44.75	7469	13342	110419
2	ELEC	2030	1197	48	7746	13857	97076
2	ELEC	2031	1243	51.89	8068	14466	83219
2	ELEC	2032	1288	56.55	8372	15211	68753

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
2	ELEC	2033	1333	62.26	8693	16173	53542
2	ELEC	2034	1393	70.51	9111	17527	37369
2	ELEC	2035	1412	80.9	9260	19842	19842
3	NCAT	1991	0	0	0	0	0
3	NCAT	1992	0	0	0	0	0
3	NCAT	1993	0	0	0	0	0
3	NCAT	1994	0	0	0	0	0
3	NCAT	1995	0	0	0	0	0
3	NCAT	1996	0	0	0	0	0
3	NCAT	1997	0	0	0	0	0
3	NCAT	1998	0	0	0	0	0
3	NCAT	1999	0	0	0	0	0
3	NCAT	2000	0	0	0	0	0
3	NCAT	2001	0	0	0	0	0
3	NCAT	2002	0	0	0	0	0
3	NCAT	2003	0	0	0	0	0
3	NCAT	2004	0	0	0	0	0
3	NCAT	2005	0	0	0	0	0
3	NCAT	2006	0	0	0	0	0
3	NCAT	2007	0	0	0	0	0
3	NCAT	2008	0	0	0	0	0
3	NCAT	2009	0	0	0	0	0
3	NCAT	2010	0	0	0	0	0
3	NCAT	2011	0	0	0	0	0
3	NCAT	2012	0	0	0	0	0
3	NCAT	2013	0	0	0	0	0
3	NCAT	2014	0	0	0	0	0
3	NCAT	2015	0	0	0	0	0
3	NCAT	2016	0	0	0	0	0
3	NCAT	2017	0	0	0	0	0
3	NCAT	2018	0	0	0	0	0
3	NCAT	2019	0	0	0	0	0
3	NCAT	2020	0	0	0	0	0
3	NCAT	2021	0	0	0	0	0
3	NCAT	2022	0	0	0	0	0
3	NCAT	2023	0	0	0	0	0
3	NCAT	2024	0	0	0	0	0
3	NCAT	2025	0	0	0	0	0
3	NCAT	2026	0	0	0	0	0
3	NCAT	2027	0	0	0	0	0
3	NCAT	2028	0	0	0	0	0
3	NCAT	2029	0	0	0	0	0
3	NCAT	2030	0	0	0	0	0
3	NCAT	2031	0	0	0	0	0
3	NCAT	2032	0	0	0	0	0
3	NCAT	2033	0	0	0	0	0
3	NCAT	2034	0	0	0	0	0
3	NCAT	2035	0	0	0	0	0
3	CAT	1991	3260	67.3	12127	7126	458664
3	CAT	1992	3372	70.29	12744	7200	451538
3	CAT	1993	4937	103.65	18958	7275	444338

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
3	CAT	1994	5888	124.9	22960	7352	437063
3	CAT	1995	7243	155.18	28679	7431	429711
3	CAT	1996	7442	160.73	29913	7511	422280
3	CAT	1997	9594	209.24	39138	7594	414768
3	CAT	1998	12772	281.28	52871	7679	407174
3	CAT	1999	15985	355.34	67129	7767	399494
3	CAT	2000	20210	454.04	86087	7856	391727
3	CAT	2001	20196	458.73	87240	7948	383871
3	CAT	2002	28458	653.24	124635	8044	375922
3	CAT	2003	32345	750.74	144568	8141	367879
3	CAT	2004	36317	855.15	166677	8242	359738
3	CAT	2005	37460	901.21	177542	8345	351496
3	CAT	2006	38551	940.78	188883	8453	343151
3	CAT	2007	39705	982.89	200887	8564	334698
3	CAT	2008	38718	971.6	202089	8679	326134
3	CAT	2009	37871	964	202968	8797	317455
3	CAT	2010	38057	982.07	208533	8921	308658
3	CAT	2011	38867	1015.3	217246	9049	299737
3	CAT	2012	41695	1101.89	236807	9183	290688
3	CAT	2013	48403	1298.25	277804	9322	281504
3	CAT	2014	51115	1394.02	296948	9467	272183
3	CAT	2015	58224	1613.6	341742	9620	262715
3	CAT	2016	60503	1702.97	357536	9779	253096
3	CAT	2017	68390	1958.45	406882	9947	243316
3	CAT	2018	77281	2252.77	463637	10124	233369
3	CAT	2019	85084	2526.57	513856	10311	223245
3	CAT	2020	93667	2835.55	569439	10510	212933
3	CAT	2021	99126	3059.82	607585	10720	202424
3	CAT	2022	107198	3379.21	661342	10946	191703
3	CAT	2023	115049	3707.63	715535	11188	180757
3	CAT	2024	125632	4149.17	786379	11451	169569
3	CAT	2025	131703	4458.74	830966	11735	158118
3	CAT	2026	137914	4794.6	875664	12047	146383
3	CAT	2027	142914	5112.46	913132	12391	134336
3	CAT	2028	147223	5432.51	945080	12777	121945
3	CAT	2029	151140	5769.98	973243	13214	109168
3	CAT	2030	154802	6138.58	1001466	13718	95955
3	CAT	2031	158499	6544.16	1028555	14314	82237
3	CAT	2032	161951	7030.79	1052578	15044	67922
3	CAT	2033	166072	7664.75	1082681	15986	52878
3	CAT	2034	171945	8598.65	1124409	17313	36892
3	CAT	2035	174163	9856.78	1142396	19580	19580
3	DSL	1991	3	0.07	12	7126	458664
3	DSL	1992	3	0.06	11	7200	451538
3	DSL	1993	3	0.07	12	7275	444338
3	DSL	1994	4	0.08	14	7352	437063
3	DSL	1995	6	0.13	24	7431	429711
3	DSL	1996	4	0.08	14	7511	422280
3	DSL	1997	5	0.1	19	7594	414768
3	DSL	1998	4	0.08	15	7679	407174
3	DSL	1999	4	0.09	17	7767	399494

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
3	DSL	2000	5	0.11	21	7856	391727
3	DSL	2001	22	0.5	96	7948	383871
3	DSL	2002	20	0.45	86	8044	375922
3	DSL	2003	25	0.57	110	8141	367879
3	DSL	2004	0	0	0	0	0
3	DSL	2005	0	0	0	0	0
3	DSL	2006	0	0	0	0	0
3	DSL	2007	0	0	0	0	0
3	DSL	2008	0	0	0	0	0
3	DSL	2009	0	0	0	0	0
3	DSL	2010	0	0	0	0	0
3	DSL	2011	0	0	0	0	0
3	DSL	2012	0	0	0	0	0
3	DSL	2013	0	0	0	0	0
3	DSL	2014	0	0	0	0	0
3	DSL	2015	0	0	0	0	0
3	DSL	2016	0	0	0	0	0
3	DSL	2017	0	0	0	0	0
3	DSL	2018	0	0	0	0	0
3	DSL	2019	0	0	0	0	0
3	DSL	2020	0	0	0	0	0
3	DSL	2021	0	0	0	0	0
3	DSL	2022	0	0	0	0	0
3	DSL	2023	0	0	0	0	0
3	DSL	2024	0	0	0	0	0
3	DSL	2025	0	0	0	0	0
3	DSL	2026	0	0	0	0	0
3	DSL	2027	0	0	0	0	0
3	DSL	2028	0	0	0	0	0
3	DSL	2029	0	0	0	0	0
3	DSL	2030	0	0	0	0	0
3	DSL	2031	0	0	0	0	0
3	DSL	2032	0	0	0	0	0
3	DSL	2033	0	0	0	0	0
3	DSL	2034	0	0	0	0	0
3	DSL	2035	0	0	0	0	0
3	ELEC	1991	0	0	0	0	0
3	ELEC	1992	0	0	0	0	0
3	ELEC	1993	0	0	0	0	0
3	ELEC	1994	0	0	0	0	0
3	ELEC	1995	0	0	0	0	0
3	ELEC	1996	0	0	0	0	0
3	ELEC	1997	0	0	0	0	0
3	ELEC	1998	0	0	0	0	0
3	ELEC	1999	0	0	0	0	0
3	ELEC	2000	0	0	0	0	0
3	ELEC	2001	0	0	0	0	0
3	ELEC	2002	0	0	0	0	0
3	ELEC	2003	0	0	0	0	0
3	ELEC	2004	0	0	0	0	0
3	ELEC	2005	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
3	ELEC	2006	0	0	0	0	0
3	ELEC	2007	0	0	0	0	0
3	ELEC	2008	0	0	0	0	0
3	ELEC	2009	0	0	0	0	0
3	ELEC	2010	0	0	0	0	0
3	ELEC	2011	0	0	0	0	0
3	ELEC	2012	0	0	0	0	0
3	ELEC	2013	0	0	0	0	0
3	ELEC	2014	0	0	0	0	0
3	ELEC	2015	0	0	0	0	0
3	ELEC	2016	0	0	0	0	0
3	ELEC	2017	0	0	0	0	0
3	ELEC	2018	0	0	0	0	0
3	ELEC	2019	0	0	0	0	0
3	ELEC	2020	0	0	0	0	0
3	ELEC	2021	0	0	0	0	0
3	ELEC	2022	0	0	0	0	0
3	ELEC	2023	0	0	0	0	0
3	ELEC	2024	0	0	0	0	0
3	ELEC	2025	0	0	0	0	0
3	ELEC	2026	0	0	0	0	0
3	ELEC	2027	0	0	0	0	0
3	ELEC	2028	0	0	0	0	0
3	ELEC	2029	0	0	0	0	0
3	ELEC	2030	0	0	0	0	0
3	ELEC	2031	0	0	0	0	0
3	ELEC	2032	0	0	0	0	0
3	ELEC	2033	0	0	0	0	0
3	ELEC	2034	0	0	0	0	0
3	ELEC	2035	0	0	0	0	0
4	NCAT	1991	0	0	0	0	0
4	NCAT	1992	0	0	0	0	0
4	NCAT	1993	0	0	0	0	0
4	NCAT	1994	0	0	0	0	0
4	NCAT	1995	0	0	0	0	0
4	NCAT	1996	0	0	0	0	0
4	NCAT	1997	0	0	0	0	0
4	NCAT	1998	0	0	0	0	0
4	NCAT	1999	0	0	0	0	0
4	NCAT	2000	0	0	0	0	0
4	NCAT	2001	0	0	0	0	0
4	NCAT	2002	0	0	0	0	0
4	NCAT	2003	0	0	0	0	0
4	NCAT	2004	0	0	0	0	0
4	NCAT	2005	0	0	0	0	0
4	NCAT	2006	0	0	0	0	0
4	NCAT	2007	0	0	0	0	0
4	NCAT	2008	0	0	0	0	0
4	NCAT	2009	0	0	0	0	0
4	NCAT	2010	0	0	0	0	0
4	NCAT	2011	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
4	NCAT	2012	0	0	0	0	0
4	NCAT	2013	0	0	0	0	0
4	NCAT	2014	0	0	0	0	0
4	NCAT	2015	0	0	0	0	0
4	NCAT	2016	0	0	0	0	0
4	NCAT	2017	0	0	0	0	0
4	NCAT	2018	0	0	0	0	0
4	NCAT	2019	0	0	0	0	0
4	NCAT	2020	0	0	0	0	0
4	NCAT	2021	0	0	0	0	0
4	NCAT	2022	0	0	0	0	0
4	NCAT	2023	0	0	0	0	0
4	NCAT	2024	0	0	0	0	0
4	NCAT	2025	0	0	0	0	0
4	NCAT	2026	0	0	0	0	0
4	NCAT	2027	0	0	0	0	0
4	NCAT	2028	0	0	0	0	0
4	NCAT	2029	0	0	0	0	0
4	NCAT	2030	0	0	0	0	0
4	NCAT	2031	0	0	0	0	0
4	NCAT	2032	0	0	0	0	0
4	NCAT	2033	0	0	0	0	0
4	NCAT	2034	0	0	0	0	0
4	NCAT	2035	0	0	0	0	0
4	CAT	1991	941	17.7	3502	6578	446144
4	CAT	1992	1227	23.35	4637	6657	439567
4	CAT	1993	1718	33.12	6596	6738	432910
4	CAT	1994	2715	53.01	10586	6823	426172
4	CAT	1995	3860	76.32	15284	6909	419349
4	CAT	1996	3531	70.75	14195	6996	412440
4	CAT	1997	6626	134.55	27033	7086	405444
4	CAT	1998	6603	135.91	27332	7179	398358
4	CAT	1999	6748	140.6	28340	7274	391179
4	CAT	2000	8289	175.45	35308	7372	383906
4	CAT	2001	12637	271.32	54585	7472	376534
4	CAT	2002	15237	332.26	66731	7575	369062
4	CAT	2003	19174	423.64	85700	7681	361487
4	CAT	2004	23101	518.09	106022	7791	353805
4	CAT	2005	18872	429.12	89443	7904	346015
4	CAT	2006	19580	451.73	95933	8021	338111
4	CAT	2007	20165	472.12	102023	8142	330090
4	CAT	2008	19767	469.87	103173	8266	321949
4	CAT	2009	19203	463.57	102915	8396	313682
4	CAT	2010	18488	453.39	101304	8531	305286
4	CAT	2011	18421	459.43	102963	8669	296755
4	CAT	2012	20552	521.57	116724	8815	288086
4	CAT	2013	23902	617.13	137185	8966	279271
4	CAT	2014	25045	659.46	145500	9125	270305
4	CAT	2015	28239	757.23	165747	9291	261180
4	CAT	2016	29138	794.52	172190	9464	251889
4	CAT	2017	33061	918.98	196692	9647	242425

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
4	CAT	2018	37206	1055.01	223216	9840	232778
4	CAT	2019	41362	1197.19	249801	10043	222939
4	CAT	2020	45913	1357.8	279121	10260	212895
4	CAT	2021	47737	1442.44	292599	10489	202636
4	CAT	2022	51365	1588.53	316888	10734	192147
4	CAT	2023	54331	1721.99	337907	10998	181413
4	CAT	2024	59103	1923.21	369949	11284	170414
4	CAT	2025	61515	2057.18	388123	11594	159130
4	CAT	2026	63949	2201.57	406037	11933	147536
4	CAT	2027	66271	2353.53	423430	12308	135603
4	CAT	2028	68234	2506.27	438018	12727	123295
4	CAT	2029	69984	2667.09	450655	13203	110568
4	CAT	2030	72082	2861.54	466322	13752	97365
4	CAT	2031	73594	3055.25	477580	14401	83613
4	CAT	2032	75248	3296.76	489066	15196	69212
4	CAT	2033	77308	3615.64	503997	16220	54016
4	CAT	2034	80197	4085.41	524436	17664	37797
4	CAT	2035	81570	4736.55	535045	20132	20132
4	DSL	1991	1	0.02	5	6578	446144
4	DSL	1992	1	0.01	2	6657	439567
4	DSL	1993	1	0.02	5	6738	432910
4	DSL	1994	3	0.05	10	6823	426172
4	DSL	1995	6	0.12	24	6909	419349
4	DSL	1996	8	0.16	32	6996	412440
4	DSL	1997	12	0.25	50	7086	405444
4	DSL	1998	9	0.18	38	7179	398358
4	DSL	1999	17	0.34	70	7274	391179
4	DSL	2000	60	1.29	254	7372	383906
4	DSL	2001	76	1.67	330	7472	376534
4	DSL	2002	109	2.41	478	7575	369062
4	DSL	2003	133	2.99	593	7681	361487
4	DSL	2004	0	0	0	0	0
4	DSL	2005	0	0	0	0	0
4	DSL	2006	0	0	0	0	0
4	DSL	2007	0	0	0	0	0
4	DSL	2008	0	0	0	0	0
4	DSL	2009	0	0	0	0	0
4	DSL	2010	0	0	0	0	0
4	DSL	2011	0	0	0	0	0
4	DSL	2012	0	0	0	0	0
4	DSL	2013	0	0	0	0	0
4	DSL	2014	0	0	0	0	0
4	DSL	2015	0	0	0	0	0
4	DSL	2016	0	0	0	0	0
4	DSL	2017	0	0	0	0	0
4	DSL	2018	0	0	0	0	0
4	DSL	2019	0	0	0	0	0
4	DSL	2020	0	0	0	0	0
4	DSL	2021	0	0	0	0	0
4	DSL	2022	0	0	0	0	0
4	DSL	2023	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
4	DSL	2024	0	0	0	0	0
4	DSL	2025	0	0	0	0	0
4	DSL	2026	0	0	0	0	0
4	DSL	2027	0	0	0	0	0
4	DSL	2028	0	0	0	0	0
4	DSL	2029	0	0	0	0	0
4	DSL	2030	0	0	0	0	0
4	DSL	2031	0	0	0	0	0
4	DSL	2032	0	0	0	0	0
4	DSL	2033	0	0	0	0	0
4	DSL	2034	0	0	0	0	0
4	DSL	2035	0	0	0	0	0
4	ELEC	1991	0	0	0	0	0
4	ELEC	1992	0	0	0	0	0
4	ELEC	1993	0	0	0	0	0
4	ELEC	1994	0	0	0	0	0
4	ELEC	1995	0	0	0	0	0
4	ELEC	1996	0	0	0	0	0
4	ELEC	1997	0	0	0	0	0
4	ELEC	1998	0	0	0	0	0
4	ELEC	1999	0	0	0	0	0
4	ELEC	2000	0	0	0	0	0
4	ELEC	2001	0	0	0	0	0
4	ELEC	2002	0	0	0	0	0
4	ELEC	2003	0	0	0	0	0
4	ELEC	2004	0	0	0	0	0
4	ELEC	2005	0	0	0	0	0
4	ELEC	2006	0	0	0	0	0
4	ELEC	2007	0	0	0	0	0
4	ELEC	2008	0	0	0	0	0
4	ELEC	2009	0	0	0	0	0
4	ELEC	2010	0	0	0	0	0
4	ELEC	2011	0	0	0	0	0
4	ELEC	2012	0	0	0	0	0
4	ELEC	2013	0	0	0	0	0
4	ELEC	2014	0	0	0	0	0
4	ELEC	2015	0	0	0	0	0
4	ELEC	2016	0	0	0	0	0
4	ELEC	2017	0	0	0	0	0
4	ELEC	2018	0	0	0	0	0
4	ELEC	2019	0	0	0	0	0
4	ELEC	2020	0	0	0	0	0
4	ELEC	2021	0	0	0	0	0
4	ELEC	2022	0	0	0	0	0
4	ELEC	2023	0	0	0	0	0
4	ELEC	2024	0	0	0	0	0
4	ELEC	2025	0	0	0	0	0
4	ELEC	2026	0	0	0	0	0
4	ELEC	2027	0	0	0	0	0
4	ELEC	2028	0	0	0	0	0
4	ELEC	2029	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
4	ELEC	2030	0	0	0	0	0
4	ELEC	2031	0	0	0	0	0
4	ELEC	2032	0	0	0	0	0
4	ELEC	2033	0	0	0	0	0
4	ELEC	2034	0	0	0	0	0
4	ELEC	2035	0	0	0	0	0
5	NCAT	1991	0	0	0	0	0
5	NCAT	1992	0	0	0	0	0
5	NCAT	1993	0	0	0	0	0
5	NCAT	1994	0	0	0	0	0
5	NCAT	1995	0	0	0	0	0
5	NCAT	1996	0	0	0	0	0
5	NCAT	1997	0	0	0	0	0
5	NCAT	1998	0	0	0	0	0
5	NCAT	1999	0	0	0	0	0
5	NCAT	2000	0	0	0	0	0
5	NCAT	2001	0	0	0	0	0
5	NCAT	2002	0	0	0	0	0
5	NCAT	2003	0	0	0	0	0
5	NCAT	2004	0	0	0	0	0
5	NCAT	2005	0	0	0	0	0
5	NCAT	2006	0	0	0	0	0
5	NCAT	2007	0	0	0	0	0
5	NCAT	2008	0	0	0	0	0
5	NCAT	2009	0	0	0	0	0
5	NCAT	2010	0	0	0	0	0
5	NCAT	2011	0	0	0	0	0
5	NCAT	2012	0	0	0	0	0
5	NCAT	2013	0	0	0	0	0
5	NCAT	2014	0	0	0	0	0
5	NCAT	2015	0	0	0	0	0
5	NCAT	2016	0	0	0	0	0
5	NCAT	2017	0	0	0	0	0
5	NCAT	2018	0	0	0	0	0
5	NCAT	2019	0	0	0	0	0
5	NCAT	2020	0	0	0	0	0
5	NCAT	2021	0	0	0	0	0
5	NCAT	2022	0	0	0	0	0
5	NCAT	2023	0	0	0	0	0
5	NCAT	2024	0	0	0	0	0
5	NCAT	2025	0	0	0	0	0
5	NCAT	2026	0	0	0	0	0
5	NCAT	2027	0	0	0	0	0
5	NCAT	2028	0	0	0	0	0
5	NCAT	2029	0	0	0	0	0
5	NCAT	2030	0	0	0	0	0
5	NCAT	2031	0	0	0	0	0
5	NCAT	2032	0	0	0	0	0
5	NCAT	2033	0	0	0	0	0
5	NCAT	2034	0	0	0	0	0
5	NCAT	2035	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
5	CAT	1991	220	5.23	7264	7594	522950
5	CAT	1992	222	5.35	7357	7690	515356
5	CAT	1993	262	6.38	8657	7788	507666
5	CAT	1994	315	7.79	10420	7890	499878
5	CAT	1995	510	12.75	16868	7993	491988
5	CAT	1996	451	11.38	14916	8099	483994
5	CAT	1997	620	15.87	20514	8208	475896
5	CAT	1998	510	13.23	16875	8320	467687
5	CAT	1999	348	9.12	11496	8435	459367
5	CAT	2000	481	12.74	15910	8553	450932
5	CAT	2001	555	14.86	18353	8674	442379
5	CAT	2002	997	27.05	32951	8798	433706
5	CAT	2003	1708	47.14	56490	8926	424908
5	CAT	2004	1252	34.93	41393	9058	415982
5	CAT	2005	1122	31.81	37085	9195	406924
5	CAT	2006	2512	71.35	83066	9336	397730
5	CAT	2007	2977	85.53	98445	9482	388393
5	CAT	2008	2992	87.14	98931	9633	378912
5	CAT	2009	2948	87.1	97488	9789	369279
5	CAT	2010	2903	87.05	95990	9951	359490
5	CAT	2011	2918	89.09	96500	10119	349539
5	CAT	2012	3093	96.43	102277	10295	339420
5	CAT	2013	3281	104.45	108480	10478	329125
5	CAT	2014	3750	122.08	123985	10669	318647
5	CAT	2015	4102	136.35	135649	10869	307979
5	CAT	2016	3999	135.47	132226	11078	297109
5	CAT	2017	4361	150.25	144192	11299	286031
5	CAT	2018	4888	171.77	161644	11532	274733
5	CAT	2019	5474	196.34	181014	11776	263201
5	CAT	2020	6046	221.41	199918	12037	251424
5	CAT	2021	6331	238.6	209332	12314	239388
5	CAT	2022	6893	266.22	227942	12611	227074
5	CAT	2023	7455	295.01	246509	12930	214463
5	CAT	2024	8090	329.06	267497	13273	201533
5	CAT	2025	8497	355.18	280972	13648	188260
5	CAT	2026	8980	386.49	296935	14057	174612
5	CAT	2027	9350	415.26	309159	14510	160555
5	CAT	2028	9810	450.78	324401	15016	146045
5	CAT	2029	10238	488.44	338540	15589	131029
5	CAT	2030	10437	519.14	345102	16252	115439
5	CAT	2031	10186	532.43	336813	17036	99188
5	CAT	2032	9977	552	329910	17995	82152
5	CAT	2033	9971	590.85	329723	19231	64157
5	CAT	2034	10115	654.48	334469	20973	44926
5	CAT	2035	10206	754.2	337490	23952	23952
5	DSL	1991	1	0.02	12	7594	522950
5	DSL	1992	0	0.01	6	7690	515356
5	DSL	1993	1	0.02	9	7788	507666
5	DSL	1994	1	0.03	13	7890	499878
5	DSL	1995	3	0.06	32	7993	491988
5	DSL	1996	2	0.05	25	8099	483994

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
5	DSL	1997	5	0.13	64	8208	475896
5	DSL	1998	2	0.05	25	8320	467687
5	DSL	1999	8	0.2	99	8435	459367
5	DSL	2000	8	0.22	106	8553	450932
5	DSL	2001	23	0.61	291	8674	442379
5	DSL	2002	142	3.8	1792	8798	433706
5	DSL	2003	330	8.91	4155	8926	424908
5	DSL	2004	1114	30.58	14019	9058	415982
5	DSL	2005	1454	40.49	18287	9195	406924
5	DSL	2006	561	15.94	7062	9336	397730
5	DSL	2007	684	19.66	8610	9482	388393
5	DSL	2008	684	19.91	8600	9633	378912
5	DSL	2009	664	19.6	8348	9789	369279
5	DSL	2010	653	19.58	8214	9951	359490
5	DSL	2011	690	21.07	8682	10119	349539
5	DSL	2012	759	23.66	9546	10295	339420
5	DSL	2013	781	24.86	9824	10478	329125
5	DSL	2014	882	28.72	11097	10669	318647
5	DSL	2015	967	32.14	12163	10869	307979
5	DSL	2016	940	31.85	11827	11078	297109
5	DSL	2017	1030	35.5	12961	11299	286031
5	DSL	2018	1134	39.84	14265	11532	274733
5	DSL	2019	1277	45.81	16067	11776	263201
5	DSL	2020	1359	49.78	17098	12037	251424
5	DSL	2021	1405	52.96	17675	12314	239388
5	DSL	2022	1540	59.48	19374	12611	227074
5	DSL	2023	1676	66.3	21077	12930	214463
5	DSL	2024	1839	74.79	23130	13273	201533
5	DSL	2025	1913	79.96	24064	13648	188260
5	DSL	2026	2009	86.47	25273	14057	174612
5	DSL	2027	2072	92	26058	14510	160555
5	DSL	2028	2169	99.65	27281	15016	146045
5	DSL	2029	2289	109.21	28797	15589	131029
5	DSL	2030	2381	118.41	29947	16252	115439
5	DSL	2031	2317	121.12	29149	17036	99188
5	DSL	2032	2269	125.51	28538	17995	82152
5	DSL	2033	2328	137.91	29278	19231	64157
5	DSL	2034	2358	152.53	29656	20973	44926
5	DSL	2035	2379	175.77	29923	23952	23952
5	ELEC	1991	0	0	0	0	0
5	ELEC	1992	0	0	0	0	0
5	ELEC	1993	0	0	0	0	0
5	ELEC	1994	0	0	0	0	0
5	ELEC	1995	0	0	0	0	0
5	ELEC	1996	0	0	0	0	0
5	ELEC	1997	0	0	0	0	0
5	ELEC	1998	0	0	0	0	0
5	ELEC	1999	0	0	0	0	0
5	ELEC	2000	0	0	0	0	0
5	ELEC	2001	0	0	0	0	0
5	ELEC	2002	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
5	ELEC	2003	0	0	0	0	0
5	ELEC	2004	0	0	0	0	0
5	ELEC	2005	0	0	0	0	0
5	ELEC	2006	0	0	0	0	0
5	ELEC	2007	0	0	0	0	0
5	ELEC	2008	0	0	0	0	0
5	ELEC	2009	0	0	0	0	0
5	ELEC	2010	0	0	0	0	0
5	ELEC	2011	0	0	0	0	0
5	ELEC	2012	0	0	0	0	0
5	ELEC	2013	0	0	0	0	0
5	ELEC	2014	0	0	0	0	0
5	ELEC	2015	0	0	0	0	0
5	ELEC	2016	0	0	0	0	0
5	ELEC	2017	0	0	0	0	0
5	ELEC	2018	0	0	0	0	0
5	ELEC	2019	0	0	0	0	0
5	ELEC	2020	0	0	0	0	0
5	ELEC	2021	0	0	0	0	0
5	ELEC	2022	0	0	0	0	0
5	ELEC	2023	0	0	0	0	0
5	ELEC	2024	0	0	0	0	0
5	ELEC	2025	0	0	0	0	0
5	ELEC	2026	0	0	0	0	0
5	ELEC	2027	0	0	0	0	0
5	ELEC	2028	0	0	0	0	0
5	ELEC	2029	0	0	0	0	0
5	ELEC	2030	0	0	0	0	0
5	ELEC	2031	0	0	0	0	0
5	ELEC	2032	0	0	0	0	0
5	ELEC	2033	0	0	0	0	0
5	ELEC	2034	0	0	0	0	0
5	ELEC	2035	0	0	0	0	0
6	NCAT	1991	0	0	0	0	0
6	NCAT	1992	0	0	0	0	0
6	NCAT	1993	0	0	0	0	0
6	NCAT	1994	0	0	0	0	0
6	NCAT	1995	0	0	0	0	0
6	NCAT	1996	0	0	0	0	0
6	NCAT	1997	0	0	0	0	0
6	NCAT	1998	0	0	0	0	0
6	NCAT	1999	0	0	0	0	0
6	NCAT	2000	0	0	0	0	0
6	NCAT	2001	0	0	0	0	0
6	NCAT	2002	0	0	0	0	0
6	NCAT	2003	0	0	0	0	0
6	NCAT	2004	0	0	0	0	0
6	NCAT	2005	0	0	0	0	0
6	NCAT	2006	0	0	0	0	0
6	NCAT	2007	0	0	0	0	0
6	NCAT	2008	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
6	NCAT	2009	0	0	0	0	0
6	NCAT	2010	0	0	0	0	0
6	NCAT	2011	0	0	0	0	0
6	NCAT	2012	0	0	0	0	0
6	NCAT	2013	0	0	0	0	0
6	NCAT	2014	0	0	0	0	0
6	NCAT	2015	0	0	0	0	0
6	NCAT	2016	0	0	0	0	0
6	NCAT	2017	0	0	0	0	0
6	NCAT	2018	0	0	0	0	0
6	NCAT	2019	0	0	0	0	0
6	NCAT	2020	0	0	0	0	0
6	NCAT	2021	0	0	0	0	0
6	NCAT	2022	0	0	0	0	0
6	NCAT	2023	0	0	0	0	0
6	NCAT	2024	0	0	0	0	0
6	NCAT	2025	0	0	0	0	0
6	NCAT	2026	0	0	0	0	0
6	NCAT	2027	0	0	0	0	0
6	NCAT	2028	0	0	0	0	0
6	NCAT	2029	0	0	0	0	0
6	NCAT	2030	0	0	0	0	0
6	NCAT	2031	0	0	0	0	0
6	NCAT	2032	0	0	0	0	0
6	NCAT	2033	0	0	0	0	0
6	NCAT	2034	0	0	0	0	0
6	NCAT	2035	0	0	0	0	0
6	CAT	1991	7	0.15	230	6931	502186
6	CAT	1992	6	0.13	196	7032	495255
6	CAT	1993	9	0.2	306	7135	488224
6	CAT	1994	16	0.37	534	7241	481089
6	CAT	1995	24	0.54	777	7350	473847
6	CAT	1996	20	0.47	667	7461	466497
6	CAT	1997	26	0.61	857	7576	459036
6	CAT	1998	28	0.66	909	7693	451460
6	CAT	1999	110	2.64	3626	7813	443767
6	CAT	2000	133	3.26	4413	7937	435955
6	CAT	2001	57	1.42	1880	8064	428017
6	CAT	2002	121	3.08	4016	8195	419953
6	CAT	2003	133	3.44	4393	8330	411758
6	CAT	2004	235	6.13	7758	8470	403428
6	CAT	2005	163	4.32	5379	8613	394959
6	CAT	2006	318	8.47	10531	8759	386346
6	CAT	2007	370	9.97	12220	8914	377587
6	CAT	2008	382	10.47	12617	9071	368673
6	CAT	2009	376	10.5	12431	9235	359602
6	CAT	2010	478	13.63	15802	9406	350367
6	CAT	2011	520	15.16	17210	9583	340961
6	CAT	2012	621	18.5	20525	9767	331378
6	CAT	2013	702	21.35	23228	9958	321611
6	CAT	2014	833	25.86	27528	10160	311653

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
6	CAT	2015	929	29.53	30726	10369	301493
6	CAT	2016	963	31.14	31841	10589	291124
6	CAT	2017	1016	33.53	33610	10821	280534
6	CAT	2018	1114	37.56	36821	11065	269714
6	CAT	2019	1246	42.97	41204	11323	258649
6	CAT	2020	1335	47.15	44156	11596	247326
6	CAT	2021	1443	52.49	47708	11888	235730
6	CAT	2022	1589	59.3	52543	12200	223842
6	CAT	2023	1704	65.31	56338	12534	211642
6	CAT	2024	1809	71.4	59821	12895	199108
6	CAT	2025	1856	75.48	61372	13288	186213
6	CAT	2026	1940	81.47	64161	13718	172925
6	CAT	2027	2018	87.65	66726	14193	159208
6	CAT	2028	2122	95.61	70155	14724	145014
6	CAT	2029	2201	103.24	72772	15328	130290
6	CAT	2030	2261	110.84	74757	16023	114962
6	CAT	2031	2212	114.28	73137	16846	98939
6	CAT	2032	2221	121.87	73439	17853	82093
6	CAT	2033	2242	132.24	74149	19150	64240
6	CAT	2034	2360	152.55	78036	20981	45089
6	CAT	2035	2370	176.12	78379	24109	24109
6	DSL	1991	30	0.65	380	6931	502186
6	DSL	1992	38	0.83	483	7032	495255
6	DSL	1993	43	0.94	538	7135	488224
6	DSL	1994	53	1.17	664	7241	481089
6	DSL	1995	75	1.7	948	7350	473847
6	DSL	1996	58	1.32	732	7461	466497
6	DSL	1997	77	1.77	968	7576	459036
6	DSL	1998	45	1.06	566	7693	451460
6	DSL	1999	97	2.3	1216	7813	443767
6	DSL	2000	109	2.62	1373	7937	435955
6	DSL	2001	60	1.46	757	8064	428017
6	DSL	2002	121	2.98	1523	8195	419953
6	DSL	2003	168	4.21	2110	8330	411758
6	DSL	2004	267	6.83	3353	8470	403428
6	DSL	2005	353	9.18	4445	8613	394959
6	DSL	2006	251	6.66	3152	8759	386346
6	DSL	2007	304	8.19	3818	8914	377587
6	DSL	2008	330	9.06	4154	9071	368673
6	DSL	2009	325	9.09	4093	9235	359602
6	DSL	2010	361	10.29	4538	9406	350367
6	DSL	2011	338	9.85	4251	9583	340961
6	DSL	2012	367	10.93	4614	9767	331378
6	DSL	2013	439	13.33	5517	9958	321611
6	DSL	2014	580	18	7290	10160	311653
6	DSL	2015	614	19.52	7729	10369	301493
6	DSL	2016	660	21.35	8307	10589	291124
6	DSL	2017	796	26.25	10011	10821	280534
6	DSL	2018	827	27.88	10398	11065	269714
6	DSL	2019	911	31.41	11459	11323	258649
6	DSL	2020	933	32.96	11742	11596	247326

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
6	DSL	2021	1009	36.71	12694	11888	235730
6	DSL	2022	1089	40.63	13698	12200	223842
6	DSL	2023	1175	45.04	14782	12534	211642
6	DSL	2024	1267	49.99	15934	12895	199108
6	DSL	2025	1324	53.84	16655	13288	186213
6	DSL	2026	1386	58.21	17439	13718	172925
6	DSL	2027	1443	62.68	18152	14193	159208
6	DSL	2028	1520	68.51	19125	14724	145014
6	DSL	2029	1567	73.52	19714	15328	130290
6	DSL	2030	1633	80.07	20544	16023	114962
6	DSL	2031	1639	84.67	20614	16846	98939
6	DSL	2032	1609	88.26	20234	17853	82093
6	DSL	2033	1639	96.63	20614	19150	64240
6	DSL	2034	1710	110.55	21514	20981	45089
6	DSL	2035	1718	127.63	21608	24109	24109
6	ELEC	1991	0	0	0	0	0
6	ELEC	1992	0	0	0	0	0
6	ELEC	1993	0	0	0	0	0
6	ELEC	1994	0	0	0	0	0
6	ELEC	1995	0	0	0	0	0
6	ELEC	1996	0	0	0	0	0
6	ELEC	1997	0	0	0	0	0
6	ELEC	1998	0	0	0	0	0
6	ELEC	1999	0	0	0	0	0
6	ELEC	2000	0	0	0	0	0
6	ELEC	2001	0	0	0	0	0
6	ELEC	2002	0	0	0	0	0
6	ELEC	2003	0	0	0	0	0
6	ELEC	2004	0	0	0	0	0
6	ELEC	2005	0	0	0	0	0
6	ELEC	2006	0	0	0	0	0
6	ELEC	2007	0	0	0	0	0
6	ELEC	2008	0	0	0	0	0
6	ELEC	2009	0	0	0	0	0
6	ELEC	2010	0	0	0	0	0
6	ELEC	2011	0	0	0	0	0
6	ELEC	2012	0	0	0	0	0
6	ELEC	2013	0	0	0	0	0
6	ELEC	2014	0	0	0	0	0
6	ELEC	2015	0	0	0	0	0
6	ELEC	2016	0	0	0	0	0
6	ELEC	2017	0	0	0	0	0
6	ELEC	2018	0	0	0	0	0
6	ELEC	2019	0	0	0	0	0
6	ELEC	2020	0	0	0	0	0
6	ELEC	2021	0	0	0	0	0
6	ELEC	2022	0	0	0	0	0
6	ELEC	2023	0	0	0	0	0
6	ELEC	2024	0	0	0	0	0
6	ELEC	2025	0	0	0	0	0
6	ELEC	2026	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
6	ELEC	2027	0	0	0	0	0
6	ELEC	2028	0	0	0	0	0
6	ELEC	2029	0	0	0	0	0
6	ELEC	2030	0	0	0	0	0
6	ELEC	2031	0	0	0	0	0
6	ELEC	2032	0	0	0	0	0
6	ELEC	2033	0	0	0	0	0
6	ELEC	2034	0	0	0	0	0
6	ELEC	2035	0	0	0	0	0
7	NCAT	1991	0	0	0	0	0
7	NCAT	1992	0	0	0	0	0
7	NCAT	1993	0	0	0	0	0
7	NCAT	1994	0	0	0	0	0
7	NCAT	1995	0	0	0	0	0
7	NCAT	1996	0	0	0	0	0
7	NCAT	1997	0	0	0	0	0
7	NCAT	1998	0	0	0	0	0
7	NCAT	1999	0	0	0	0	0
7	NCAT	2000	0	0	0	0	0
7	NCAT	2001	0	0	0	0	0
7	NCAT	2002	0	0	0	0	0
7	NCAT	2003	0	0	0	0	0
7	NCAT	2004	0	0	0	0	0
7	NCAT	2005	0	0	0	0	0
7	NCAT	2006	0	0	0	0	0
7	NCAT	2007	0	0	0	0	0
7	NCAT	2008	0	0	0	0	0
7	NCAT	2009	0	0	0	0	0
7	NCAT	2010	0	0	0	0	0
7	NCAT	2011	0	0	0	0	0
7	NCAT	2012	0	0	0	0	0
7	NCAT	2013	0	0	0	0	0
7	NCAT	2014	0	0	0	0	0
7	NCAT	2015	0	0	0	0	0
7	NCAT	2016	0	0	0	0	0
7	NCAT	2017	0	0	0	0	0
7	NCAT	2018	0	0	0	0	0
7	NCAT	2019	0	0	0	0	0
7	NCAT	2020	0	0	0	0	0
7	NCAT	2021	0	0	0	0	0
7	NCAT	2022	0	0	0	0	0
7	NCAT	2023	0	0	0	0	0
7	NCAT	2024	0	0	0	0	0
7	NCAT	2025	0	0	0	0	0
7	NCAT	2026	0	0	0	0	0
7	NCAT	2027	0	0	0	0	0
7	NCAT	2028	0	0	0	0	0
7	NCAT	2029	0	0	0	0	0
7	NCAT	2030	0	0	0	0	0
7	NCAT	2031	0	0	0	0	0
7	NCAT	2032	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
7	NCAT	2033	0	0	0	0	0
7	NCAT	2034	0	0	0	0	0
7	NCAT	2035	0	0	0	0	0
7	CAT	1991	30	0.26	1369	2755	439227
7	CAT	1992	25	0.21	1125	2755	436472
7	CAT	1993	24	0.2	1085	2755	433717
7	CAT	1994	24	0.21	1101	2755	430962
7	CAT	1995	47	0.4	2155	2755	428207
7	CAT	1996	39	0.33	1760	2755	425452
7	CAT	1997	61	0.52	2781	2755	422697
7	CAT	1998	46	0.39	2120	2755	419942
7	CAT	1999	109	0.92	4975	2755	417187
7	CAT	2000	124	1.04	5646	2755	414432
7	CAT	2001	134	1.14	6139	2755	411677
7	CAT	2002	101	0.91	4591	2929	408922
7	CAT	2003	139	1.36	6350	3147	405993
7	CAT	2004	149	1.57	6794	3404	402846
7	CAT	2005	111	1.26	5057	3698	399442
7	CAT	2006	246	3.02	11238	4031	395743
7	CAT	2007	282	3.78	12880	4399	391712
7	CAT	2008	283	4.14	12924	4804	387312
7	CAT	2009	293	4.67	13377	5243	382509
7	CAT	2010	328	5.7	14959	5715	377266
7	CAT	2011	347	6.59	15856	6220	371551
7	CAT	2012	391	8.05	17840	6753	365332
7	CAT	2013	447	9.99	20421	7318	358579
7	CAT	2014	517	12.48	23588	7912	351261
7	CAT	2015	600	15.65	27393	8534	343349
7	CAT	2016	600	16.83	27386	9183	334816
7	CAT	2017	650	19.55	29699	9857	325633
7	CAT	2018	732	23.57	33442	10558	315776
7	CAT	2019	809	27.79	36929	11279	305218
7	CAT	2020	879	32.2	40146	12025	293939
7	CAT	2021	940	36.77	42941	12792	281913
7	CAT	2022	1008	41.85	46033	13580	269121
7	CAT	2023	1104	48.58	50438	14387	255542
7	CAT	2024	1184	55.13	54065	15211	241155
7	CAT	2025	1229	60.39	56123	16055	225944
7	CAT	2026	1281	66.32	58510	16911	209889
7	CAT	2027	1332	72.52	60831	17785	192978
7	CAT	2028	1396	79.79	63759	18673	175193
7	CAT	2029	1469	87.97	67076	19573	156520
7	CAT	2030	1494	93.7	68247	20486	136946
7	CAT	2031	1485	97.58	67816	21410	116460
7	CAT	2032	1488	102.1	67934	22342	95050
7	CAT	2033	1486	106.35	67853	23284	72708
7	CAT	2034	1507	112.29	68812	24234	49424
7	CAT	2035	1531	118.61	69909	25190	25190
7	DSL	1991	114	1.23	3188	3523	542121
7	DSL	1992	87	0.94	2430	3523	538598
7	DSL	1993	103	1.12	2891	3523	535076

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
7	DSL	1994	146	1.59	4096	3523	531553
7	DSL	1995	299	3.23	8397	3523	528030
7	DSL	1996	245	2.63	6864	3523	524507
7	DSL	1997	318	3.42	8911	3523	520984
7	DSL	1998	350	3.79	9801	3523	517462
7	DSL	1999	571	6.15	16021	3523	513939
7	DSL	2000	690	7.42	19361	3523	510416
7	DSL	2001	601	6.43	16844	3523	506893
7	DSL	2002	484	5.22	13584	3523	503371
7	DSL	2003	563	6.1	15792	3523	499848
7	DSL	2004	800	8.63	22428	3523	496325
7	DSL	2005	1019	13.54	28567	4366	492802
7	DSL	2006	1009	15.68	28287	5100	488437
7	DSL	2007	1137	19.92	31878	5752	483337
7	DSL	2008	1156	22.34	32428	6346	477585
7	DSL	2009	1154	24.24	32370	6905	471238
7	DSL	2010	1258	28.51	35268	7450	464334
7	DSL	2011	1365	33.28	38271	7995	456884
7	DSL	2012	1540	40.23	43175	8558	448889
7	DSL	2013	1708	47.74	47903	9154	440330
7	DSL	2014	1996	59.69	55970	9790	431177
7	DSL	2015	2260	72.42	63377	10476	421387
7	DSL	2016	2279	78.14	63902	11221	410910
7	DSL	2017	2439	89.43	68389	12025	399690
7	DSL	2018	2664	104.71	74711	12893	387665
7	DSL	2019	2916	122.79	81752	13822	374771
7	DSL	2020	3212	144.92	90074	14811	360949
7	DSL	2021	3421	165.81	95922	15854	346138
7	DSL	2022	3659	189.57	102605	16945	330284
7	DSL	2023	3996	220.78	112059	18071	313339
7	DSL	2024	4312	253.77	120908	19224	295269
7	DSL	2025	4495	280.47	126036	20387	276044
7	DSL	2026	4712	310.73	132112	21546	255657
7	DSL	2027	4941	343.03	138541	22682	234111
7	DSL	2028	5155	375.02	144541	23771	211429
7	DSL	2029	5410	410.42	151697	24792	187659
7	DSL	2030	5571	438.53	156217	25719	162867
7	DSL	2031	5579	454.18	156436	26524	137148
7	DSL	2032	5642	471.05	158198	27179	110624
7	DSL	2033	5718	486.03	160329	27649	83444
7	DSL	2034	5794	497.13	162468	27901	55795
7	DSL	2035	5886	505.06	165057	27894	27894
7	ELEC	1991	0	0	0	0	0
7	ELEC	1992	0	0	0	0	0
7	ELEC	1993	0	0	0	0	0
7	ELEC	1994	0	0	0	0	0
7	ELEC	1995	0	0	0	0	0
7	ELEC	1996	0	0	0	0	0
7	ELEC	1997	0	0	0	0	0
7	ELEC	1998	0	0	0	0	0
7	ELEC	1999	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
7	ELEC	2000	0	0	0	0	0
7	ELEC	2001	0	0	0	0	0
7	ELEC	2002	0	0	0	0	0
7	ELEC	2003	0	0	0	0	0
7	ELEC	2004	0	0	0	0	0
7	ELEC	2005	0	0	0	0	0
7	ELEC	2006	0	0	0	0	0
7	ELEC	2007	0	0	0	0	0
7	ELEC	2008	0	0	0	0	0
7	ELEC	2009	0	0	0	0	0
7	ELEC	2010	0	0	0	0	0
7	ELEC	2011	0	0	0	0	0
7	ELEC	2012	0	0	0	0	0
7	ELEC	2013	0	0	0	0	0
7	ELEC	2014	0	0	0	0	0
7	ELEC	2015	0	0	0	0	0
7	ELEC	2016	0	0	0	0	0
7	ELEC	2017	0	0	0	0	0
7	ELEC	2018	0	0	0	0	0
7	ELEC	2019	0	0	0	0	0
7	ELEC	2020	0	0	0	0	0
7	ELEC	2021	0	0	0	0	0
7	ELEC	2022	0	0	0	0	0
7	ELEC	2023	0	0	0	0	0
7	ELEC	2024	0	0	0	0	0
7	ELEC	2025	0	0	0	0	0
7	ELEC	2026	0	0	0	0	0
7	ELEC	2027	0	0	0	0	0
7	ELEC	2028	0	0	0	0	0
7	ELEC	2029	0	0	0	0	0
7	ELEC	2030	0	0	0	0	0
7	ELEC	2031	0	0	0	0	0
7	ELEC	2032	0	0	0	0	0
7	ELEC	2033	0	0	0	0	0
7	ELEC	2034	0	0	0	0	0
7	ELEC	2035	0	0	0	0	0
8	NCAT	1991	0	0	0	0	0
8	NCAT	1992	0	0	0	0	0
8	NCAT	1993	0	0	0	0	0
8	NCAT	1994	0	0	0	0	0
8	NCAT	1995	0	0	0	0	0
8	NCAT	1996	0	0	0	0	0
8	NCAT	1997	0	0	0	0	0
8	NCAT	1998	0	0	0	0	0
8	NCAT	1999	0	0	0	0	0
8	NCAT	2000	0	0	0	0	0
8	NCAT	2001	0	0	0	0	0
8	NCAT	2002	0	0	0	0	0
8	NCAT	2003	0	0	0	0	0
8	NCAT	2004	0	0	0	0	0
8	NCAT	2005	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
8	NCAT	2006	0	0	0	0	0
8	NCAT	2007	0	0	0	0	0
8	NCAT	2008	0	0	0	0	0
8	NCAT	2009	0	0	0	0	0
8	NCAT	2010	0	0	0	0	0
8	NCAT	2011	0	0	0	0	0
8	NCAT	2012	0	0	0	0	0
8	NCAT	2013	0	0	0	0	0
8	NCAT	2014	0	0	0	0	0
8	NCAT	2015	0	0	0	0	0
8	NCAT	2016	0	0	0	0	0
8	NCAT	2017	0	0	0	0	0
8	NCAT	2018	0	0	0	0	0
8	NCAT	2019	0	0	0	0	0
8	NCAT	2020	0	0	0	0	0
8	NCAT	2021	0	0	0	0	0
8	NCAT	2022	0	0	0	0	0
8	NCAT	2023	0	0	0	0	0
8	NCAT	2024	0	0	0	0	0
8	NCAT	2025	0	0	0	0	0
8	NCAT	2026	0	0	0	0	0
8	NCAT	2027	0	0	0	0	0
8	NCAT	2028	0	0	0	0	0
8	NCAT	2029	0	0	0	0	0
8	NCAT	2030	0	0	0	0	0
8	NCAT	2031	0	0	0	0	0
8	NCAT	2032	0	0	0	0	0
8	NCAT	2033	0	0	0	0	0
8	NCAT	2034	0	0	0	0	0
8	NCAT	2035	0	0	0	0	0
8	CAT	1991	12	0.16	556	4274	1030289
8	CAT	1992	11	0.14	496	4274	1026015
8	CAT	1993	11	0.15	521	4274	1021742
8	CAT	1994	11	0.14	494	4274	1017468
8	CAT	1995	17	0.22	760	4274	1013194
8	CAT	1996	13	0.17	607	4274	1008920
8	CAT	1997	23	0.3	1049	4274	1004647
8	CAT	1998	36	0.47	1633	4274	1000373
8	CAT	1999	39	0.5	1769	4274	996099
8	CAT	2000	44	0.57	2001	4274	991825
8	CAT	2001	65	0.86	2978	4274	987552
8	CAT	2002	31	0.4	1402	4274	983278
8	CAT	2003	24	0.32	1116	4274	979004
8	CAT	2004	36	0.6	1631	5341	974731
8	CAT	2005	38	0.74	1725	6347	969390
8	CAT	2006	6	0.14	291	7308	963042
8	CAT	2007	7	0.17	309	8239	955734
8	CAT	2008	7	0.21	338	9153	947495
8	CAT	2009	8	0.26	379	10066	938342
8	CAT	2010	9	0.32	427	10993	928276
8	CAT	2011	10	0.39	479	11947	917283

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
8	CAT	2012	13	0.5	576	12945	905335
8	CAT	2013	15	0.65	683	14001	892390
8	CAT	2014	19	0.87	848	15127	878389
8	CAT	2015	22	1.1	995	16343	863261
8	CAT	2016	22	1.2	1004	17660	846919
8	CAT	2017	24	1.43	1110	19092	829259
8	CAT	2018	27	1.72	1238	20658	810166
8	CAT	2019	29	2.01	1336	22369	789508
8	CAT	2020	30	2.21	1352	24240	767139
8	CAT	2021	34	2.77	1562	26290	742898
8	CAT	2022	38	3.32	1731	28528	716608
8	CAT	2023	42	3.94	1900	30971	688080
8	CAT	2024	43	4.42	1960	33635	657109
8	CAT	2025	45	5	2041	36535	623474
8	CAT	2026	46	5.53	2080	39682	586939
8	CAT	2027	49	6.51	2254	43093	547258
8	CAT	2028	53	7.57	2414	46785	504165
8	CAT	2029	54	8.47	2489	50768	457380
8	CAT	2030	60	10.16	2754	55063	406611
8	CAT	2031	64	11.65	2925	59680	351548
8	CAT	2032	71	13.89	3224	64634	291868
8	CAT	2033	74	15.81	3393	69942	227234
8	CAT	2034	77	17.74	3522	75617	157292
8	CAT	2035	79	19.64	3611	81675	81675
8	DSL	1991	21	0.29	107	4333	1608926
8	DSL	1992	18	0.24	89	4333	1604593
8	DSL	1993	29	0.38	144	4333	1600260
8	DSL	1994	41	0.55	206	4333	1595927
8	DSL	1995	60	0.81	305	4333	1591594
8	DSL	1996	55	0.74	277	4333	1587261
8	DSL	1997	53	0.71	267	4333	1582928
8	DSL	1998	58	0.78	292	4333	1578595
8	DSL	1999	80	1.07	403	4333	1574262
8	DSL	2000	91	1.23	461	4333	1569929
8	DSL	2001	77	1.04	391	4333	1565596
8	DSL	2002	58	0.94	294	5207	1561264
8	DSL	2003	88	1.73	445	6345	1556057
8	DSL	2004	89	2.13	450	7707	1549712
8	DSL	2005	143	4.1	723	9246	1542005
8	DSL	2006	182	6.18	922	10915	1532759
8	DSL	2007	214	8.38	1081	12667	1521844
8	DSL	2008	259	11.62	1312	14462	1509177
8	DSL	2009	323	16.28	1635	16270	1494715
8	DSL	2010	410	22.92	2072	18071	1478445
8	DSL	2011	540	33.22	2733	19856	1460374
8	DSL	2012	709	47.56	3589	21629	1440518
8	DSL	2013	890	64.61	4502	23410	1418888
8	DSL	2014	1113	87.19	5634	25229	1395478
8	DSL	2015	1423	119.93	7203	27128	1370249
8	DSL	2016	1549	139.67	7838	29160	1343120
8	DSL	2017	1703	165.16	8616	31384	1313961

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
8	DSL	2018	1873	195.98	9479	33864	1282577
8	DSL	2019	2037	230.67	10306	36671	1248713
8	DSL	2020	2187	269.13	11065	39864	1212042
8	DSL	2021	2559	342.99	12948	43502	1172178
8	DSL	2022	2887	422.09	14609	47626	1128676
8	DSL	2023	3171	507.65	16046	52261	1081050
8	DSL	2024	3249	571.83	16440	57403	1028789
8	DSL	2025	3426	661.64	17335	63018	971386
8	DSL	2026	3519	744.39	17808	69030	908368
8	DSL	2027	3631	837.63	18373	75314	839337
8	DSL	2028	3738	935.11	18918	81686	764023
8	DSL	2029	3853	1036.89	19500	87894	682337
8	DSL	2030	3962	1134.92	20050	93604	594444
8	DSL	2031	4038	1208.47	20435	98400	500839
8	DSL	2032	4223	1303.62	21369	101754	402440
8	DSL	2033	4401	1372.21	22271	103034	300685
8	DSL	2034	4641	1423.75	23484	101475	197651
8	DSL	2035	4758	1382.27	24080	96176	96176
8	ELEC	1991	0	0	0	0	0
8	ELEC	1992	0	0	0	0	0
8	ELEC	1993	0	0	0	0	0
8	ELEC	1994	0	0	0	0	0
8	ELEC	1995	0	0	0	0	0
8	ELEC	1996	0	0	0	0	0
8	ELEC	1997	0	0	0	0	0
8	ELEC	1998	0	0	0	0	0
8	ELEC	1999	0	0	0	0	0
8	ELEC	2000	0	0	0	0	0
8	ELEC	2001	0	0	0	0	0
8	ELEC	2002	0	0	0	0	0
8	ELEC	2003	0	0	0	0	0
8	ELEC	2004	0	0	0	0	0
8	ELEC	2005	0	0	0	0	0
8	ELEC	2006	0	0	0	0	0
8	ELEC	2007	0	0	0	0	0
8	ELEC	2008	0	0	0	0	0
8	ELEC	2009	0	0	0	0	0
8	ELEC	2010	0	0	0	0	0
8	ELEC	2011	0	0	0	0	0
8	ELEC	2012	0	0	0	0	0
8	ELEC	2013	0	0	0	0	0
8	ELEC	2014	0	0	0	0	0
8	ELEC	2015	0	0	0	0	0
8	ELEC	2016	0	0	0	0	0
8	ELEC	2017	0	0	0	0	0
8	ELEC	2018	0	0	0	0	0
8	ELEC	2019	0	0	0	0	0
8	ELEC	2020	0	0	0	0	0
8	ELEC	2021	0	0	0	0	0
8	ELEC	2022	0	0	0	0	0
8	ELEC	2023	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
8	ELEC	2024	0	0	0	0	0
8	ELEC	2025	0	0	0	0	0
8	ELEC	2026	0	0	0	0	0
8	ELEC	2027	0	0	0	0	0
8	ELEC	2028	0	0	0	0	0
8	ELEC	2029	0	0	0	0	0
8	ELEC	2030	0	0	0	0	0
8	ELEC	2031	0	0	0	0	0
8	ELEC	2032	0	0	0	0	0
8	ELEC	2033	0	0	0	0	0
8	ELEC	2034	0	0	0	0	0
8	ELEC	2035	0	0	0	0	0
9	NCAT	1991	0	0	0	0	0
9	NCAT	1992	0	0	0	0	0
9	NCAT	1993	0	0	0	0	0
9	NCAT	1994	0	0	0	0	0
9	NCAT	1995	0	0	0	0	0
9	NCAT	1996	0	0	0	0	0
9	NCAT	1997	0	0	0	0	0
9	NCAT	1998	0	0	0	0	0
9	NCAT	1999	0	0	0	0	0
9	NCAT	2000	0	0	0	0	0
9	NCAT	2001	0	0	0	0	0
9	NCAT	2002	0	0	0	0	0
9	NCAT	2003	0	0	0	0	0
9	NCAT	2004	0	0	0	0	0
9	NCAT	2005	0	0	0	0	0
9	NCAT	2006	0	0	0	0	0
9	NCAT	2007	0	0	0	0	0
9	NCAT	2008	0	0	0	0	0
9	NCAT	2009	0	0	0	0	0
9	NCAT	2010	0	0	0	0	0
9	NCAT	2011	0	0	0	0	0
9	NCAT	2012	0	0	0	0	0
9	NCAT	2013	0	0	0	0	0
9	NCAT	2014	0	0	0	0	0
9	NCAT	2015	0	0	0	0	0
9	NCAT	2016	0	0	0	0	0
9	NCAT	2017	0	0	0	0	0
9	NCAT	2018	0	0	0	0	0
9	NCAT	2019	0	0	0	0	0
9	NCAT	2020	0	0	0	0	0
9	NCAT	2021	0	0	0	0	0
9	NCAT	2022	0	0	0	0	0
9	NCAT	2023	0	0	0	0	0
9	NCAT	2024	0	0	0	0	0
9	NCAT	2025	0	0	0	0	0
9	NCAT	2026	0	0	0	0	0
9	NCAT	2027	0	0	0	0	0
9	NCAT	2028	0	0	0	0	0
9	NCAT	2029	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
9	NCAT	2030	0	0	0	0	0
9	NCAT	2031	0	0	0	0	0
9	NCAT	2032	0	0	0	0	0
9	NCAT	2033	0	0	0	0	0
9	NCAT	2034	0	0	0	0	0
9	NCAT	2035	0	0	0	0	0
9	CAT	1991	2	0.02	111	2261	360402
9	CAT	1992	3	0.02	125	2261	358141
9	CAT	1993	3	0.02	147	2261	355880
9	CAT	1994	4	0.03	189	2261	353619
9	CAT	1995	6	0.04	255	2261	351359
9	CAT	1996	5	0.03	207	2261	349098
9	CAT	1997	7	0.05	338	2261	346837
9	CAT	1998	10	0.07	472	2261	344576
9	CAT	1999	32	0.23	1475	2261	342315
9	CAT	2000	34	0.24	1546	2261	340054
9	CAT	2001	49	0.35	2247	2261	337794
9	CAT	2002	40	0.3	1809	2404	335533
9	CAT	2003	63	0.5	2855	2583	333129
9	CAT	2004	82	0.71	3744	2793	330547
9	CAT	2005	85	0.79	3889	3035	327753
9	CAT	2006	22	0.22	1001	3308	324718
9	CAT	2007	25	0.27	1127	3610	321410
9	CAT	2008	27	0.32	1226	3942	317801
9	CAT	2009	30	0.39	1365	4302	313859
9	CAT	2010	33	0.47	1492	4689	309557
9	CAT	2011	35	0.54	1588	5103	304868
9	CAT	2012	38	0.65	1743	5541	299765
9	CAT	2013	41	0.75	1878	6005	294224
9	CAT	2014	43	0.85	1945	6492	288220
9	CAT	2015	45	0.96	2048	7002	281728
9	CAT	2016	47	1.08	2131	7535	274726
9	CAT	2017	49	1.21	2220	8088	267191
9	CAT	2018	54	1.44	2472	8663	259103
9	CAT	2019	61	1.73	2777	9254	250440
9	CAT	2020	67	2.03	3061	9867	241186
9	CAT	2021	73	2.34	3322	10497	231319
9	CAT	2022	78	2.66	3564	11142	220822
9	CAT	2023	85	3.06	3875	11805	209680
9	CAT	2024	89	3.4	4061	12481	197875
9	CAT	2025	93	3.76	4254	13173	185394
9	CAT	2026	97	4.14	4449	13876	172221
9	CAT	2027	100	4.47	4569	14593	158345
9	CAT	2028	104	4.89	4764	15322	143751
9	CAT	2029	107	5.27	4900	16061	128430
9	CAT	2030	109	5.6	4970	16810	112369
9	CAT	2031	114	6.11	5201	17567	95560
9	CAT	2032	123	6.87	5605	18333	77992
9	CAT	2033	126	7.35	5751	19105	59660
9	CAT	2034	129	7.82	5881	19885	40554
9	CAT	2035	130	8.24	5958	20670	20670

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
9	DSL	1991	5	0.04	139	2891	444828
9	DSL	1992	4	0.03	108	2891	441937
9	DSL	1993	3	0.03	97	2891	439046
9	DSL	1994	3	0.03	83	2891	436156
9	DSL	1995	6	0.05	155	2891	433265
9	DSL	1996	7	0.06	203	2891	430375
9	DSL	1997	11	0.1	311	2891	427484
9	DSL	1998	17	0.15	464	2891	424593
9	DSL	1999	14	0.12	384	2891	421703
9	DSL	2000	33	0.29	925	2891	418812
9	DSL	2001	24	0.21	680	2891	415922
9	DSL	2002	16	0.14	449	2891	413031
9	DSL	2003	14	0.13	398	2891	410140
9	DSL	2004	10	0.09	280	2891	407250
9	DSL	2005	12	0.13	332	3582	404359
9	DSL	2006	90	1.15	2519	4184	400777
9	DSL	2007	99	1.43	2788	4720	396592
9	DSL	2008	110	1.74	3075	5207	391873
9	DSL	2009	118	2.03	3303	5666	386666
9	DSL	2010	125	2.34	3517	6113	381000
9	DSL	2011	137	2.74	3833	6560	374887
9	DSL	2012	150	3.23	4219	7022	368327
9	DSL	2013	157	3.61	4406	7511	361305
9	DSL	2014	165	4.04	4614	8034	353793
9	DSL	2015	169	4.44	4737	8596	345760
9	DSL	2016	177	5	4973	9207	337164
9	DSL	2017	182	5.52	5111	9867	327957
9	DSL	2018	197	6.4	5523	10579	318090
9	DSL	2019	219	7.64	6147	11342	307511
9	DSL	2020	245	9.14	6868	12153	296169
9	DSL	2021	265	10.55	7420	13009	284017
9	DSL	2022	283	12.06	7944	13904	271008
9	DSL	2023	307	13.93	8610	14827	257104
9	DSL	2024	324	15.64	9081	15774	242276
9	DSL	2025	341	17.46	9553	16728	226502
9	DSL	2026	358	19.4	10045	17679	209774
9	DSL	2027	371	21.15	10405	18611	192095
9	DSL	2028	385	22.98	10799	19505	173484
9	DSL	2029	395	24.59	11081	20342	153979
9	DSL	2030	406	26.19	11377	21103	133637
9	DSL	2031	428	28.45	11996	21764	112534
9	DSL	2032	465	31.71	13052	22301	90770
9	DSL	2033	485	33.59	13588	22687	68469
9	DSL	2034	495	34.63	13886	22894	45782
9	DSL	2035	502	35.08	14067	22888	22888
9	ELEC	1991	0	0	0	0	0
9	ELEC	1992	0	0	0	0	0
9	ELEC	1993	0	0	0	0	0
9	ELEC	1994	0	0	0	0	0
9	ELEC	1995	0	0	0	0	0
9	ELEC	1996	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
9	ELEC	1997	0	0	0	0	0
9	ELEC	1998	0	0	0	0	0
9	ELEC	1999	0	0	0	0	0
9	ELEC	2000	0	0	0	0	0
9	ELEC	2001	0	0	0	0	0
9	ELEC	2002	0	0	0	0	0
9	ELEC	2003	0	0	0	0	0
9	ELEC	2004	0	0	0	0	0
9	ELEC	2005	0	0	0	0	0
9	ELEC	2006	0	0	0	0	0
9	ELEC	2007	0	0	0	0	0
9	ELEC	2008	0	0	0	0	0
9	ELEC	2009	0	0	0	0	0
9	ELEC	2010	0	0	0	0	0
9	ELEC	2011	0	0	0	0	0
9	ELEC	2012	0	0	0	0	0
9	ELEC	2013	0	0	0	0	0
9	ELEC	2014	0	0	0	0	0
9	ELEC	2015	0	0	0	0	0
9	ELEC	2016	0	0	0	0	0
9	ELEC	2017	0	0	0	0	0
9	ELEC	2018	0	0	0	0	0
9	ELEC	2019	0	0	0	0	0
9	ELEC	2020	0	0	0	0	0
9	ELEC	2021	0	0	0	0	0
9	ELEC	2022	0	0	0	0	0
9	ELEC	2023	0	0	0	0	0
9	ELEC	2024	0	0	0	0	0
9	ELEC	2025	0	0	0	0	0
9	ELEC	2026	0	0	0	0	0
9	ELEC	2027	0	0	0	0	0
9	ELEC	2028	0	0	0	0	0
9	ELEC	2029	0	0	0	0	0
9	ELEC	2030	0	0	0	0	0
9	ELEC	2031	0	0	0	0	0
9	ELEC	2032	0	0	0	0	0
9	ELEC	2033	0	0	0	0	0
9	ELEC	2034	0	0	0	0	0
9	ELEC	2035	0	0	0	0	0
10	NCAT	1991	0	0	0	0	0
10	NCAT	1992	0	0	0	0	0
10	NCAT	1993	0	0	0	0	0
10	NCAT	1994	0	0	0	0	0
10	NCAT	1995	0	0	0	0	0
10	NCAT	1996	0	0	0	0	0
10	NCAT	1997	0	0	0	0	0
10	NCAT	1998	0	0	0	0	0
10	NCAT	1999	0	0	0	0	0
10	NCAT	2000	0	0	0	0	0
10	NCAT	2001	0	0	0	0	0
10	NCAT	2002	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
10	NCAT	2003	0	0	0	0	0
10	NCAT	2004	0	0	0	0	0
10	NCAT	2005	0	0	0	0	0
10	NCAT	2006	0	0	0	0	0
10	NCAT	2007	0	0	0	0	0
10	NCAT	2008	0	0	0	0	0
10	NCAT	2009	0	0	0	0	0
10	NCAT	2010	0	0	0	0	0
10	NCAT	2011	0	0	0	0	0
10	NCAT	2012	0	0	0	0	0
10	NCAT	2013	0	0	0	0	0
10	NCAT	2014	0	0	0	0	0
10	NCAT	2015	0	0	0	0	0
10	NCAT	2016	0	0	0	0	0
10	NCAT	2017	0	0	0	0	0
10	NCAT	2018	0	0	0	0	0
10	NCAT	2019	0	0	0	0	0
10	NCAT	2020	0	0	0	0	0
10	NCAT	2021	0	0	0	0	0
10	NCAT	2022	0	0	0	0	0
10	NCAT	2023	0	0	0	0	0
10	NCAT	2024	0	0	0	0	0
10	NCAT	2025	0	0	0	0	0
10	NCAT	2026	0	0	0	0	0
10	NCAT	2027	0	0	0	0	0
10	NCAT	2028	0	0	0	0	0
10	NCAT	2029	0	0	0	0	0
10	NCAT	2030	0	0	0	0	0
10	NCAT	2031	0	0	0	0	0
10	NCAT	2032	0	0	0	0	0
10	NCAT	2033	0	0	0	0	0
10	NCAT	2034	0	0	0	0	0
10	NCAT	2035	0	0	0	0	0
10	CAT	1991	12	1.32	48	35828	1612272
10	CAT	1992	13	1.46	52	35828	1576444
10	CAT	1993	18	1.95	72	35828	1540615
10	CAT	1994	23	2.58	94	35828	1504787
10	CAT	1995	24	2.64	94	35828	1468959
10	CAT	1996	13	1.52	53	35828	1433130
10	CAT	1997	26	2.93	106	35828	1397302
10	CAT	1998	28	3.05	111	35828	1361474
10	CAT	1999	25	2.8	101	35828	1325646
10	CAT	2000	67	7.25	268	35828	1289817
10	CAT	2001	26	2.92	103	35828	1253989
10	CAT	2002	41	4.49	162	35828	1218161
10	CAT	2003	51	5.58	204	35828	1182333
10	CAT	2004	44	4.89	177	35828	1146504
10	CAT	2005	45	4.98	180	35828	1110676
10	CAT	2006	38	4.25	154	35828	1074848
10	CAT	2007	36	4.01	146	35828	1039020
10	CAT	2008	44	4.86	176	35828	1003191

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
10	CAT	2009	53	5.84	213	35828	967363
10	CAT	2010	50	5.52	201	35828	931535
10	CAT	2011	47	5.16	188	35828	895707
10	CAT	2012	55	6.02	219	35828	859878
10	CAT	2013	59	6.5	237	35828	824050
10	CAT	2014	67	7.3	266	35828	788222
10	CAT	2015	75	8.21	299	35828	752394
10	CAT	2016	79	8.65	316	35828	716565
10	CAT	2017	75	8.21	299	35828	680737
10	CAT	2018	84	9.2	336	35828	644909
10	CAT	2019	94	10.27	375	35828	609080
10	CAT	2020	108	11.9	434	35828	573252
10	CAT	2021	116	12.74	465	35828	537424
10	CAT	2022	108	11.81	431	35828	501596
10	CAT	2023	103	11.31	412	35828	465767
10	CAT	2024	110	12.1	441	35828	429939
10	CAT	2025	119	13.06	476	35828	394111
10	CAT	2026	131	14.35	523	35828	358283
10	CAT	2027	144	15.86	578	35828	322454
10	CAT	2028	158	17.32	631	35828	286626
10	CAT	2029	170	18.71	682	35828	250798
10	CAT	2030	160	17.55	639	35828	214970
10	CAT	2031	175	19.24	701	35828	179141
10	CAT	2032	187	20.48	747	35828	143313
10	CAT	2033	197	21.59	787	35828	107485
10	CAT	2034	210	23.06	841	35828	71657
10	CAT	2035	229	25.08	915	35828	35828
10	DSL	1991	83	9.31	333	35828	1612272
10	DSL	1992	521	56.81	2085	35828	1576444
10	DSL	1993	47	5.13	186	35828	1540615
10	DSL	1994	7	0.82	29	35828	1504787
10	DSL	1995	130	14.21	522	35828	1468959
10	DSL	1996	36	3.95	145	35828	1433130
10	DSL	1997	286	31.21	1145	35828	1397302
10	DSL	1998	95	10.41	382	35828	1361474
10	DSL	1999	78	8.51	312	35828	1325646
10	DSL	2000	100	10.96	400	35828	1289817
10	DSL	2001	197	21.47	788	35828	1253989
10	DSL	2002	133	14.48	531	35828	1218161
10	DSL	2003	85	9.23	338	35828	1182333
10	DSL	2004	101	10.99	402	35828	1146504
10	DSL	2005	32	3.47	127	35828	1110676
10	DSL	2006	57	6.25	227	35828	1074848
10	DSL	2007	53	5.86	212	35828	1039020
10	DSL	2008	56	6.2	225	35828	1003191
10	DSL	2009	61	6.71	244	35828	967363
10	DSL	2010	58	6.35	231	35828	931535
10	DSL	2011	54	5.92	215	35828	895707
10	DSL	2012	60	6.63	241	35828	859878
10	DSL	2013	65	7.1	259	35828	824050
10	DSL	2014	69	7.57	276	35828	788222

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
10	DSL	2015	74	8.1	296	35828	752394
10	DSL	2016	79	8.61	314	35828	716565
10	DSL	2017	74	8.16	297	35828	680737
10	DSL	2018	79	8.66	316	35828	644909
10	DSL	2019	89	9.73	355	35828	609080
10	DSL	2020	98	10.71	391	35828	573252
10	DSL	2021	92	10.14	370	35828	537424
10	DSL	2022	84	9.23	337	35828	501596
10	DSL	2023	77	8.44	307	35828	465767
10	DSL	2024	76	8.35	304	35828	429939
10	DSL	2025	81	8.87	323	35828	394111
10	DSL	2026	82	8.96	327	35828	358283
10	DSL	2027	87	9.56	349	35828	322454
10	DSL	2028	96	10.48	382	35828	286626
10	DSL	2029	99	10.92	398	35828	250798
10	DSL	2030	93	10.24	373	35828	214970
10	DSL	2031	102	11.23	409	35828	179141
10	DSL	2032	110	12.03	439	35828	143313
10	DSL	2033	116	12.69	463	35828	107485
10	DSL	2034	124	13.55	494	35828	71657
10	DSL	2035	134	14.74	538	35828	35828
10	ELEC	1991	0	0	0	0	0
10	ELEC	1992	0	0	0	0	0
10	ELEC	1993	0	0	0	0	0
10	ELEC	1994	0	0	0	0	0
10	ELEC	1995	0	0	0	0	0
10	ELEC	1996	0	0	0	0	0
10	ELEC	1997	0	0	0	0	0
10	ELEC	1998	0	0	0	0	0
10	ELEC	1999	0	0	0	0	0
10	ELEC	2000	0	0	0	0	0
10	ELEC	2001	0	0	0	0	0
10	ELEC	2002	0	0	0	0	0
10	ELEC	2003	0	0	0	0	0
10	ELEC	2004	0	0	0	0	0
10	ELEC	2005	0	0	0	0	0
10	ELEC	2006	0	0	0	0	0
10	ELEC	2007	0	0	0	0	0
10	ELEC	2008	0	0	0	0	0
10	ELEC	2009	0	0	0	0	0
10	ELEC	2010	0	0	0	0	0
10	ELEC	2011	0	0	0	0	0
10	ELEC	2012	0	0	0	0	0
10	ELEC	2013	0	0	0	0	0
10	ELEC	2014	0	0	0	0	0
10	ELEC	2015	0	0	0	0	0
10	ELEC	2016	0	0	0	0	0
10	ELEC	2017	0	0	0	0	0
10	ELEC	2018	0	0	0	0	0
10	ELEC	2019	0	0	0	0	0
10	ELEC	2020	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
10	ELEC	2021	0	0	0	0	0
10	ELEC	2022	0	0	0	0	0
10	ELEC	2023	0	0	0	0	0
10	ELEC	2024	0	0	0	0	0
10	ELEC	2025	0	0	0	0	0
10	ELEC	2026	0	0	0	0	0
10	ELEC	2027	0	0	0	0	0
10	ELEC	2028	0	0	0	0	0
10	ELEC	2029	0	0	0	0	0
10	ELEC	2030	0	0	0	0	0
10	ELEC	2031	0	0	0	0	0
10	ELEC	2032	0	0	0	0	0
10	ELEC	2033	0	0	0	0	0
10	ELEC	2034	0	0	0	0	0
10	ELEC	2035	0	0	0	0	0
11	NCAT	1991	5	0	10	217	57755
11	NCAT	1992	6	0	11	231	57538
11	NCAT	1993	7	0	14	248	57307
11	NCAT	1994	8	0.01	15	264	57058
11	NCAT	1995	7	0.01	13	282	56794
11	NCAT	1996	9	0.01	19	301	56512
11	NCAT	1997	10	0.01	19	321	56211
11	NCAT	1998	12	0.01	24	343	55890
11	NCAT	1999	17	0.02	33	366	55547
11	NCAT	2000	28	0.03	56	392	55180
11	NCAT	2001	41	0.05	81	418	54789
11	NCAT	2002	123	0.16	246	446	54371
11	NCAT	2003	163	0.22	325	476	53925
11	NCAT	2004	144	0.21	287	508	53450
11	NCAT	2005	218	0.34	436	541	52942
11	NCAT	2006	271	0.46	542	580	52401
11	NCAT	2007	339	0.61	678	619	51821
11	NCAT	2008	180	0.35	361	660	51202
11	NCAT	2009	215	0.44	430	705	50542
11	NCAT	2010	267	0.58	535	752	49837
11	NCAT	2011	369	0.86	739	804	49085
11	NCAT	2012	496	1.23	992	857	48281
11	NCAT	2013	617	1.64	1234	915	47425
11	NCAT	2014	756	2.16	1513	978	46509
11	NCAT	2015	952	2.9	1904	1043	45531
11	NCAT	2016	1129	3.66	2257	1115	44488
11	NCAT	2017	1338	4.64	2676	1190	43373
11	NCAT	2018	1652	6.13	3305	1271	42183
11	NCAT	2019	2004	7.93	4008	1356	40913
11	NCAT	2020	2397	10.13	4794	1447	39557
11	NCAT	2021	2665	11.99	5329	1545	38110
11	NCAT	2022	2998	14.34	5995	1650	36565
11	NCAT	2023	3377	17.19	6754	1761	34915
11	NCAT	2024	4014	21.85	8028	1879	33154
11	NCAT	2025	4612	26.8	9223	2007	31274
11	NCAT	2026	5313	32.96	10625	2143	29267

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
11	NCAT	2027	6009	39.78	12017	2287	27124
11	NCAT	2028	6703	47.36	13405	2442	24837
11	NCAT	2029	7382	55.65	14762	2607	22395
11	NCAT	2030	8061	64.87	16121	2783	19788
11	NCAT	2031	8471	72.51	16940	2971	17005
11	NCAT	2032	8771	79.79	17539	3172	14033
11	NCAT	2033	9116	88.13	18230	3387	10862
11	NCAT	2034	9808	101.03	19614	3615	7475
11	NCAT	2035	9848	108.22	19694	3860	3860
11	CAT	1991	0	0	0	0	0
11	CAT	1992	0	0	0	0	0
11	CAT	1993	0	0	0	0	0
11	CAT	1994	0	0	0	264	57058
11	CAT	1995	2	0	4	282	56794
11	CAT	1996	3	0	5	301	56512
11	CAT	1997	3	0	5	321	56211
11	CAT	1998	3	0	7	343	55890
11	CAT	1999	5	0	9	366	55547
11	CAT	2000	8	0.01	16	392	55180
11	CAT	2001	11	0.01	23	418	54789
11	CAT	2002	35	0.04	69	446	54371
11	CAT	2003	46	0.06	92	476	53925
11	CAT	2004	32	0.05	63	508	53450
11	CAT	2005	48	0.08	96	541	52942
11	CAT	2006	59	0.1	119	580	52401
11	CAT	2007	74	0.13	149	619	51821
11	CAT	2008	370	0.71	739	660	51202
11	CAT	2009	440	0.9	880	705	50542
11	CAT	2010	548	1.2	1096	752	49837
11	CAT	2011	757	1.77	1513	804	49085
11	CAT	2012	1016	2.53	2032	857	48281
11	CAT	2013	1264	3.36	2528	915	47425
11	CAT	2014	1550	4.42	3099	978	46509
11	CAT	2015	1951	5.94	3901	1043	45531
11	CAT	2016	2312	7.51	4624	1115	44488
11	CAT	2017	2742	9.51	5483	1190	43373
11	CAT	2018	3386	12.55	6770	1271	42183
11	CAT	2019	4107	16.25	8212	1356	40913
11	CAT	2020	4911	20.75	9821	1447	39557
11	CAT	2021	5460	24.56	10918	1545	38110
11	CAT	2022	6142	29.39	12283	1650	36565
11	CAT	2023	6920	35.23	13838	1761	34915
11	CAT	2024	8225	44.76	16448	1879	33154
11	CAT	2025	9448	54.9	18895	2007	31274
11	CAT	2026	10885	67.53	21768	2143	29267
11	CAT	2027	12312	81.5	24621	2287	27124
11	CAT	2028	13734	97.03	27465	2442	24837
11	CAT	2029	15124	114.02	30245	2607	22395
11	CAT	2030	16515	132.91	33027	2783	19788
11	CAT	2031	17354	148.57	34705	2971	17005
11	CAT	2032	17969	163.48	35934	3172	14033

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
11	CAT	2033	18677	180.56	37350	3387	10862
11	CAT	2034	20094	207	40185	3615	7475
11	CAT	2035	20177	221.71	40349	3860	3860
11	DSL	1991	0	0	0	0	0
11	DSL	1992	0	0	0	0	0
11	DSL	1993	0	0	0	0	0
11	DSL	1994	0	0	0	0	0
11	DSL	1995	0	0	0	0	0
11	DSL	1996	0	0	0	0	0
11	DSL	1997	0	0	0	0	0
11	DSL	1998	0	0	0	0	0
11	DSL	1999	0	0	0	0	0
11	DSL	2000	0	0	0	0	0
11	DSL	2001	0	0	0	0	0
11	DSL	2002	0	0	0	0	0
11	DSL	2003	0	0	0	0	0
11	DSL	2004	0	0	0	0	0
11	DSL	2005	0	0	0	0	0
11	DSL	2006	0	0	0	0	0
11	DSL	2007	0	0	0	0	0
11	DSL	2008	0	0	0	0	0
11	DSL	2009	0	0	0	0	0
11	DSL	2010	0	0	0	0	0
11	DSL	2011	0	0	0	0	0
11	DSL	2012	0	0	0	0	0
11	DSL	2013	0	0	0	0	0
11	DSL	2014	0	0	0	0	0
11	DSL	2015	0	0	0	0	0
11	DSL	2016	0	0	0	0	0
11	DSL	2017	0	0	0	0	0
11	DSL	2018	0	0	0	0	0
11	DSL	2019	0	0	0	0	0
11	DSL	2020	0	0	0	0	0
11	DSL	2021	0	0	0	0	0
11	DSL	2022	0	0	0	0	0
11	DSL	2023	0	0	0	0	0
11	DSL	2024	0	0	0	0	0
11	DSL	2025	0	0	0	0	0
11	DSL	2026	0	0	0	0	0
11	DSL	2027	0	0	0	0	0
11	DSL	2028	0	0	0	0	0
11	DSL	2029	0	0	0	0	0
11	DSL	2030	0	0	0	0	0
11	DSL	2031	0	0	0	0	0
11	DSL	2032	0	0	0	0	0
11	DSL	2033	0	0	0	0	0
11	DSL	2034	0	0	0	0	0
11	DSL	2035	0	0	0	0	0
11	ELEC	1991	0	0	0	0	0
11	ELEC	1992	0	0	0	0	0
11	ELEC	1993	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
11	ELEC	1994	0	0	0	0	0
11	ELEC	1995	0	0	0	0	0
11	ELEC	1996	0	0	0	0	0
11	ELEC	1997	0	0	0	0	0
11	ELEC	1998	0	0	0	0	0
11	ELEC	1999	0	0	0	0	0
11	ELEC	2000	0	0	0	0	0
11	ELEC	2001	0	0	0	0	0
11	ELEC	2002	0	0	0	0	0
11	ELEC	2003	0	0	0	0	0
11	ELEC	2004	0	0	0	0	0
11	ELEC	2005	0	0	0	0	0
11	ELEC	2006	0	0	0	0	0
11	ELEC	2007	0	0	0	0	0
11	ELEC	2008	0	0	0	0	0
11	ELEC	2009	0	0	0	0	0
11	ELEC	2010	0	0	0	0	0
11	ELEC	2011	0	0	0	0	0
11	ELEC	2012	0	0	0	0	0
11	ELEC	2013	0	0	0	0	0
11	ELEC	2014	0	0	0	0	0
11	ELEC	2015	0	0	0	0	0
11	ELEC	2016	0	0	0	0	0
11	ELEC	2017	0	0	0	0	0
11	ELEC	2018	0	0	0	0	0
11	ELEC	2019	0	0	0	0	0
11	ELEC	2020	0	0	0	0	0
11	ELEC	2021	0	0	0	0	0
11	ELEC	2022	0	0	0	0	0
11	ELEC	2023	0	0	0	0	0
11	ELEC	2024	0	0	0	0	0
11	ELEC	2025	0	0	0	0	0
11	ELEC	2026	0	0	0	0	0
11	ELEC	2027	0	0	0	0	0
11	ELEC	2028	0	0	0	0	0
11	ELEC	2029	0	0	0	0	0
11	ELEC	2030	0	0	0	0	0
11	ELEC	2031	0	0	0	0	0
11	ELEC	2032	0	0	0	0	0
11	ELEC	2033	0	0	0	0	0
11	ELEC	2034	0	0	0	0	0
11	ELEC	2035	0	0	0	0	0
12	NCAT	1991	0	0	0	0	0
12	NCAT	1992	0	0	0	0	0
12	NCAT	1993	0	0	0	0	0
12	NCAT	1994	0	0	0	0	0
12	NCAT	1995	0	0	0	0	0
12	NCAT	1996	0	0	0	0	0
12	NCAT	1997	0	0	0	0	0
12	NCAT	1998	0	0	0	0	0
12	NCAT	1999	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
12	NCAT	2000	0	0	0	0	0
12	NCAT	2001	0	0	0	0	0
12	NCAT	2002	0	0	0	0	0
12	NCAT	2003	0	0	0	0	0
12	NCAT	2004	0	0	0	0	0
12	NCAT	2005	0	0	0	0	0
12	NCAT	2006	0	0	0	0	0
12	NCAT	2007	0	0	0	0	0
12	NCAT	2008	0	0	0	0	0
12	NCAT	2009	0	0	0	0	0
12	NCAT	2010	0	0	0	0	0
12	NCAT	2011	0	0	0	0	0
12	NCAT	2012	0	0	0	0	0
12	NCAT	2013	0	0	0	0	0
12	NCAT	2014	0	0	0	0	0
12	NCAT	2015	0	0	0	0	0
12	NCAT	2016	0	0	0	0	0
12	NCAT	2017	0	0	0	0	0
12	NCAT	2018	0	0	0	0	0
12	NCAT	2019	0	0	0	0	0
12	NCAT	2020	0	0	0	0	0
12	NCAT	2021	0	0	0	0	0
12	NCAT	2022	0	0	0	0	0
12	NCAT	2023	0	0	0	0	0
12	NCAT	2024	0	0	0	0	0
12	NCAT	2025	0	0	0	0	0
12	NCAT	2026	0	0	0	0	0
12	NCAT	2027	0	0	0	0	0
12	NCAT	2028	0	0	0	0	0
12	NCAT	2029	0	0	0	0	0
12	NCAT	2030	0	0	0	0	0
12	NCAT	2031	0	0	0	0	0
12	NCAT	2032	0	0	0	0	0
12	NCAT	2033	0	0	0	0	0
12	NCAT	2034	0	0	0	0	0
12	NCAT	2035	0	0	0	0	0
12	CAT	1991	22	0.81	87	12240	550784
12	CAT	1992	19	0.68	74	12240	538545
12	CAT	1993	9	0.34	37	12240	526305
12	CAT	1994	12	0.44	48	12240	514065
12	CAT	1995	16	0.6	65	12240	501826
12	CAT	1996	7	0.25	27	12240	489586
12	CAT	1997	4	0.16	18	12240	477346
12	CAT	1998	8	0.31	34	12240	465107
12	CAT	1999	27	1	109	12240	452867
12	CAT	2000	19	0.7	75	12240	440628
12	CAT	2001	70	2.57	278	12240	428388
12	CAT	2002	35	1.3	140	12240	416148
12	CAT	2003	25	0.93	100	12240	403909
12	CAT	2004	66	2.47	266	12240	391669
12	CAT	2005	20	0.72	78	12240	379429

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
12	CAT	2006	14	0.56	58	12240	367190
12	CAT	2007	15	0.58	60	12240	354950
12	CAT	2008	15	0.57	59	12240	342710
12	CAT	2009	15	0.57	59	12240	330471
12	CAT	2010	16	0.6	62	12240	318231
12	CAT	2011	16	0.63	65	12240	305991
12	CAT	2012	18	0.68	72	12240	293752
12	CAT	2013	20	0.76	80	12240	281512
12	CAT	2014	21	0.79	83	12240	269272
12	CAT	2015	22	0.84	89	12240	257033
12	CAT	2016	24	0.89	94	12240	244793
12	CAT	2017	25	0.95	101	12240	232553
12	CAT	2018	27	1	106	12240	220314
12	CAT	2019	29	1.12	118	12240	208074
12	CAT	2020	28	1.07	113	12240	195834
12	CAT	2021	30	1.12	119	12240	183595
12	CAT	2022	32	1.22	130	12240	171355
12	CAT	2023	36	1.36	145	12240	159116
12	CAT	2024	39	1.46	155	12240	146876
12	CAT	2025	39	1.47	157	12240	134636
12	CAT	2026	41	1.54	164	12240	122397
12	CAT	2027	44	1.64	174	12240	110157
12	CAT	2028	44	1.67	178	12240	97917
12	CAT	2029	48	1.8	192	12240	85678
12	CAT	2030	50	1.86	198	12240	73438
12	CAT	2031	53	2	213	12240	61198
12	CAT	2032	58	2.17	231	12240	48959
12	CAT	2033	62	2.34	250	12240	36719
12	CAT	2034	68	2.54	271	12240	24479
12	CAT	2035	73	2.75	293	12240	12240
12	DSL	1991	284	10.47	1135	12240	550784
12	DSL	1992	175	6.47	701	12240	538545
12	DSL	1993	260	9.6	1040	12240	526305
12	DSL	1994	306	11.32	1224	12240	514065
12	DSL	1995	441	16.29	1765	12240	501826
12	DSL	1996	290	10.71	1161	12240	489586
12	DSL	1997	336	12.39	1344	12240	477346
12	DSL	1998	410	15.18	1639	12240	465107
12	DSL	1999	467	17.24	1868	12240	452867
12	DSL	2000	501	18.52	2002	12240	440628
12	DSL	2001	360	13.31	1441	12240	428388
12	DSL	2002	458	17.18	1833	12240	416148
12	DSL	2003	323	11.99	1291	12240	403909
12	DSL	2004	312	11.56	1249	12240	391669
12	DSL	2005	167	6.5	668	12240	379429
12	DSL	2006	169	6.53	676	12240	367190
12	DSL	2007	159	6.16	638	12240	354950
12	DSL	2008	147	5.69	589	12240	342710
12	DSL	2009	140	5.42	561	12240	330471
12	DSL	2010	144	5.54	576	12240	318231
12	DSL	2011	150	5.75	601	12240	305991

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
12	DSL	2012	154	5.89	618	12240	293752
12	DSL	2013	162	6.16	650	12240	281512
12	DSL	2014	159	6.01	636	12240	269272
12	DSL	2015	164	6.2	657	12240	257033
12	DSL	2016	161	6.09	645	12240	244793
12	DSL	2017	167	6.33	669	12240	232553
12	DSL	2018	172	6.51	688	12240	220314
12	DSL	2019	188	7.12	753	12240	208074
12	DSL	2020	179	6.78	716	12240	195834
12	DSL	2021	189	7.1	754	12240	183595
12	DSL	2022	203	7.63	813	12240	171355
12	DSL	2023	223	8.35	891	12240	159116
12	DSL	2024	236	8.86	946	12240	146876
12	DSL	2025	238	8.94	953	12240	134636
12	DSL	2026	251	9.42	1003	12240	122397
12	DSL	2027	267	10.03	1068	12240	110157
12	DSL	2028	271	10.16	1083	12240	97917
12	DSL	2029	292	10.94	1168	12240	85678
12	DSL	2030	305	11.43	1219	12240	73438
12	DSL	2031	327	12.28	1309	12240	61198
12	DSL	2032	355	13.34	1421	12240	48959
12	DSL	2033	384	14.4	1535	12240	36719
12	DSL	2034	418	15.71	1674	12240	24479
12	DSL	2035	452	16.96	1807	12240	12240
12	ELEC	1991	0	0	0	0	0
12	ELEC	1992	0	0	0	0	0
12	ELEC	1993	0	0	0	0	0
12	ELEC	1994	0	0	0	0	0
12	ELEC	1995	0	0	0	0	0
12	ELEC	1996	0	0	0	0	0
12	ELEC	1997	0	0	0	0	0
12	ELEC	1998	0	0	0	0	0
12	ELEC	1999	0	0	0	0	0
12	ELEC	2000	0	0	0	0	0
12	ELEC	2001	0	0	0	0	0
12	ELEC	2002	0	0	0	0	0
12	ELEC	2003	0	0	0	0	0
12	ELEC	2004	0	0	0	0	0
12	ELEC	2005	0	0	0	0	0
12	ELEC	2006	0	0	0	0	0
12	ELEC	2007	0	0	0	0	0
12	ELEC	2008	0	0	0	0	0
12	ELEC	2009	0	0	0	0	0
12	ELEC	2010	0	0	0	0	0
12	ELEC	2011	0	0	0	0	0
12	ELEC	2012	0	0	0	0	0
12	ELEC	2013	0	0	0	0	0
12	ELEC	2014	0	0	0	0	0
12	ELEC	2015	0	0	0	0	0
12	ELEC	2016	0	0	0	0	0
12	ELEC	2017	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
12	ELEC	2018	0	0	0	0	0
12	ELEC	2019	0	0	0	0	0
12	ELEC	2020	0	0	0	0	0
12	ELEC	2021	0	0	0	0	0
12	ELEC	2022	0	0	0	0	0
12	ELEC	2023	0	0	0	0	0
12	ELEC	2024	0	0	0	0	0
12	ELEC	2025	0	0	0	0	0
12	ELEC	2026	0	0	0	0	0
12	ELEC	2027	0	0	0	0	0
12	ELEC	2028	0	0	0	0	0
12	ELEC	2029	0	0	0	0	0
12	ELEC	2030	0	0	0	0	0
12	ELEC	2031	0	0	0	0	0
12	ELEC	2032	0	0	0	0	0
12	ELEC	2033	0	0	0	0	0
12	ELEC	2034	0	0	0	0	0
12	ELEC	2035	0	0	0	0	0
13	NCAT	1991	0	0	0	0	0
13	NCAT	1992	0	0	0	0	0
13	NCAT	1993	0	0	0	0	0
13	NCAT	1994	0	0	0	0	0
13	NCAT	1995	0	0	0	0	0
13	NCAT	1996	0	0	0	0	0
13	NCAT	1997	0	0	0	0	0
13	NCAT	1998	0	0	0	0	0
13	NCAT	1999	0	0	0	0	0
13	NCAT	2000	0	0	0	0	0
13	NCAT	2001	0	0	0	0	0
13	NCAT	2002	0	0	0	0	0
13	NCAT	2003	0	0	0	0	0
13	NCAT	2004	0	0	0	0	0
13	NCAT	2005	0	0	0	0	0
13	NCAT	2006	0	0	0	0	0
13	NCAT	2007	0	0	0	0	0
13	NCAT	2008	0	0	0	0	0
13	NCAT	2009	0	0	0	0	0
13	NCAT	2010	0	0	0	0	0
13	NCAT	2011	0	0	0	0	0
13	NCAT	2012	0	0	0	0	0
13	NCAT	2013	0	0	0	0	0
13	NCAT	2014	0	0	0	0	0
13	NCAT	2015	0	0	0	0	0
13	NCAT	2016	0	0	0	0	0
13	NCAT	2017	0	0	0	0	0
13	NCAT	2018	0	0	0	0	0
13	NCAT	2019	0	0	0	0	0
13	NCAT	2020	0	0	0	0	0
13	NCAT	2021	0	0	0	0	0
13	NCAT	2022	0	0	0	0	0
13	NCAT	2023	0	0	0	0	0

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
13	NCAT	2024	0	0	0	0	0
13	NCAT	2025	0	0	0	0	0
13	NCAT	2026	0	0	0	0	0
13	NCAT	2027	0	0	0	0	0
13	NCAT	2028	0	0	0	0	0
13	NCAT	2029	0	0	0	0	0
13	NCAT	2030	0	0	0	0	0
13	NCAT	2031	0	0	0	0	0
13	NCAT	2032	0	0	0	0	0
13	NCAT	2033	0	0	0	0	0
13	NCAT	2034	0	0	0	0	0
13	NCAT	2035	0	0	0	0	0
13	CAT	1991	45	0.39	5	2810	153136
13	CAT	1992	58	0.5	6	2824	150326
13	CAT	1993	47	0.41	5	2839	147502
13	CAT	1994	77	0.67	8	2854	144663
13	CAT	1995	107	0.94	11	2869	141809
13	CAT	1996	137	1.21	14	2885	138940
13	CAT	1997	155	1.38	16	2901	136055
13	CAT	1998	171	1.52	17	2917	133154
13	CAT	1999	304	2.73	30	2934	130237
13	CAT	2000	380	3.43	38	2951	127303
13	CAT	2001	329	2.99	33	2969	124352
13	CAT	2002	425	3.88	42	2987	121383
13	CAT	2003	642	5.9	64	3006	118396
13	CAT	2004	1014	9.39	101	3026	115390
13	CAT	2005	1023	9.54	102	3046	112364
13	CAT	2006	1418	13.31	142	3067	109318
13	CAT	2007	1644	15.54	164	3088	106251
13	CAT	2008	1846	17.57	185	3110	103163
13	CAT	2009	1914	18.36	192	3133	100053
13	CAT	2010	2059	19.9	206	3157	96920
13	CAT	2011	2092	20.38	209	3182	93763
13	CAT	2012	2299	22.57	230	3208	90581
13	CAT	2013	2694	26.68	270	3235	87373
13	CAT	2014	2852	28.49	285	3263	84138
13	CAT	2015	3031	30.54	303	3292	80875
13	CAT	2016	3211	32.66	321	3323	77583
13	CAT	2017	3459	35.53	346	3356	74260
13	CAT	2018	3706	38.46	371	3390	70904
13	CAT	2019	3871	40.59	387	3426	67514
13	CAT	2020	4006	42.48	401	3464	64088
13	CAT	2021	4495	48.22	450	3505	60624
13	CAT	2022	5073	55.1	507	3549	57119
13	CAT	2023	5700	62.73	570	3596	53570
13	CAT	2024	6176	68.92	618	3646	49974
13	CAT	2025	6551	74.21	655	3701	46328
13	CAT	2026	6982	80.4	698	3762	42627
13	CAT	2027	7416	86.89	742	3828	38865
13	CAT	2028	7839	93.65	784	3903	35037
13	CAT	2029	8304	101.34	831	3987	31134

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
13	CAT	2030	8691	108.67	869	4085	27147
13	CAT	2031	9601	123.43	961	4200	23062
13	CAT	2032	10637	141.34	1064	4341	18862
13	CAT	2033	11888	164.58	1189	4523	14521
13	CAT	2034	13410	196.2	1342	4780	9998
13	CAT	2035	14654	234.05	1466	5218	5218
13	DSL	1991	7	0.06	1	2810	153136
13	DSL	1992	13	0.12	1	2824	150326
13	DSL	1993	23	0.2	2	2839	147502
13	DSL	1994	35	0.31	3	2854	144663
13	DSL	1995	29	0.26	3	2869	141809
13	DSL	1996	37	0.33	4	2885	138940
13	DSL	1997	40	0.36	4	2901	136055
13	DSL	1998	62	0.56	6	2917	133154
13	DSL	1999	98	0.88	10	2934	130237
13	DSL	2000	139	1.25	14	2951	127303
13	DSL	2001	119	1.08	12	2969	124352
13	DSL	2002	149	1.37	15	2987	121383
13	DSL	2003	181	1.67	18	3006	118396
13	DSL	2004	240	2.22	24	3026	115390
13	DSL	2005	267	2.49	27	3046	112364
13	DSL	2006	114	1.07	11	3067	109318
13	DSL	2007	137	1.29	14	3088	106251
13	DSL	2008	189	1.79	19	3110	103163
13	DSL	2009	223	2.13	22	3133	100053
13	DSL	2010	236	2.28	24	3157	96920
13	DSL	2011	238	2.32	24	3182	93763
13	DSL	2012	258	2.54	26	3208	90581
13	DSL	2013	281	2.78	28	3235	87373
13	DSL	2014	319	3.19	32	3263	84138
13	DSL	2015	329	3.31	33	3292	80875
13	DSL	2016	357	3.63	36	3323	77583
13	DSL	2017	361	3.71	36	3356	74260
13	DSL	2018	366	3.8	37	3390	70904
13	DSL	2019	393	4.12	39	3426	67514
13	DSL	2020	394	4.17	39	3464	64088
13	DSL	2021	453	4.86	45	3505	60624
13	DSL	2022	514	5.59	51	3549	57119
13	DSL	2023	568	6.25	57	3596	53570
13	DSL	2024	597	6.66	60	3646	49974
13	DSL	2025	621	7.03	62	3701	46328
13	DSL	2026	661	7.61	66	3762	42627
13	DSL	2027	685	8.03	68	3828	38865
13	DSL	2028	723	8.64	72	3903	35037
13	DSL	2029	758	9.25	76	3987	31134
13	DSL	2030	777	9.71	78	4085	27147
13	DSL	2031	847	10.89	85	4200	23062
13	DSL	2032	918	12.19	92	4341	18862
13	DSL	2033	995	13.77	99	4523	14521
13	DSL	2034	1083	15.85	108	4780	9998
13	DSL	2035	1184	18.9	118	5218	5218

Table F.2-1B. 2035 Calendar Year EMFAC Burden Run for Model Years 1991 to 2035

Vehicle Class	Vehicle Technology	Model Year	Population (number)	VMT/1000 (mi/day)	Trips (per/day)	Accrual (mi/vehicle/year)	Odometer (mi/vehicle)
13	ELEC	1991	0	0	0	0	0
13	ELEC	1992	0	0	0	0	0
13	ELEC	1993	0	0	0	0	0
13	ELEC	1994	0	0	0	0	0
13	ELEC	1995	0	0	0	0	0
13	ELEC	1996	0	0	0	0	0
13	ELEC	1997	0	0	0	0	0
13	ELEC	1998	0	0	0	0	0
13	ELEC	1999	0	0	0	0	0
13	ELEC	2000	0	0	0	0	0
13	ELEC	2001	0	0	0	0	0
13	ELEC	2002	0	0	0	0	0
13	ELEC	2003	0	0	0	0	0
13	ELEC	2004	0	0	0	0	0
13	ELEC	2005	0	0	0	0	0
13	ELEC	2006	0	0	0	0	0
13	ELEC	2007	0	0	0	0	0
13	ELEC	2008	0	0	0	0	0
13	ELEC	2009	0	0	0	0	0
13	ELEC	2010	0	0	0	0	0
13	ELEC	2011	0	0	0	0	0
13	ELEC	2012	0	0	0	0	0
13	ELEC	2013	0	0	0	0	0
13	ELEC	2014	0	0	0	0	0
13	ELEC	2015	0	0	0	0	0
13	ELEC	2016	0	0	0	0	0
13	ELEC	2017	0	0	0	0	0
13	ELEC	2018	0	0	0	0	0
13	ELEC	2019	0	0	0	0	0
13	ELEC	2020	0	0	0	0	0
13	ELEC	2021	0	0	0	0	0
13	ELEC	2022	0	0	0	0	0
13	ELEC	2023	0	0	0	0	0
13	ELEC	2024	0	0	0	0	0
13	ELEC	2025	0	0	0	0	0
13	ELEC	2026	0	0	0	0	0
13	ELEC	2027	0	0	0	0	0
13	ELEC	2028	0	0	0	0	0
13	ELEC	2029	0	0	0	0	0
13	ELEC	2030	0	0	0	0	0
13	ELEC	2031	0	0	0	0	0
13	ELEC	2032	0	0	0	0	0
13	ELEC	2033	0	0	0	0	0
13	ELEC	2034	0	0	0	0	0
13	ELEC	2035	0	0	0	0	0

Note:

The EMFAC2007 burden run was done for the South Coast Air Basin and using the annual average option.

Table F.2-1C. Fleet Characteristics for Scenario Year 2035 (Model Years 1965-2008)

Vehicle Class:	LDA	LDA	LDA	LDA	LDT1	LDT1	LDT1	LDT1	LDT2	LDT2	LDT2	LDT2
Fuel Type:	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
VMT fraction	0	0.47	0	0.47	0	0.079	0	0.079	0	0.242	0	0.242
Trip fraction	0	0.454	0	0.454	0	0.069	0	0.069	0	0.213	0	0.213
Vehicle fraction	0	0.495	0	0.495	0	0.076	0	0.076	0	0.236	0	0.236

Vehicle Class:	MDV	MDV	MDV	MDV	LHD1	LHD1	LHD1	LHD1	LHD2	LHD2	LHD2	LHD2
Fuel Type:	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
VMT fraction	0	0.114	0	0.114	0	0.019	0.004	0.023	0	0.004	0.003	0.007
Trip fraction	0	0.101	0	0.101	0	0.073	0.006	0.079	0	0.015	0.004	0.02
Vehicle fraction	0	0.113	0	0.113	0	0.015	0.003	0.018	0	0.003	0.002	0.005

Vehicle Class:	MHD	MHD	MHD	MHD	HHD	HHD	HHD	HHD	OBUS	OBUS	OBUS	OBUS
Fuel Type:	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
VMT fraction	0	0.003	0.014	0.017	0	0	0.033	0.033	0	0	0.001	0.001
Trip fraction	0	0.014	0.033	0.047	0	0.001	0.004	0.005	0	0.001	0.003	0.004
Vehicle fraction	0	0.002	0.008	0.01	0	0	0.005	0.005	0	0	0.001	0.001

Vehicle Class:	UBUS	UBUS	UBUS	UBUS	MCY	MCY	MCY	MCY	SBUS	SBUS	SBUS	SBUS
Fuel Type:	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
VMT fraction	0	0.001	0.001	0.002	0.002	0.004	0	0.005	0	0	0.001	0.001
Trip fraction	0	0	0	0	0.002	0.005	0	0.007	0	0	0.001	0.001
Vehicle fraction	0	0	0	0.001	0.008	0.017	0	0.025	0	0	0.001	0.001

Vehicle Class:	MH	MH	MH	MH	ALL	ALL	ALL	ALL
Fuel Type:	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
VMT fraction	0	0.004	0	0.005	0.002	0.941	0.057	1
Trip fraction	0	0	0	0	0.002	0.946	0.051	1
Vehicle fraction	0	0.013	0.001	0.014	0.008	0.97	0.022	1

**Table F.2-1D. EMFAC Based Speed Dependent Fuel Consumption per Vehicle
Class (miles/gallon)**

Speed (mph) ¹	Auto Vehicle Classes				Weighted Auto	Weighted LHD	MHD	HHD
	LDA	LDT1	LDT2	MDV				
0	0	0	0	0	0	0	0	0
1	3.87	0.51	1.54	0.53	7.13	19.42	6.70	2.62
2	3.87	0.51	1.54	0.53	7.13	19.42	6.70	2.62
3	3.99	0.53	1.59	0.55	7.36	19.42	6.70	2.62
4	4.24	0.56	1.69	0.59	7.83	19.42	6.70	2.62
5	4.51	0.60	1.80	0.62	8.32	19.42	6.70	2.62
6	4.80	0.64	1.91	0.66	8.86	19.42	6.70	2.73
7	5.09	0.68	2.03	0.70	9.39	19.42	6.70	2.85
8	5.38	0.72	2.14	0.74	9.93	19.42	6.70	2.96
9	5.67	0.76	2.26	0.78	10.47	19.42	6.70	3.07
10	5.97	0.79	2.38	0.82	11.00	19.42	6.70	3.18
11	6.29	0.84	2.51	0.87	11.61	19.42	6.70	3.32
12	6.62	0.88	2.64	0.91	12.21	19.42	6.70	3.46
13	6.95	0.92	2.77	0.96	12.82	19.42	6.70	3.60
14	7.28	0.97	2.90	1.00	13.42	19.42	6.70	3.74
15	7.60	1.01	3.03	1.05	14.03	19.42	6.70	3.88
16	7.95	1.06	3.17	1.10	14.67	19.42	6.70	4.03
17	8.30	1.10	3.31	1.15	15.31	19.42	6.70	4.18
18	8.64	1.15	3.44	1.19	15.95	19.42	6.70	4.32
19	8.99	1.20	3.58	1.24	16.59	19.42	6.70	4.47
20	9.34	1.24	3.72	1.29	17.23	19.42	6.70	4.62
21	9.68	1.29	3.86	1.34	17.86	19.42	6.70	4.68
22	10.02	1.33	3.99	1.38	18.49	19.42	6.70	4.74
23	10.37	1.38	4.13	1.43	19.12	19.42	6.70	4.81
24	10.71	1.43	4.27	1.48	19.76	19.42	6.70	4.87
25	11.05	1.47	4.40	1.52	20.39	19.42	6.70	4.94
26	11.36	1.51	4.53	1.57	20.96	19.42	6.70	5.00
27	11.67	1.55	4.65	1.61	21.53	19.42	6.70	5.06
28	11.98	1.59	4.77	1.65	22.10	19.42	6.70	5.12
29	12.29	1.64	4.90	1.70	22.67	19.42	6.70	5.18
30	12.60	1.68	5.02	1.74	23.25	19.42	6.70	5.24
31	12.85	1.71	5.12	1.77	23.71	19.42	6.70	5.29
32	13.10	1.74	5.22	1.81	24.16	19.42	6.70	5.35
33	13.35	1.78	5.32	1.84	24.62	19.42	6.70	5.40
34	13.60	1.81	5.42	1.88	25.08	19.42	6.70	5.46
35	13.85	1.84	5.52	1.91	25.54	19.42	6.70	5.52
36	14.01	1.86	5.58	1.93	25.84	19.42	6.70	5.56
37	14.17	1.89	5.64	1.96	26.14	19.42	6.70	5.61
38	14.33	1.91	5.71	1.98	26.44	19.42	6.70	5.66
39	14.50	1.93	5.77	2.00	26.74	19.42	6.70	5.70
40	14.66	1.95	5.84	2.02	27.04	19.42	6.70	5.75
41	14.72	1.96	5.86	2.03	27.15	19.42	6.70	5.78
42	14.78	1.97	5.89	2.04	27.26	19.42	6.70	5.82
43	14.84	1.97	5.91	2.05	27.37	19.42	6.70	5.86
44	14.89	1.98	5.93	2.06	27.47	19.42	6.70	5.89
45	14.95	1.99	5.96	2.06	27.58	19.42	6.70	5.93
46	14.90	1.98	5.94	2.06	27.49	19.42	6.70	5.95
47	14.85	1.98	5.92	2.05	27.40	19.42	6.70	5.97
48	14.80	1.97	5.90	2.04	27.30	19.42	6.70	5.99
49	14.75	1.96	5.88	2.04	27.21	19.42	6.70	6.01

**Table F.2-1D. EMFAC Based Speed Dependent Fuel Consumption per Vehicle
Class (miles/gallon)**

Speed (mph) ¹	Auto Vehicle Classes				Weighted Auto	Weighted LHD	MHD	HHD
	LDA	LDT1	LDT2	MDV				
50	14.70	1.96	5.86	2.03	27.11	19.42	6.70	6.03
51	14.54	1.94	5.79	2.01	26.83	19.42	6.70	6.04
52	14.39	1.91	5.73	1.99	26.54	19.42	6.70	6.05
53	14.23	1.89	5.67	1.96	26.25	19.42	6.70	6.05
54	14.08	1.87	5.61	1.94	25.97	19.42	6.70	6.06
55	13.92	1.85	5.55	1.92	25.68	19.42	6.70	6.06
56	13.68	1.82	5.45	1.89	25.23	19.42	6.70	6.05
57	13.43	1.79	5.35	1.85	24.78	19.42	6.70	6.04
58	13.19	1.76	5.26	1.82	24.33	19.42	6.70	6.03
59	12.95	1.72	5.16	1.79	23.88	19.42	6.70	6.02
60	12.70	1.69	5.06	1.75	23.43	19.42	6.70	6.01
61	12.39	1.65	4.94	1.71	22.87	19.42	6.70	5.99
62	12.09	1.61	4.82	1.67	22.30	19.42	6.70	5.96
63	11.78	1.57	4.70	1.63	21.74	19.42	6.70	5.94
64	11.47	1.53	4.57	1.58	21.17	19.42	6.70	5.91
65	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.89
66	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.85
67	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.81
68	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.77
69	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.73
70	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.70
71	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.65
72	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.60
73	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.55
74	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.50
75	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.45
76	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.39
77	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.34
78	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.28
79	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.22
80	11.17	1.49	4.45	1.54	20.60	19.42	6.70	5.17

Note:

¹ Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

**Table F.2-1E. California Climate Action Registry
CO₂ Emission Factors**

Fuel Type	Emission Factor (kg CO ₂ /gallon)
Diesel	10.15
Motor Gasoline	8.81

Source: California Climate Action Registry General Reporting Protocol, version 3.1, Jan 2009, Table C.3. It is assumed that these emission factors are applicable to 2035 vehicle fleets.

Table F.2-1F. Composite Methane Emission Factor

Model Year	CH ₄ Emission Factor (g/mi) ¹								Model Year Composite Emission Factor (g/mi) ²			
	Passenger Car (gasoline)	LDT (gasoline)	LDT (diesel)	MDV (gasoline)	MDV (diesel)	LHD (diesel)	MHD (diesel)	HHD (diesel)	Autos	LHD (diesel)	MHD (diesel)	HHD (diesel)
1991	0.0704	0.0813	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	7.98E-05	3.75E-10	4.27E-08	7.87E-09
1992	0.0704	0.0813	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	8.73E-05	0.00E+00	3.26E-08	6.74E-09
1993	0.0704	0.0813	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	1.17E-04	3.75E-10	3.86E-08	1.09E-08
1994	0.0531	0.0646	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	1.34E-04	3.75E-10	5.47E-08	1.54E-08
1995	0.0358	0.0517	0.0009	0.3246	0.0051	0.0051	0.0051	0.0051	1.56E-04	1.12E-09	1.12E-07	2.25E-08
1996	0.0272	0.0452	0.001	0.1278	0.0051	0.0051	0.0051	0.0051	8.74E-05	7.49E-10	9.18E-08	2.06E-08
1997	0.0268	0.0452	0.001	0.0924	0.0051	0.0051	0.0051	0.0051	1.14E-04	1.87E-09	1.19E-07	1.99E-08
1998	0.0249	0.0391	0.001	0.0641	0.0051	0.0051	0.0051	0.0051	1.10E-04	7.49E-10	1.31E-07	2.17E-08
1999	0.0216	0.0321	0.001	0.0578	0.0051	0.0051	0.0051	0.0051	1.18E-04	3.00E-09	2.14E-07	3.00E-08
2000	0.0178	0.0346	0.001	0.0493	0.0051	0.0051	0.0051	0.0051	1.45E-04	3.00E-09	2.59E-07	3.41E-08
2001	0.011	0.0151	0.001	0.0528	0.0051	0.0051	0.0051	0.0051	1.11E-04	8.62E-09	2.25E-07	2.88E-08
2002	0.0107	0.0178	0.001	0.0546	0.0051	0.0051	0.0051	0.0051	1.37E-04	5.32E-08	1.81E-07	2.17E-08
2003	0.0114	0.0155	0.001	0.0533	0.0051	0.0051	0.0051	0.0051	1.57E-04	1.24E-07	2.11E-07	3.30E-08
2004	0.0145	0.0152	0.001	0.0341	0.0051	0.0051	0.0051	0.0051	1.53E-04	4.17E-07	3.00E-07	3.33E-08
2005	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.57E-04	5.45E-07	3.82E-07	5.36E-08
2006	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.60E-04	2.10E-07	3.78E-07	6.82E-08
2007	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.63E-04	2.56E-07	4.26E-07	8.02E-08
2008	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.62E-04	2.56E-07	4.33E-07	9.70E-08
2009	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.61E-04	2.49E-07	4.32E-07	1.21E-07
2010	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.63E-04	2.45E-07	4.71E-07	1.54E-07
2011	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.68E-04	2.59E-07	5.11E-07	2.02E-07
2012	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	1.87E-04	2.84E-07	5.77E-07	2.66E-07
2013	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	2.17E-04	2.93E-07	6.40E-07	3.33E-07
2014	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	2.34E-04	3.30E-07	7.48E-07	4.17E-07
2015	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	2.67E-04	3.62E-07	8.47E-07	5.33E-07
2016	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	2.86E-04	3.52E-07	8.54E-07	5.80E-07
2017	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	3.29E-04	3.86E-07	9.14E-07	6.38E-07
2018	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	3.78E-04	4.25E-07	9.98E-07	7.02E-07
2019	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	4.28E-04	4.78E-07	1.09E-06	7.63E-07
2020	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	4.79E-04	5.09E-07	1.20E-06	8.19E-07
2021	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	5.00E-04	5.26E-07	1.28E-06	9.59E-07
2022	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	5.46E-04	5.77E-07	1.37E-06	1.08E-06
2023	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	5.87E-04	6.28E-07	1.50E-06	1.19E-06
2024	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	6.40E-04	6.89E-07	1.62E-06	1.22E-06
2025	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	6.72E-04	7.17E-07	1.68E-06	1.28E-06
2026	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	7.02E-04	7.53E-07	1.77E-06	1.32E-06
2027	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	7.29E-04	7.76E-07	1.85E-06	1.36E-06

Table F.2-1F. Composite Methane Emission Factor

Model Year	CH ₄ Emission Factor (g/mi) ¹								Model Year Composite Emission Factor (g/mi) ²			
	Passenger Car (gasoline)	LDT (gasoline)	LDT (diesel)	MDV (gasoline)	MDV (diesel)	LHD (diesel)	MHD (diesel)	HHD (diesel)	Autos	LHD (diesel)	MHD (diesel)	HHD (diesel)
2028	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	7.52E-04	8.13E-07	1.93E-06	1.40E-06
2029	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	7.74E-04	8.58E-07	2.03E-06	1.44E-06
2030	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	7.93E-04	8.92E-07	2.09E-06	1.48E-06
2031	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	7.88E-04	8.68E-07	2.09E-06	1.51E-06
2032	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	8.04E-04	8.50E-07	2.11E-06	1.58E-06
2033	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	8.24E-04	8.72E-07	2.14E-06	1.65E-06
2034	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	8.54E-04	8.83E-07	2.17E-06	1.74E-06
2035	0.0147	0.0157	0.001	0.0326	0.0051	0.0051	0.0051	0.0051	8.63E-04	8.91E-07	2.21E-06	1.78E-06
Fleet Composite Emission Factor (g/mi) ³									1.65E-02	1.76E-05	4.08E-05	2.71E-05

Notes:

¹ Emission factors are from California Climate Action Registry General Reporting Protocol, Version 3.1, Jan. 2009, Table C.4.

² Model year composite emission factors are calculated by weighting CH₄ emission factors per vehicle class by the fraction of vehicle class within the 2008 fleet.

³ Fleet composite emission factor is the sum of model year composite emission factors.

Table F.2-1G. Composite Nitrous Oxide Emission Factor

Model Year	CCAR N ₂ O Emission Factor (g/mi) ¹								Model Year Composite Emission Factor (g/mi) ²			
	Passenger Car (gasoline)	LDT (gasoline)	LDT (diesel)	MDV (gasoline)	MDV (diesel)	LHD (diesel)	MHD (diesel)	HHD (diesel)	Autos	LHD (diesel)	MHD (diesel)	HHD (diesel)
1991	0.0647	0.1035	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	6.93E-05	3.53E-10	4.02E-08	7.40E-09
1992	0.0647	0.1035	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	7.26E-05	0.00E+00	3.07E-08	6.35E-09
1993	0.0647	0.1035	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	9.75E-05	3.53E-10	3.63E-08	1.02E-08
1994	0.056	0.0982	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	1.13E-04	3.53E-10	5.15E-08	1.45E-08
1995	0.0473	0.0908	0.0014	0.1142	0.0048	0.0048	0.0048	0.0048	1.32E-04	1.06E-09	1.05E-07	2.12E-08
1996	0.0426	0.0871	0.0015	0.168	0.0048	0.0048	0.0048	0.0048	1.40E-04	7.05E-10	8.64E-08	1.94E-08
1997	0.0422	0.0871	0.0015	0.1726	0.0048	0.0048	0.0048	0.0048	2.06E-04	1.76E-09	1.12E-07	1.87E-08
1998	0.0393	0.0728	0.0015	0.1693	0.0048	0.0048	0.0048	0.0048	2.21E-04	7.05E-10	1.23E-07	2.05E-08
1999	0.0337	0.0564	0.0015	0.1435	0.0048	0.0048	0.0048	0.0048	2.22E-04	2.82E-09	2.01E-07	2.82E-08
2000	0.0273	0.0621	0.0015	0.1092	0.0048	0.0048	0.0048	0.0048	2.64E-04	2.82E-09	2.43E-07	3.21E-08
2001	0.0158	0.0164	0.0015	0.1235	0.0048	0.0048	0.0048	0.0048	1.91E-04	8.11E-09	2.12E-07	2.72E-08
2002	0.0153	0.0228	0.0015	0.1307	0.0048	0.0048	0.0048	0.0048	2.48E-04	5.01E-08	1.71E-07	2.05E-08
2003	0.0135	0.0114	0.0015	0.124	0.0048	0.0048	0.0048	0.0048	2.51E-04	1.16E-07	1.99E-07	3.10E-08
2004	0.083	0.0132	0.0015	0.0285	0.0048	0.0048	0.0048	0.0048	3.52E-04	3.93E-07	2.82E-07	3.14E-08
2005	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	9.06E-05	5.13E-07	3.59E-07	5.04E-08
2006	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	9.23E-05	1.98E-07	3.56E-07	6.42E-08
2007	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	9.39E-05	2.41E-07	4.01E-07	7.55E-08
2008	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	9.31E-05	2.41E-07	4.08E-07	9.13E-08
2009	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	9.28E-05	2.34E-07	4.07E-07	1.14E-07
2010	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	9.37E-05	2.30E-07	4.44E-07	1.45E-07
2011	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	9.66E-05	2.43E-07	4.81E-07	1.90E-07
2012	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	1.08E-04	2.68E-07	5.43E-07	2.50E-07
2013	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	1.25E-04	2.75E-07	6.02E-07	3.14E-07
2014	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	1.34E-04	3.11E-07	7.04E-07	3.92E-07
2015	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	1.53E-04	3.41E-07	7.97E-07	5.02E-07
2016	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	1.64E-04	3.31E-07	8.04E-07	5.46E-07
2017	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	1.89E-04	3.63E-07	8.60E-07	6.00E-07
2018	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	2.16E-04	4.00E-07	9.39E-07	6.60E-07
2019	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	2.44E-04	4.50E-07	1.03E-06	7.18E-07
2020	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	2.73E-04	4.79E-07	1.13E-06	7.71E-07
2021	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	2.85E-04	4.95E-07	1.21E-06	9.02E-07
2022	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	3.11E-04	5.43E-07	1.29E-06	1.02E-06
2023	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	3.34E-04	5.91E-07	1.41E-06	1.12E-06
2024	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	3.65E-04	6.48E-07	1.52E-06	1.15E-06
2025	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	3.83E-04	6.75E-07	1.58E-06	1.21E-06
2026	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	4.00E-04	7.08E-07	1.66E-06	1.24E-06
2027	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	4.16E-04	7.31E-07	1.74E-06	1.28E-06

Table F.2-1G. Composite Nitrous Oxide Emission Factor

Model Year	CCAR N ₂ O Emission Factor (g/mi) ¹								Model Year Composite Emission Factor (g/mi) ²			
	Passenger Car (gasoline)	LDT (gasoline)	LDT (diesel)	MDV (gasoline)	MDV (diesel)	LHD (diesel)	MHD (diesel)	HHD (diesel)	Autos	LHD (diesel)	MHD (diesel)	HHD (diesel)
2028	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	4.29E-04	7.65E-07	1.82E-06	1.32E-06
2029	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	4.41E-04	8.07E-07	1.91E-06	1.36E-06
2030	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	4.52E-04	8.40E-07	1.96E-06	1.40E-06
2031	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	4.50E-04	8.17E-07	1.97E-06	1.42E-06
2032	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	4.59E-04	8.00E-07	1.99E-06	1.49E-06
2033	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	4.71E-04	8.21E-07	2.02E-06	1.55E-06
2034	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	4.88E-04	8.31E-07	2.04E-06	1.64E-06
2035	0.0079	0.0101	0.0015	0.0177	0.0048	0.0048	0.0048	0.0048	4.93E-04	8.39E-07	2.08E-06	1.68E-06
Fleet Composite Emission Factor (g/mi) ³									1.10E-02	1.66E-05	3.84E-05	2.55E-05

Notes:

¹ Emission factors are from California Climate Action Registry General Reporting Protocol, Version 3.1, Jan. 2009, Table C.4.

² Model year composite emission factors are calculated by weighting N₂O emission factors per vehicle class by the fraction of vehicle class within the 2008 fleet.

³ Fleet composite emission factor is the sum of model year composite emission factors.

Appendix G

Comparison of Design Variations Option 1 and Option 2

G.1 Introduction

For alternatives 6A, 6B, and 6C, three design options for the portion of I-710 between the I-710/Slauson Ave interchange to just south of the I-710/I-5 interchange are under consideration. These configurations will be fully analyzed so that they can be considered in the future selection of a Preferred Alternative for the project. These options are as follows:

- Design Option 1 applies to Alternatives 6A, 6B and 6C and provides access to Washington Blvd using three ramp intersections at Washington Blvd.
- Design Option 2 applies to Alternatives 6A, 6B, and 6C and provides access to Washington Blvd. using two ramp intersections at Washington Blvd.
- Design Option 3 applies only to Alternative 6B and removes access to Washington Blvd. at its current location. The ramps at the I-710/Washington Blvd. interchange would be removed to accommodate the proposed FC ramps in and out of the railyards. The SB off-ramp and NB-on-ramp access would be accommodated by Alternative 6B in the vicinity of the existing interchange by the proposed new SB off-ramp and NB on-ramp at Oak St. and Indiana St. These two ramps are proposed as mixed-flow ramps (freight connector ramps that would also allow automobile traffic). However, the SB on-ramp and NB off-ramp traffic that previously used the Washington Blvd. interchange would be required to access the Atlantic Blvd./Bandini Blvd. interchange located south of the existing Washington Blvd. interchange to ultimately reach I-710.

Design Option 3 only applies to Alternative 6B because it was not included in the travel demand modeling for either Alternative 6A or 6C, and is not included in this air quality/health risk comparison.

Two design variations, “Option 1” and “Option 2”, in the I-710 alignment/geometry have been analyzed for the 2035 Alternatives 6A, 6B and 6C. The design of Option 1 differs from Option 2 in the on- and off-ramps connecting Washington Boulevard to the freight corridor in Segment 6 as described below. Figure G.1 provides a visual representation of these design variations.

- **Northbound freight corridor:** In Option 1, the traffic on the northbound freight corridor, that off-ramp to Washington Boulevard, cross over the mainline I-710 from the east side to the west side and proceed around a half circle to exit on the north side of Washington Boulevard. In Option 2, this off-ramp traffic remains on the east side of the mainline I-710 and exits to the south side of Washington Boulevard.
- **Southbound freight corridor:** In Option 1, traffic enters the on-ramp to the southbound freight corridor from the north side of Washington Boulevard and proceeds around a half circle, where the on-ramp crosses from the west side of the I-710 mainline to the east side of the I-710 mainline, to merge on the southbound freight corridor. In Option 2 however, the on-ramp traffic enters from the south side of Washington Boulevard and proceeds to the west of the mainline I-710 to join the southbound freight corridor.

The results and analysis presented in the main report for the 2035 Alternatives 6A, 6B and 6C are for Option 1. This appendix discusses the differences in emission inventories, ambient air quality impacts and health risk impacts between Option 1 and Option 2 for the 2035 Alternatives 6A, 6B and 6C.

G.2 Comparison of Emission Inventories

Emission inventories for Option 1 and Option 2 design variations were developed only for the I-710 freeway using the post-processed traffic data. As described in Section C.1 of Appendix C, the input parameters needed for developing emission inventories include traffic link length, traffic flow and average speed on each traffic link. The post processed traffic data show no variation in traffic flows or speeds for Option 1 and Option 2 for the various traffic links. However, the differences in the traffic link lengths for the links on the on- and off-ramps connecting Washington Boulevard to the freight corridor do affect the emissions from these links. Additionally, lengths of some mainline and freight corridor traffic links in Segment 6 (south of Slauson Avenue to just north of Washington Boulevard) also varied between Options 1 and 2 due to changes in the location of the I-710 freeway and ramps. Overall, Option 2 has shorter on- and off-ramps as compared to Option 1; therefore, traffic travels a shorter distance on these freight corridor ramps resulting in slightly lower exhaust and entrained PM emissions from these ramps. A comparison of the emissions of the individual traffic links between Option 1 and Option 2 can be seen in Tables C.4-4, C.4-5, C.4-6, C.5-4, C.5-5 and C.5-6 of Appendix C. The difference in the total mass emissions of I-710 freeway among these design variations is relatively negligible ($\leq 3\%$) for all three Alternatives 6A, 6B and 6C.

G.3 Comparison of Ambient Air Quality Impacts

As described in Section G.2, small variations in emissions between Option 1 and Option 2 only occurred on a few traffic links located on the on- and off-ramps connecting Washington Blvd to the I-710 freight corridor. These ramps are located in Meteorological Zone 4. In addition, some links change location in Option 2, which can affect modeled incremental ambient concentration impacts.

Table 1 shows the incremental PM₁₀ and PM_{2.5} concentration impacts from the I-710 freeway for Options 1 and 2 of Alternatives 6A/B/C as compared to 2008 baseline. Figures G.2 to G.4 show the annual PM₁₀ impacts in Meteorological Zone 4 for Options 1 and 2 of Alternatives 6A/B/C as compared to 2008 baseline. No significant changes were seen in these impacts between Options 1 and 2 for exhaust PM₁₀. A small decrease in the total PM₁₀ impacts for Option 2 as compared to Option 1 was observed west of the I-710 freeway in the region just below Washington Blvd where the design variation occurs. This can be attributed to the shifting of the off-ramp from the west of I-710 mainline in Option 1 to the east side of the I-710 mainline in Option 2 which results in lower entrained dust emissions on the west of the I-710 mainline. A similar pattern is seen in Figures G.5 to G.13 that show the maximum incremental 24-hr PM₁₀ impacts, maximum incremental 24-hr PM_{2.5} impacts and the annual PM_{2.5} impacts.

Table 1. Peak Incremental Particulate Concentration Impacts of the I-710 Freeway for Alternative 6 Design Variations as compared to 2008 Baseline					
Pollutant	Averaging Time	Delta Scenario	Maximum Incremental Impact		Comments
			(µg/m³)		
			Option 1	Option 2	
Total PM ₁₀	24-hour	Alt. 6A - 2008	78.7	78.7	No Change
		Alt. 6B - 2008	74.4	74.4	
		Alt. 6C - 2008	64.2	64.2	
	Annual	Alt. 6A - 2008	44.4	44.4	No Change
		Alt. 6B - 2008	42.5	42.5	
		Alt. 6C - 2008	34.9	34.9	
Total PM _{2.5}	24-hour	Alt. 6A - 2008	21.0	20.9	No Appreciable Change
		Alt. 6B - 2008	15.3	15.3	
		Alt. 6C - 2008	13.1	13.1	

Table 2 shows the NO₂ and CO impacts from I-710 freeway emissions for Options 1 and 2 of Alternatives 6A/B/C as compared to 2008 baseline. No appreciable changes were observed in these impacts between Options 1 and 2. Thus, the conclusions in Section 4.3.4 for these pollutants are the same for Option 2 as they are for Option 1.

Table 2. Incremental and Maximum (Incremental plus Background level) Gaseous Concentration Impacts of the I-710 Freeway for Alternative 6 Design Variations as compared to 2008 Baseline ^a							
Pollutant	Averaging Time	Delta Scenario	Incremental Impact		Maximum (Incremental + Background) Concentration Impact		Comments
			(µg/m ³)		(µg/m ³)		
			Option 1	Option 2	Option 1	Option 2	
Nitrogen Dioxide (NO ₂)	1-hour	Alt. 6A - 2008	-70.1	-71.3	156	154	No Appreciable Change
		Alt. 6B - 2008	-84.5	-85.4	141	140	
		Alt. 6C - 2008	-83.9	-84.8	142	141	
	Annual	Alt. 6A - 2008	4.8	4.8	62.4	62.3	No Appreciable Change
		Alt. 6B - 2008	-0.7	-0.7	55.6	55.5	
		Alt. 6C - 2008	-0.7	-0.7	55.6	55.6	
Carbon Monoxide (CO)	1-hour	Alt. 6A - 2008	-241	-242	8924	8922	No Appreciable Change
		Alt. 6B - 2008	-254	-254	8911	8911	
		Alt. 6C - 2008	-254	-254	8911	8911	
	8-hour	Alt. 6A - 2008	-37	-37	7295	7295	No Appreciable Change
		Alt. 6B - 2008	-40	-40	7292	7292	
		Alt. 6C - 2008	-39	-39	7293	7292	
Notes:							
^a NO ₂ and CO are attainment pollutants and, therefore, incremental impacts from the project plus background pollutant concentration levels are presented.							

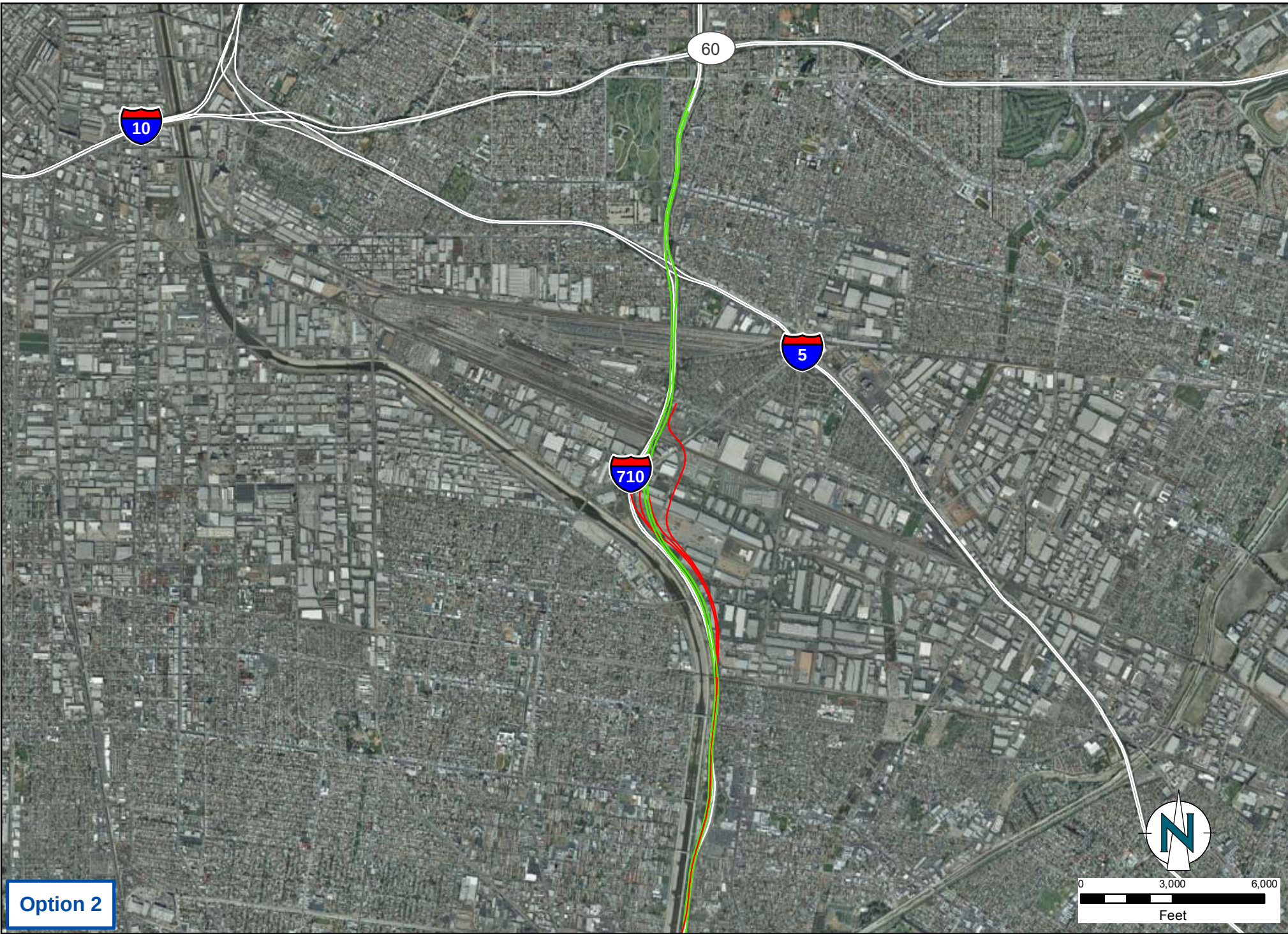
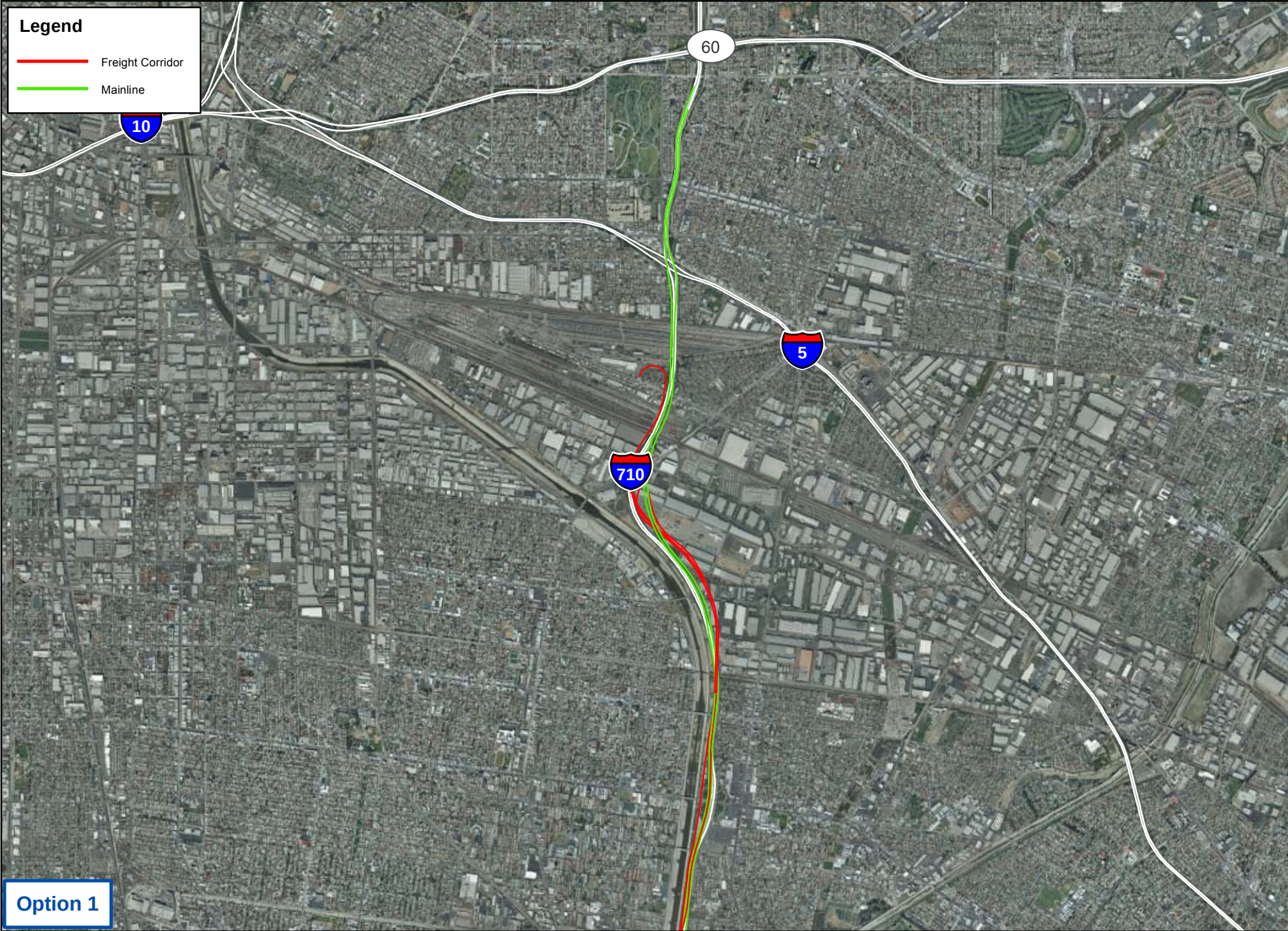
G.4 Comparison of Health Risk Impacts

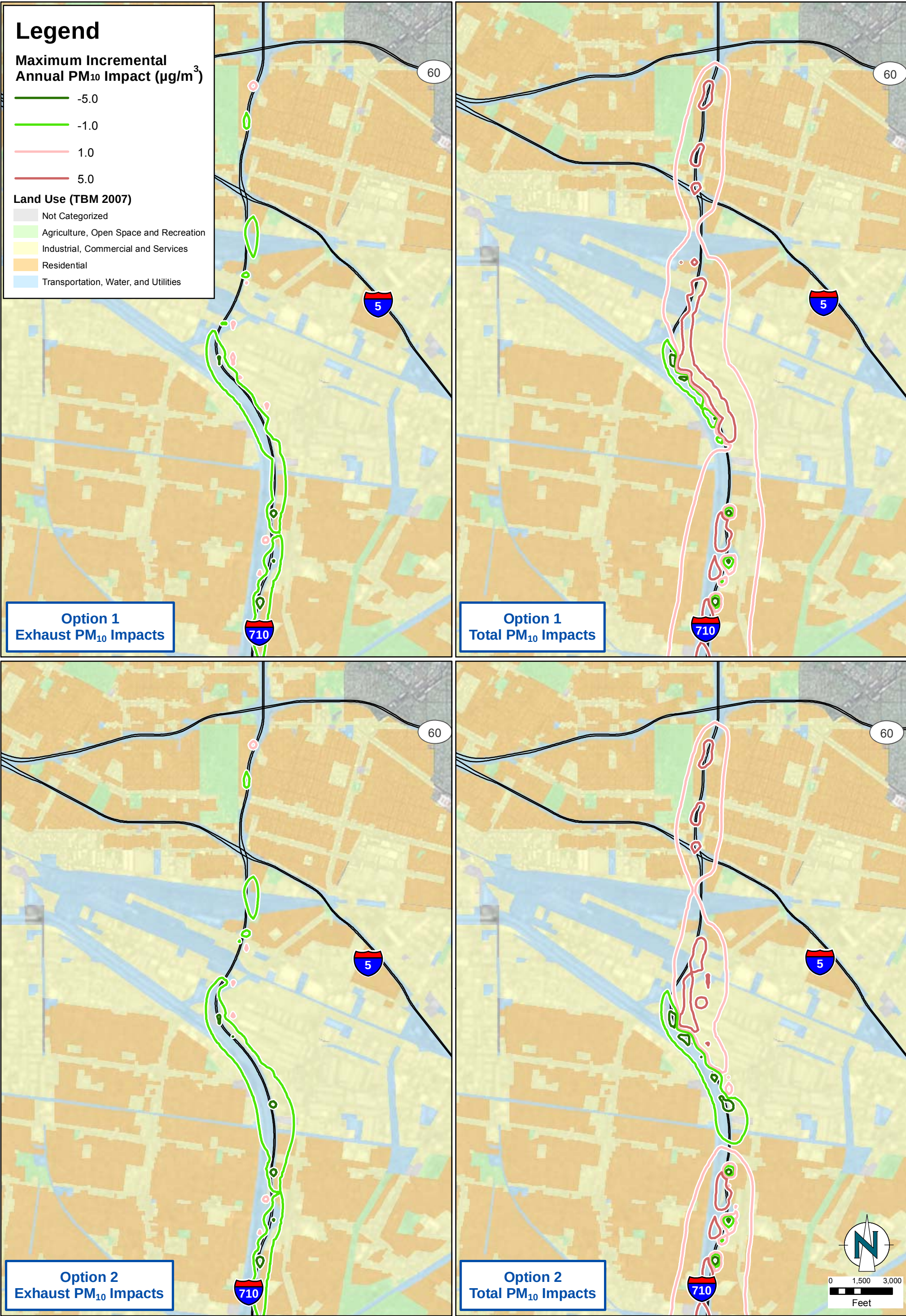
Table 3 shows the maximum incremental health risk impacts of the design variations Option 1 and Option 2 of the Alternatives 6A/B/C as compared to 2008 baseline. Figures G.11 to G.13 show a comparison of the incremental cancer risk isopleths for Options 1 and 2 for Alternatives 6A/B/C as compared to 2008 baseline in Meteorological Zone 4.

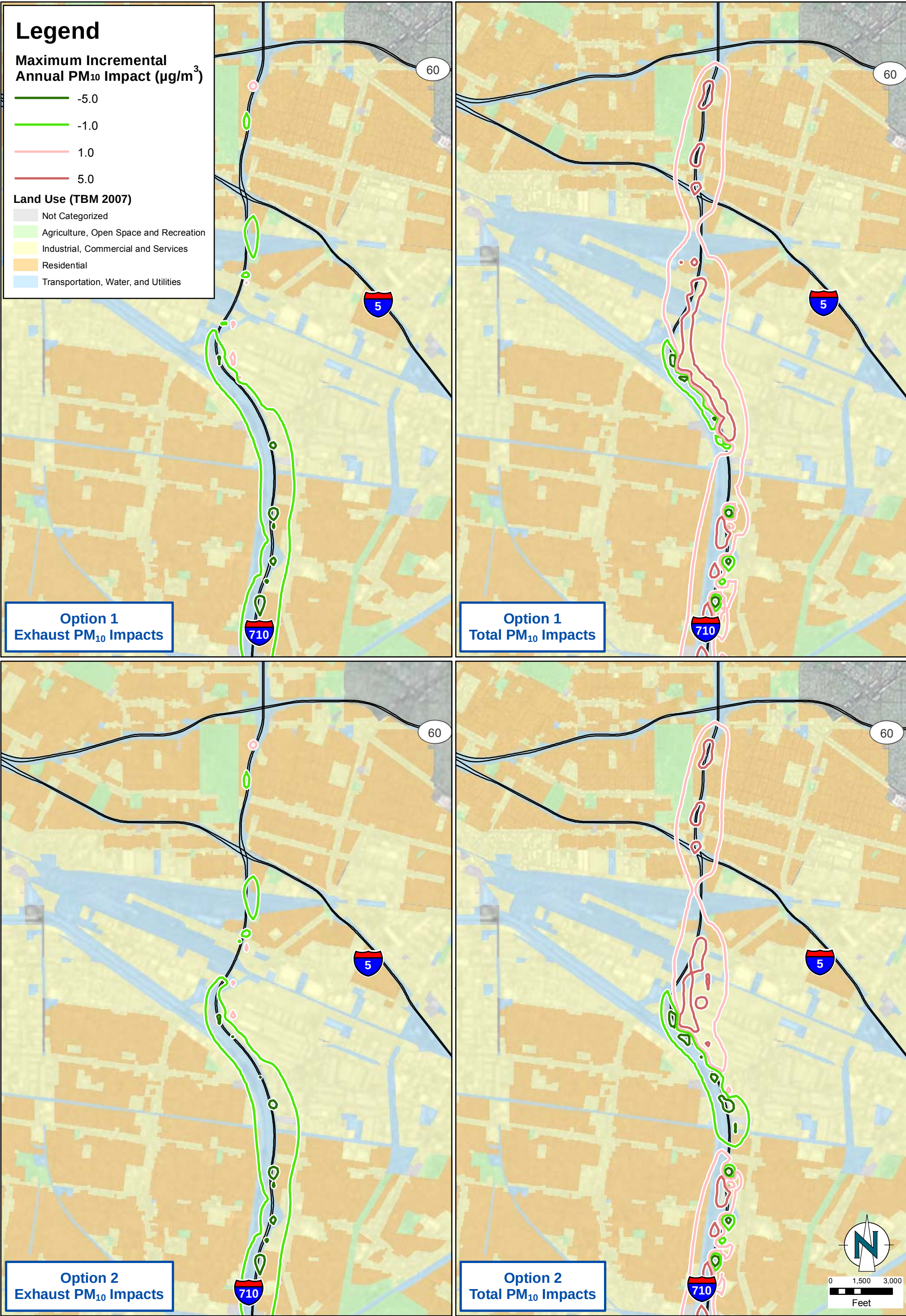
As in the case of ambient air quality impacts, the effect of the design variation on health risk impacts was localized and seen only in the region surrounding the on- and off-ramps connecting Washington Blvd to the I-710 freight corridor, the region where the design variation occurs. Figures G.14 to G.16 show minor changes in the incremental cancer risk between the two options at a non-residential area located east of the I-710 freeway, right next to the Option 2 off-ramp from the freight corridor to Washington Blvd. Two receptors in this area were found to have a cancer risk impact greater than 10 in a million for Alternatives 6A/B Option 2. The incremental cancer risks at these two receptors were below 10 in a million for Option 1. These two receptors are located very close to the off ramp from the freight corridor and the increase in cancer risk seen for Option 2 as compared to Option 1 is a result of the shifting of the off-ramp from to the east of I-710 freeway that in turn increases the exhaust emissions in that region. No appreciable changes were observed in the acute and chronic health impacts between Options 1 and 2 (Table 3).

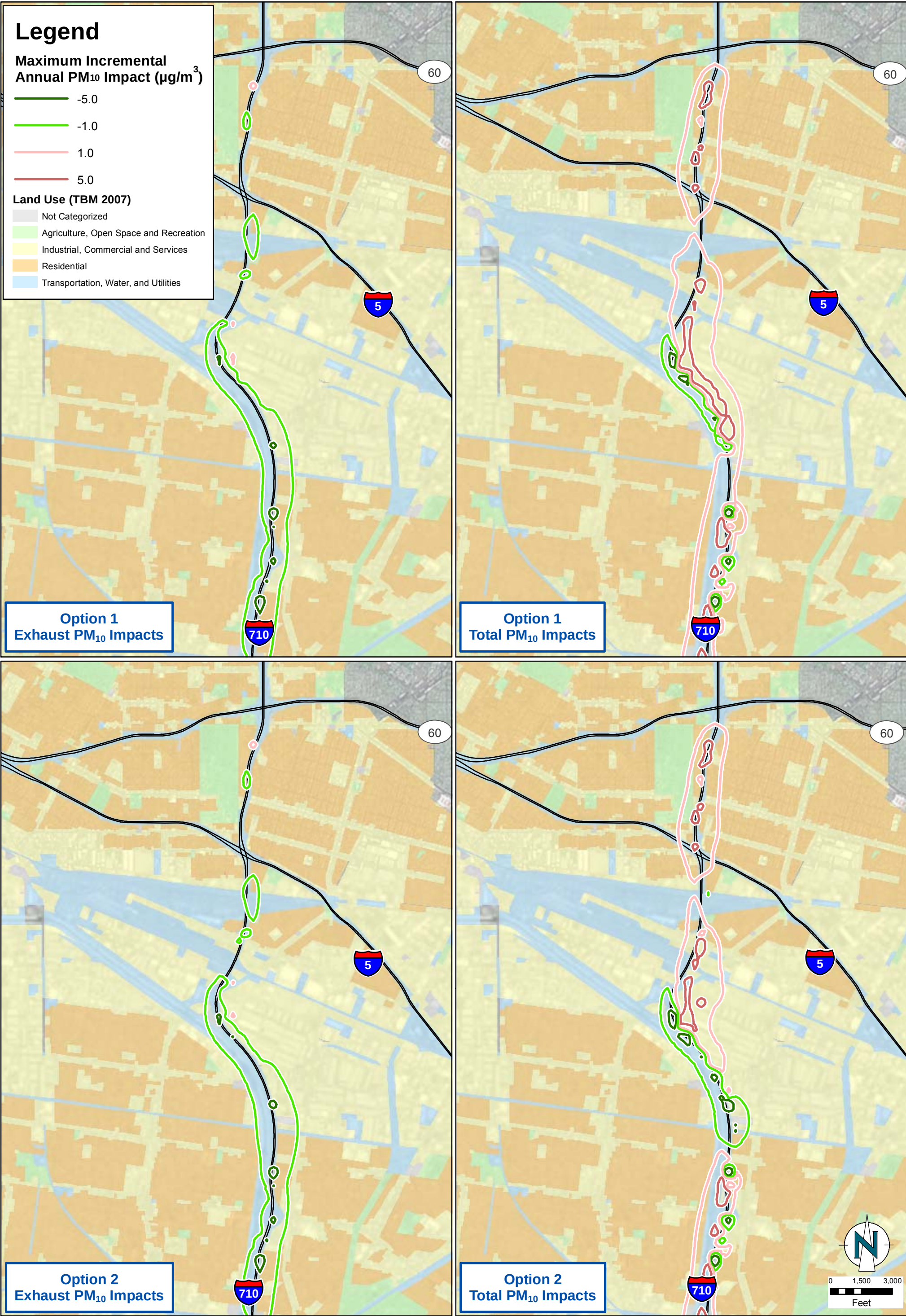
Thus, the conclusions in Section 4.3.6 would be the same for Option 2 as they are for Option 1.

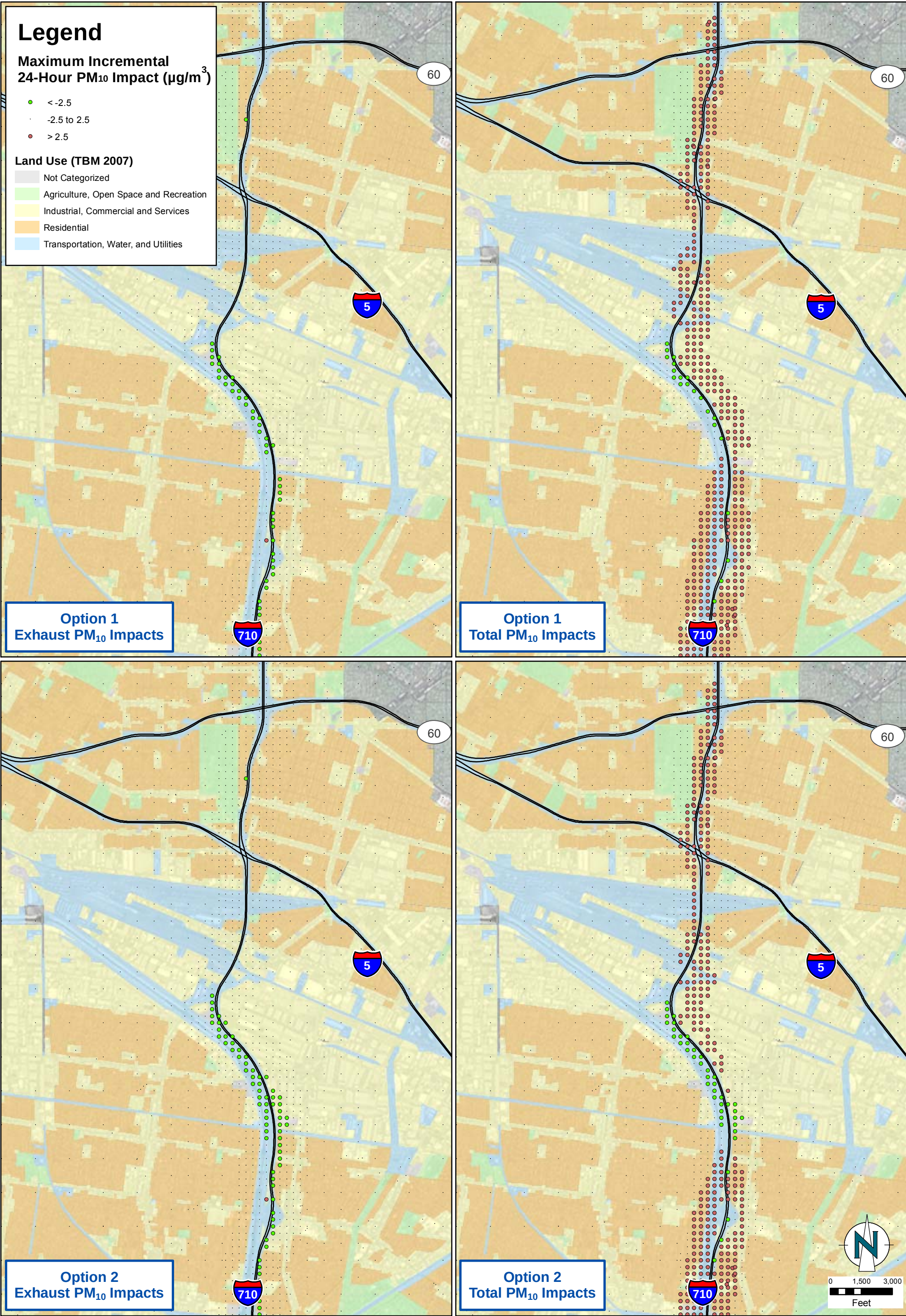
Table 3. Maximum Health Impacts Associated With MSAT Emissions from the I-710 Mainline and Freight Corridor for 2035 Alternative 6 Design Variations Compared to 2008 Baseline					
Health Impact	Receptor Type/Exposure Scenario	Delta Scenario	Maximum Incremental Risk Impact from Project Emissions (Risk in 1 million)		Comments
			Option 1	Option 2	
Cancer risk	Residential	Alt6A. - 2008	462	462	No Appreciable Change. See Text Above
		Alt6B. - 2008	-7	24	
		Alt6C. - 2008	-7	-7	
			Hazard Index (Unitless)		
			Option 1	Option 2	
Chronic Noncancer Hazard Index	Residential	Alt6A. - 2008	0.279	0.278	No Appreciable Change
		Alt6B. - 2008	-0.005	-0.005	
		Alt6C. - 2008	-0.005	-0.005	
Acute Noncancer Hazard Index	Residential	Alt6A. - 2008	0.079	0.079	No Appreciable Change
		Alt6B. - 2008	0.102	0.102	
		Alt6C. - 2008	-0.0001	-0.0001	

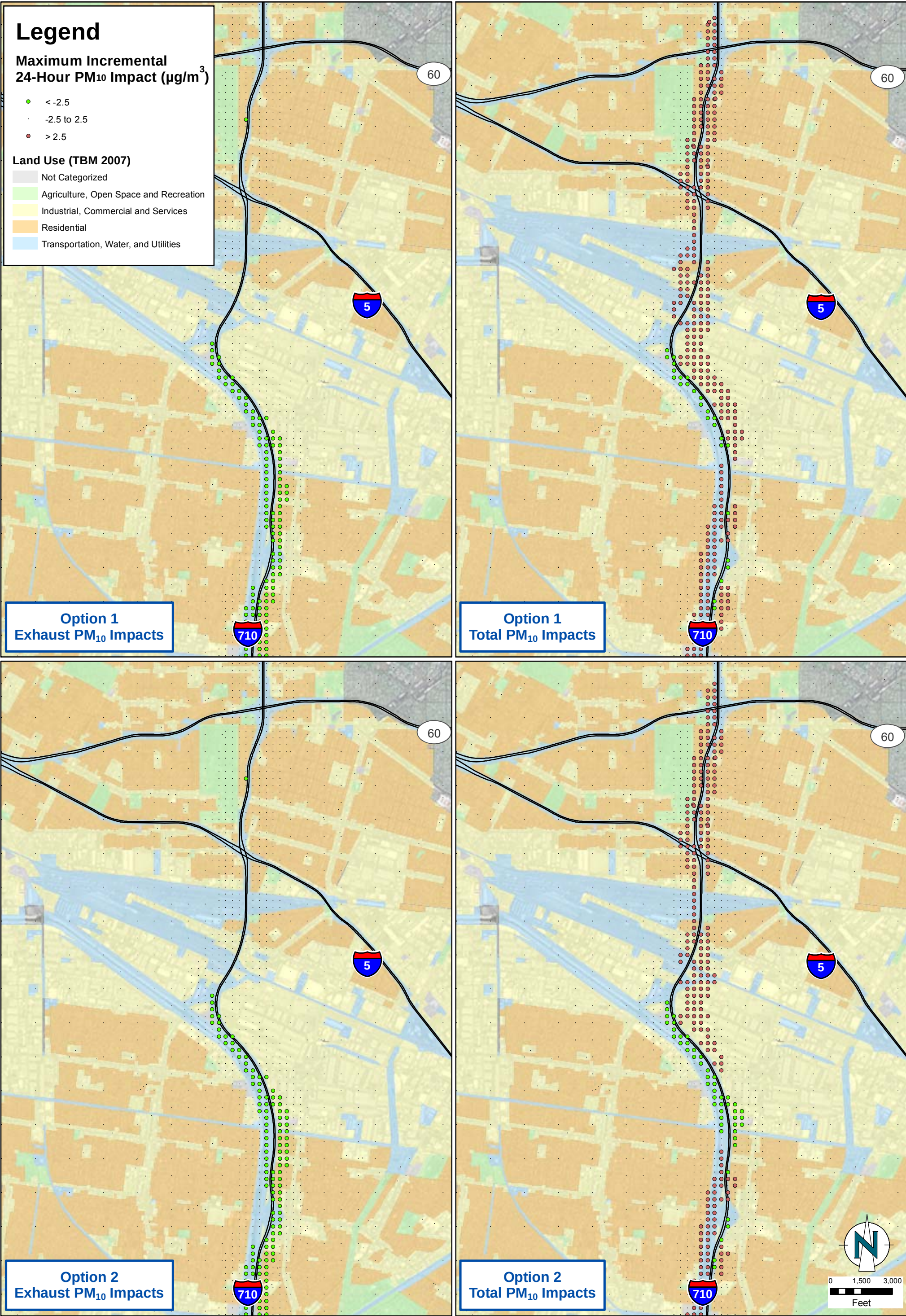


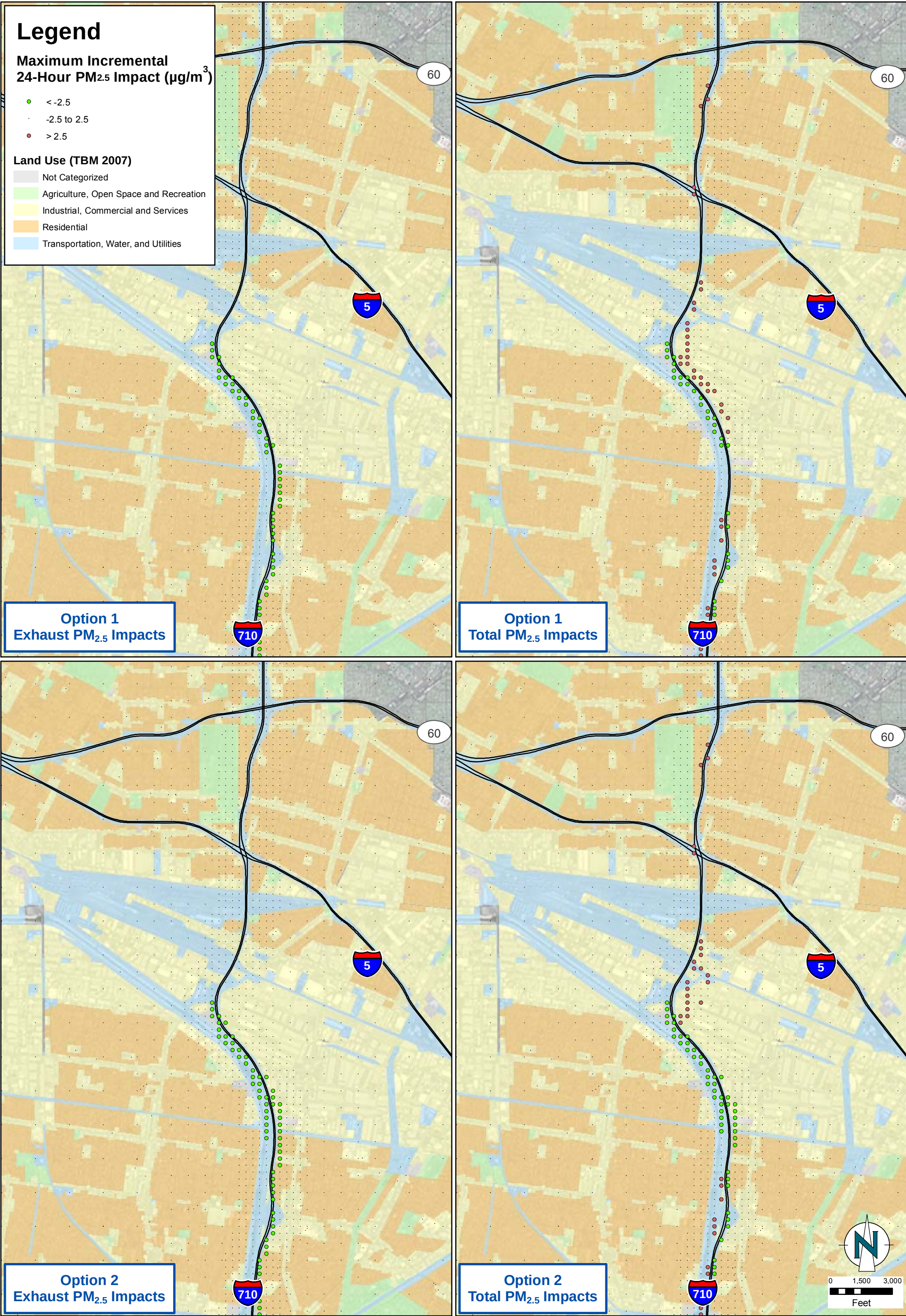


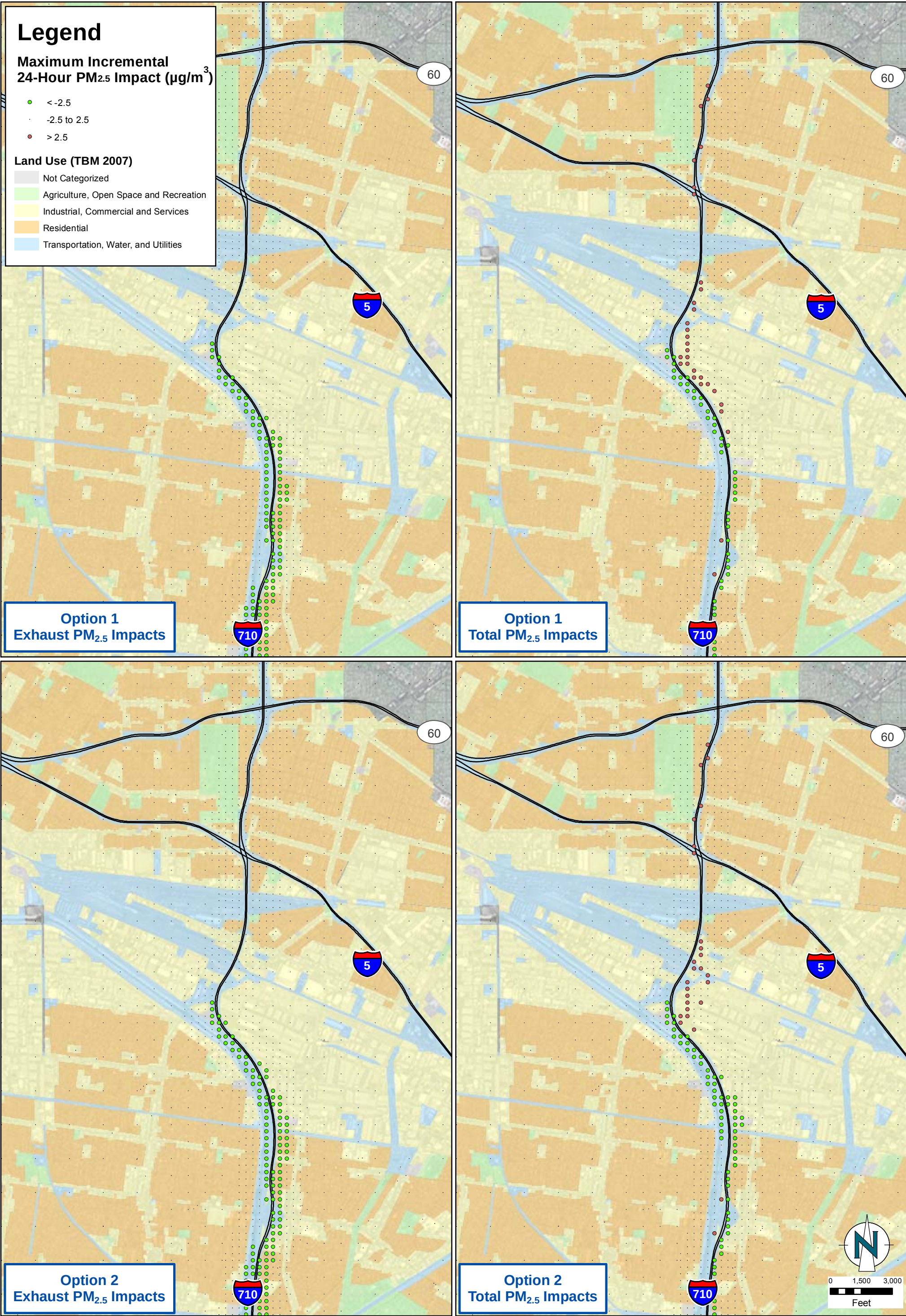


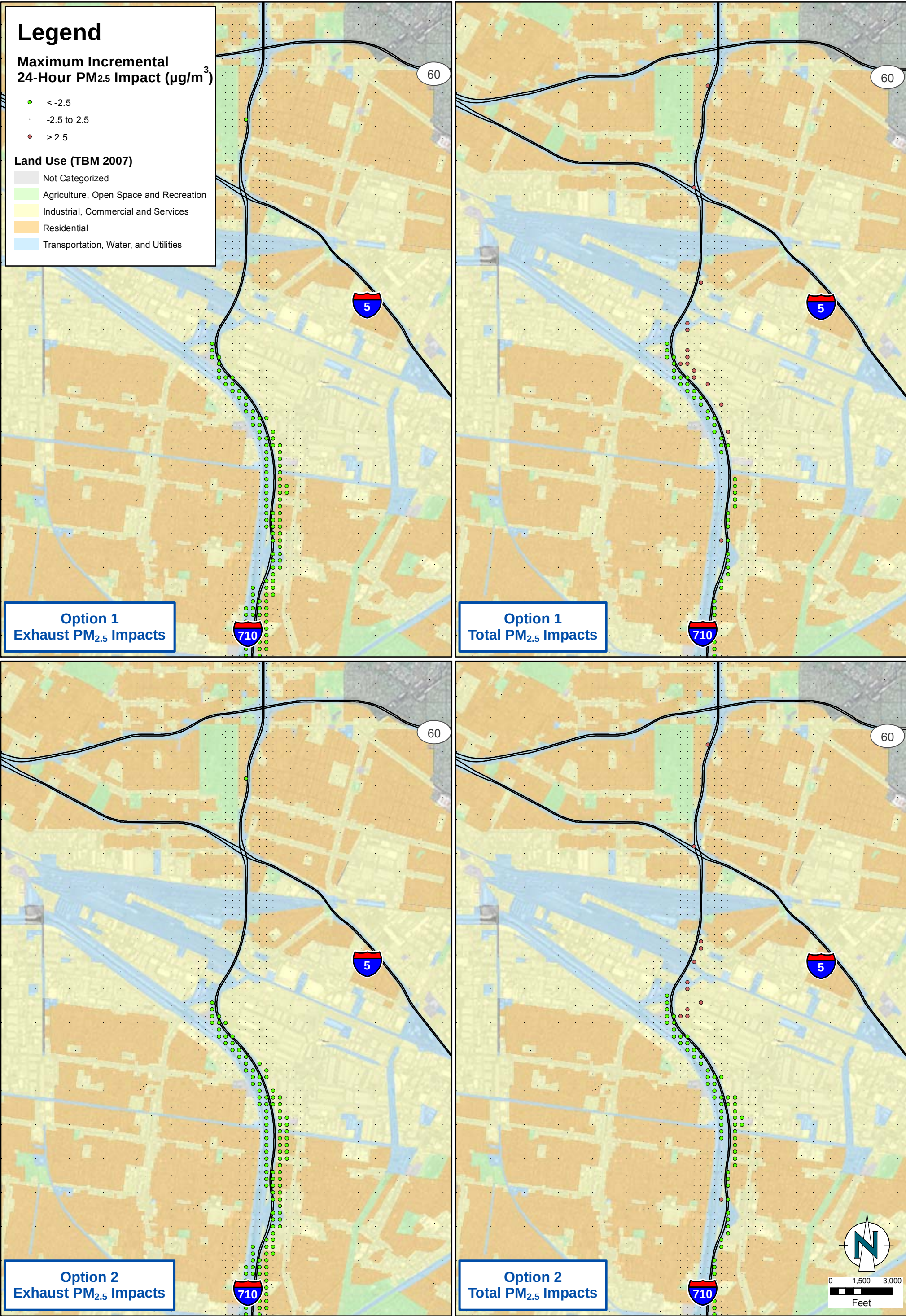


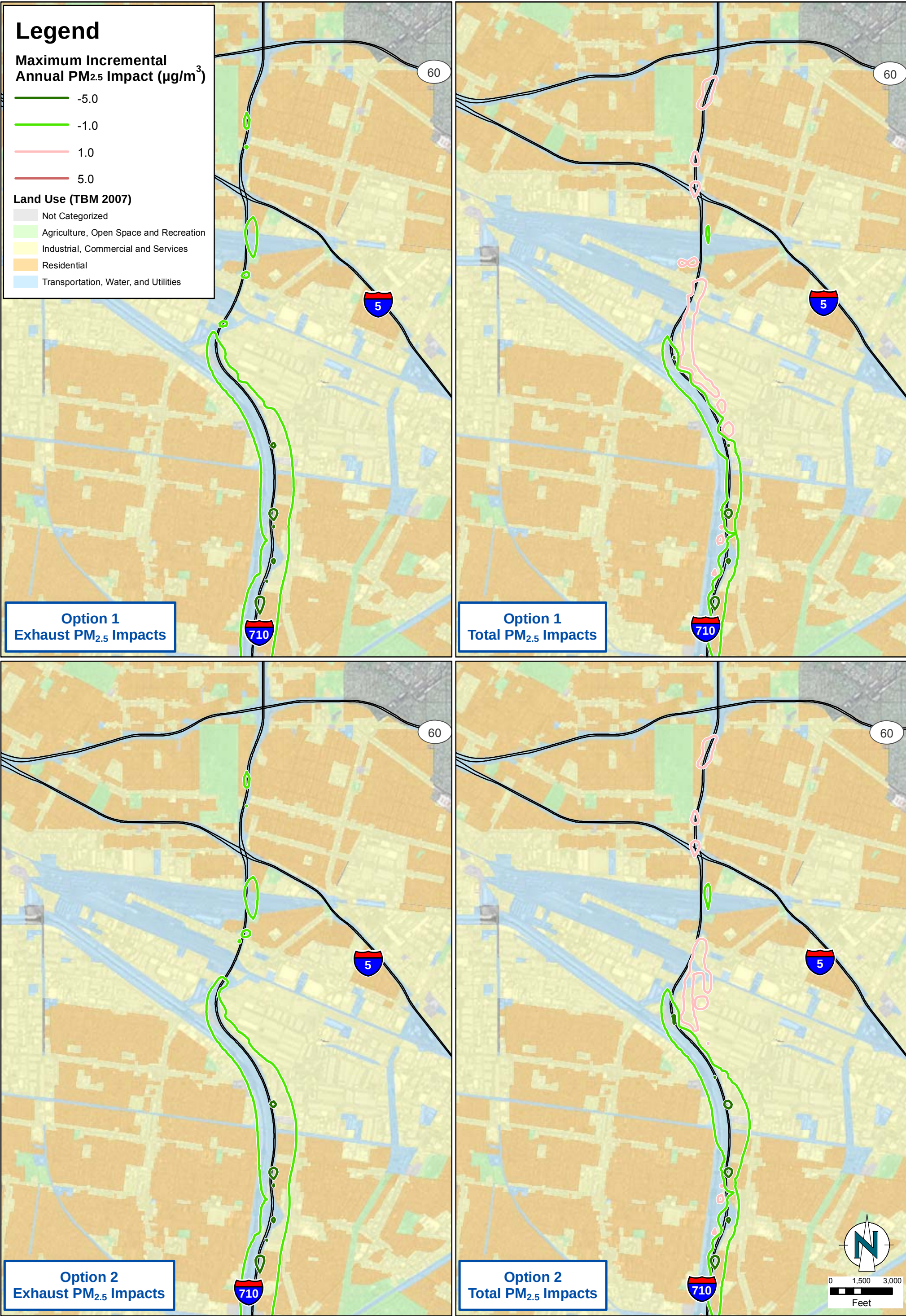


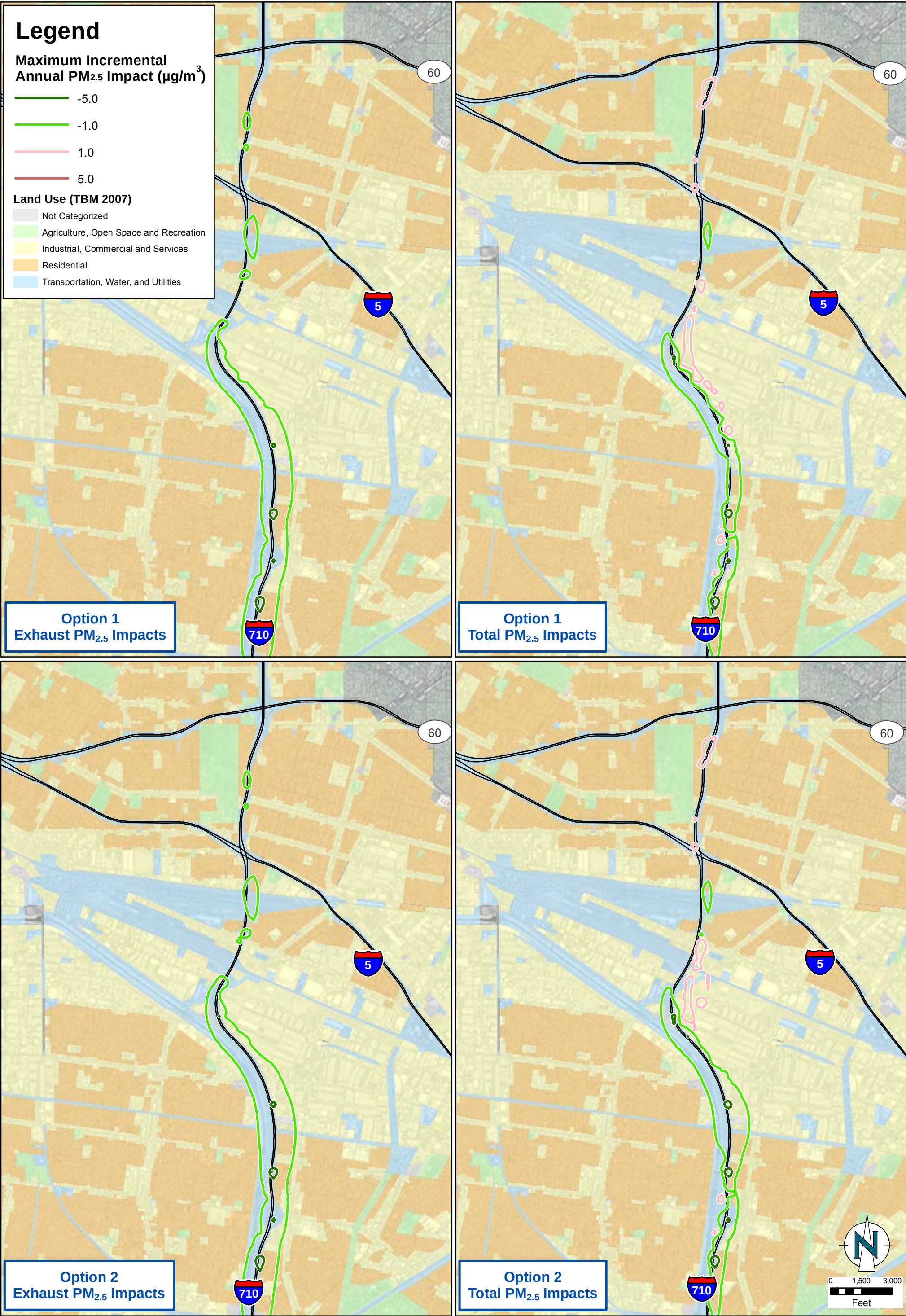


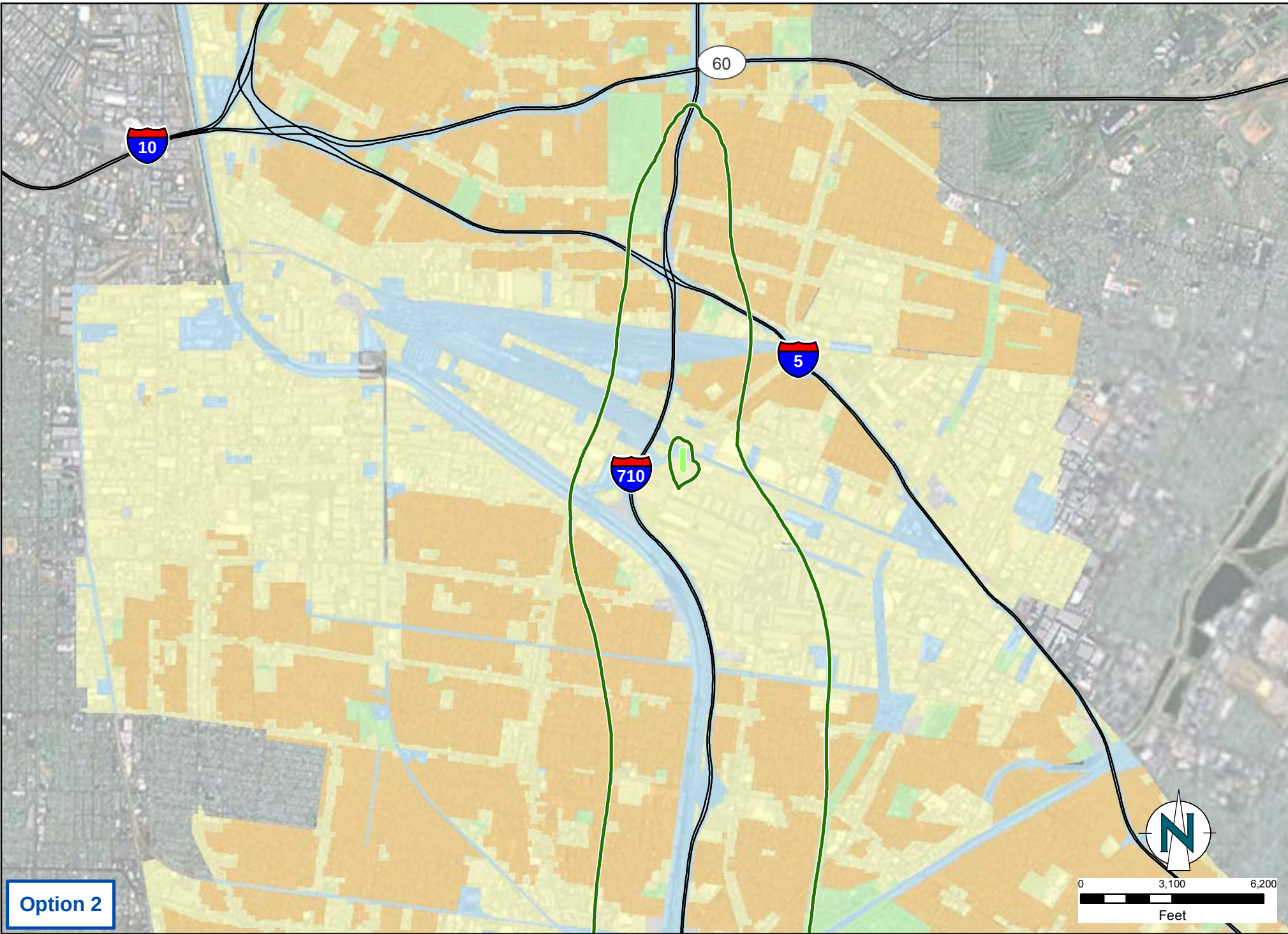
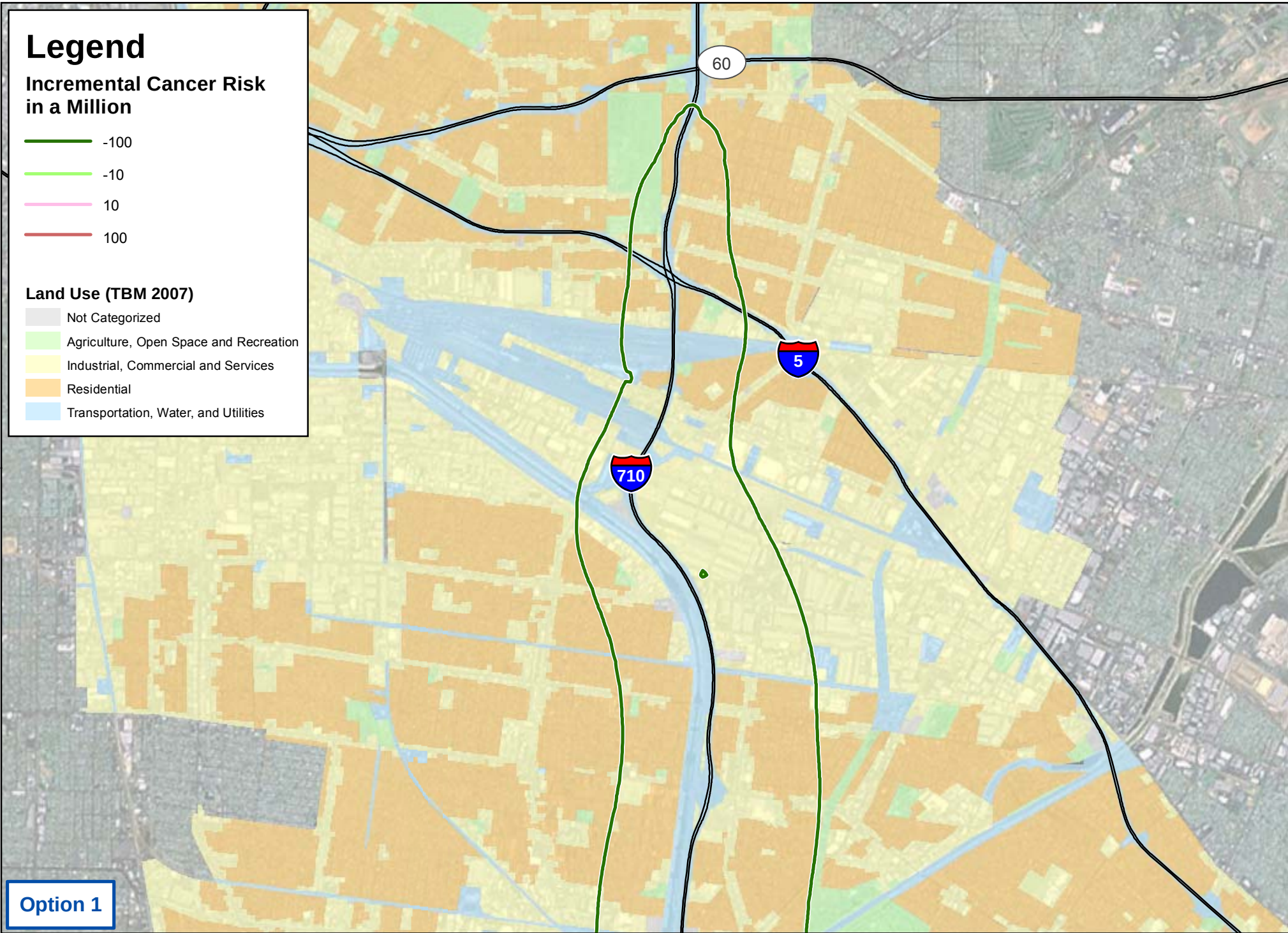


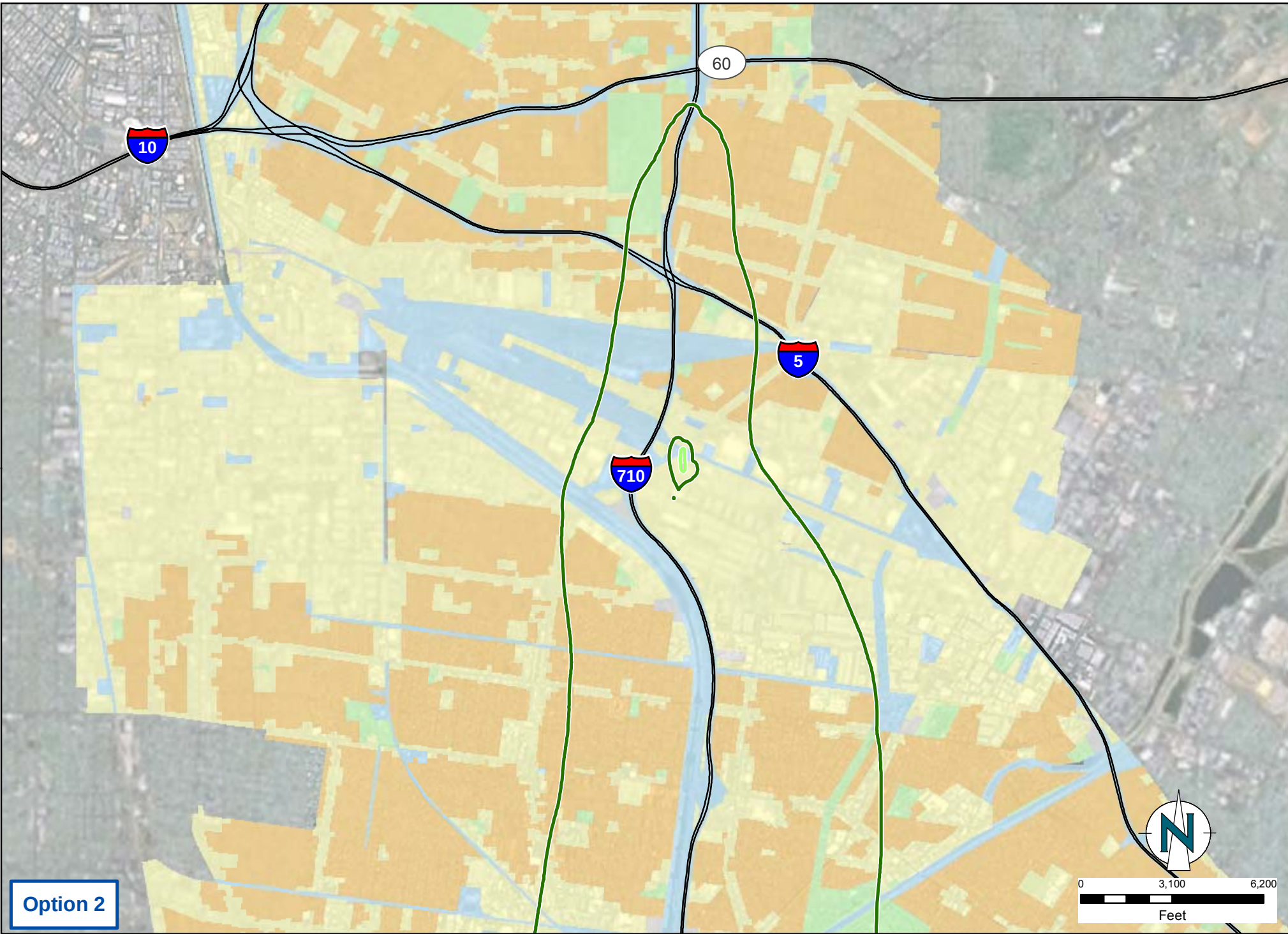
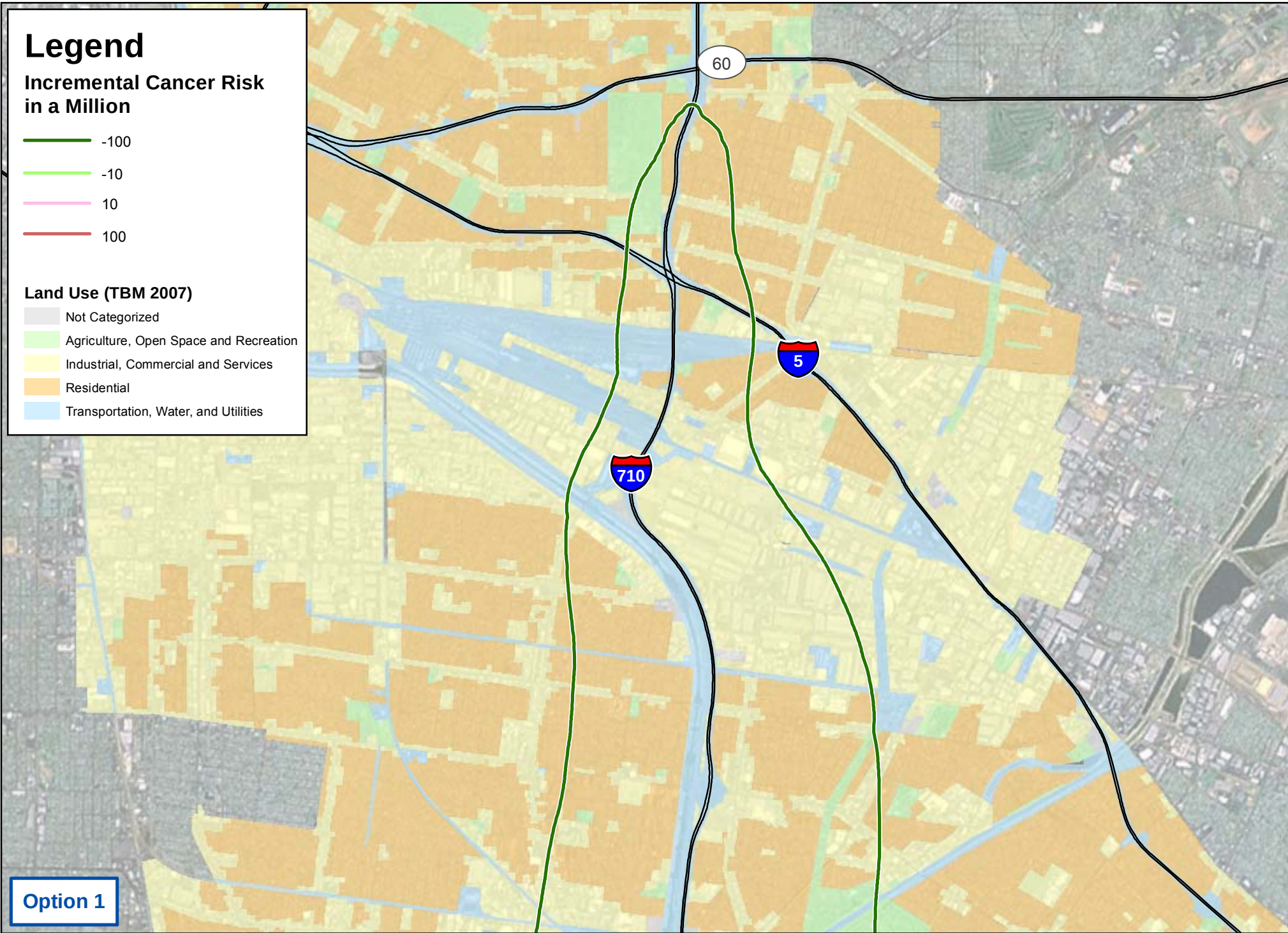


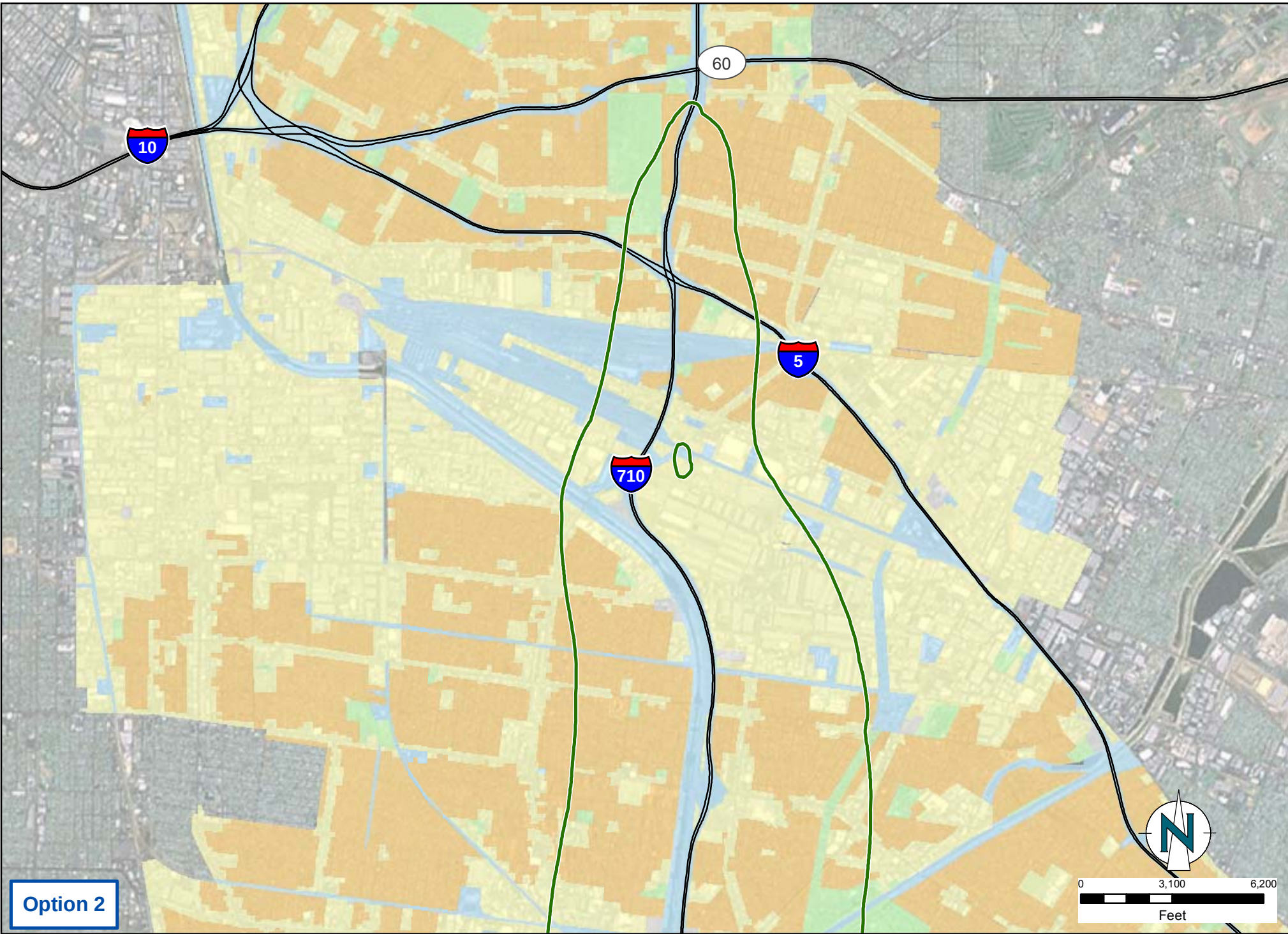
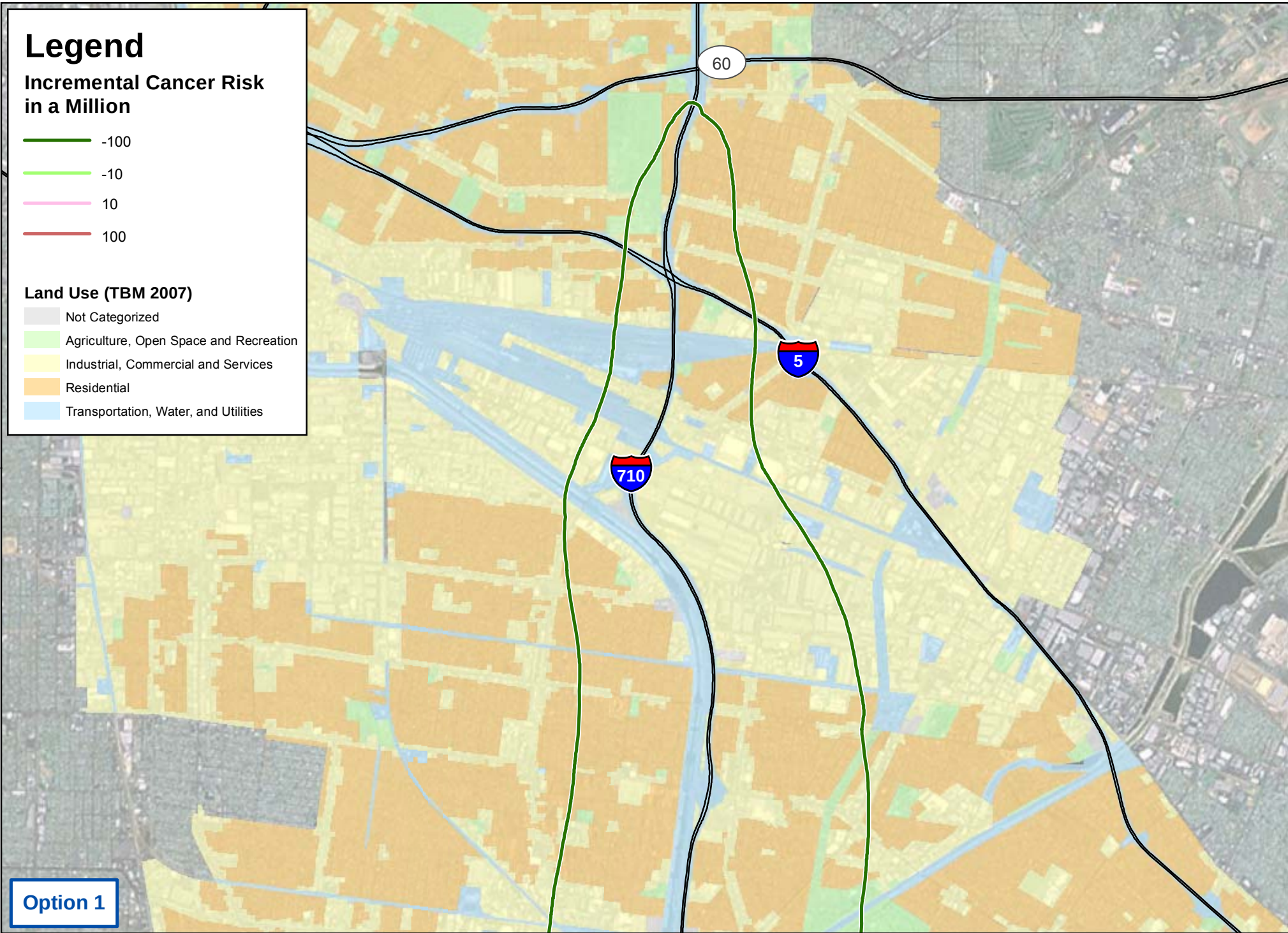












Appendix H

CO “Hot-Spot” Analyses



Carbon Monoxide Conformity
Technical Analysis Report
for the I-710 Corridor Environmental
Impact Report / Environmental Impact
Statement (EIR/EIS)

Prepared for:
URS Corporation
Santa Ana, California

Prepared by:
ENVIRON International Corporation
Irvine, California

Date:
February 3, 2012

Project Number:
05-18574E4

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- Attachment 1: CAL3QHC Modeling Files
- Attachment 2: Level of Service Tabulations

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1 Executive Summary

This document presents the findings of the project-level conformity technical analyses for carbon monoxide (CO) required by the federal Transportation Conformity Regulations for the I-710 Corridor Project.

Transportation conformity review at the project-level is required if the area in which a project is proposed is nonattainment or maintenance for CO and/or particulate matter. Requirements in 40 CFR 93.116 include that a transportation project must not cause or contribute to new CO violations, or increase the frequency or severity of any existing violations, or delay timely attainment of any NAAQS or any required interim emission reductions or other milestones in nonattainment and maintenance areas. The proposed I-710 project is located within an attainment/maintenance area for CO. Based on this designation a project-level conformity analysis is required for CO.

In general, the procedures outlined in the "Transportation Project-Level Carbon Monoxide Protocol" (commonly referred to as the "CO Protocol") were applied for the CO impact assessment. These steps included the following: determining the project is not exempt from review; is considered regionally significant; is within a nonattainment area; and is subject to a project-level review. The review included a screening-level analysis of affected intersections, and a detailed analysis using dispersion modeling. Through the interagency consultation process, the approach suggested in the CO Protocol was modified slightly to incorporate the use of the EPA-approved mobile source dispersion model CAL3QHC to model representative worst-case congested intersections throughout the project's Area of Interest (AOI).

Based on traffic study data, afternoon (PM) peak-hour data were considered the worst-case scenario and used as the basis for the intersection selection and "hot spot" modeling process. Because traffic conditions (delay) under Alternative 6B were generally worse compared to the other 'build' alternatives, modeling results associated with projected future conditions at 10 selected intersections under Alternative 6B were used to qualitatively assess the potential for traffic-related impacts of the project and its alternatives.

The hot spot analysis assessed the potential for localized CO impacts due to the project and whether the project alternatives would either cause violation of the CO ambient air quality standards, or exacerbate the air quality conditions to delay the progress of meeting attainment of the standard. Based on the modeling performed using EPA-approved methods, assumptions and tools and the traffic study data, the project or its alternatives would not cause CO concentrations to exceed the CO standards or delay the timely attainment of the standards.

2 Project Description

Interstate 710 (I-710, also known as the Long Beach Freeway) is a major north-south interstate freeway linking the Port of Los Angeles (POLA) and the Port of Long Beach (POLB) to Southern California and beyond. An essential component of the regional, statewide, and national transportation system, it serves both passenger and goods movement vehicles. As a result of population growth, expanded cargo container shipping, increasing traffic volumes, and aging infrastructure, the I-710 Freeway experiences serious congestion and safety issues. Moreover, the number of heavy duty trucks traveling along the I-710 corridor has also increased. As a result of this strain, I-710 is unable to accommodate current or future traffic demands.

In March 2005, the I-710 Major Corridor Study (MCS) was completed. This study addressed the I-710 mobility and safety needs and explored possible solutions for transportation system improvements. The study identified a community-based Locally Preferred Strategy freeway configuration consisting of ten general purpose lanes next to four separated freight movement lanes. The Los Angeles County Metropolitan Transportation Authority (Metro), the California Department of Transportation (Caltrans), the Gateway Cities Council of Governments (GCCOG), the Southern California Association of Governments (SCAG), POLA, POLB, and the I-5 Joint Powers Authority (JPA), are collectively known as the I-710 Corridor Project Funding Partners. These agencies are collectively funding the preparation of preliminary engineering and environmental documentation for the proposed I-710 Corridor Project.

The I-710 Corridor Project study area includes the portion of I-710 from Ocean Boulevard in Long Beach to SR-60, a distance of approximately 18 miles ([Figure 1](#), page 13). The study area extends one mile east and west of I-710 for the I-405, SR-91, I-105, and I-5 freeway-to-freeway interchanges. The I-710 Corridor Project also includes the major north/south arterials from Wilmington Avenue to the west to Lakewood Boulevard to the east. The alternative project configurations considered in this review are described further below.

Alternative 1 – No-Build Alternative

The No-Build Alternative does not include any improvements within the I-710 Corridor other than those projects already planned and committed to be constructed by or before 2035. The projects included in this alternative are based on SCAG's 2008 Regional Transportation Improvement Program (RTIP) project list, including freeway, arterial, and transit improvements within the SCAG region. This alternative also assumes that goods movement to and from the ports make maximum utilization of existing railroad capacity within the I-710 corridor. Alternative 1 is the baseline against which the Build Alternatives proposed for the I-710 Corridor were assessed. The existing I-710 freeway generally consists of eight general purpose (GP) lanes north of I-405 (four northbound and four southbound), and 6 GP south of I-405.

Alternative 5A – Freeway Widening up to 10 General Purpose Lanes

Alternative 5A would widen I-710 up to 10 GP lanes (five northbound and five southbound). Currently the design of the I-710 mainline includes 10 GP lanes throughout the entire corridor. This alternative would eliminate design deficiencies at the I-405 and SR-91 interchanges, reconfigure some local arterial interchanges throughout the corridor, eliminate freeway access

at three locations, and shift the freeway centerline at various locations to reduce right-of-way impacts.

In addition to improvements on the freeway mainline and on the interchanges, Alternative 5A also includes Transportation Systems/Transportation Demand Management (TSM/TDM), Transit, and Intelligent Transportation Systems (ITS) improvements. TSM improvements include provision of ramp metering at 13 locations, and improved signage throughout the project area. Parking restrictions during peak periods would be implemented on the following four arterial roadways: Atlantic Boulevard between Pacific Coast Highway and SR-60; Cherry Avenue/Garfield Avenue between Pacific Coast Highway and SR-60; Eastern Avenue between Cherry Avenue and Atlantic Boulevard; and Long Beach Boulevard between San Antonio Drive and Firestone Boulevard. Transit improvements would include increased service on all Metro Rapid routes and local bus routes in the study area and expanded existing community bus service (e.g., Montebello Transit, Compton Renaissance Transit System, East Los Angeles Shuttle). Rail transit improvements would include increased peak period service on the Blue and Green Lines and a station upgrade to the Commerce Metrolink station. Additionally, a new connection between the Green Line Norwalk station and the Metrolink Norwalk station would be provided to expand existing Metrolink service. ITS improvements include updated fiber optic communications.

Alternative 6A – 10 GP Lanes plus a Four-Lane Freight Corridor (FC)

Alternative 6A includes all the components of Alternatives 1 and 5A as described above. In addition, this alternative would include a separated four-lane freight corridor to be used by conventional trucks. It should be noted that in the future, trucks using this freight corridor are expected to be newer (i.e., post-2007) diesel/fossil-fueled trucks, with new or retrofitted engines required by regulations that will generate fewer emissions than the trucks using I-710 today.

The freight corridor would be an at-grade and/or elevated structure, with two lanes in each direction between Ocean Boulevard and the intermodal rail yards in the cities of Vernon and Commerce. There would be dedicated ingress and egress points at several locations.

Alternative 6B – 10 GP Lanes plus a Zero-Emissions Four-Lane Freight Corridor (FC)

Alternative 6B includes all the components of Alternative 6A described above, but would restrict the use of the freight corridor to Zero Emission Trucks rather than conventionally powered trucks. This technology would include, but not be limited to, battery powered trucks, trucks powered by overhead electrical lines, linear induction motor or linear synchronous motor systems (or other concepts), and/or future zero emission technologies to be designed as part of the freight corridor. Alternative 6B also includes the assumption that all trucks using the FC will have an automated control system that will steer, brake, and accelerate the trucks under computer control while traveling on the FC. This will safely allow for trucks to travel in "platoons" (e.g., groups of 6–8 trucks) and increase the capacity of the corridor from a nominal 2,350 passenger car equivalents per lane per hour (pces/lane/hr) (as defined in Alternative 6A) to 3,000 pces/lane/hr in Alternative 6B.

Alternative 6C – 10 GP Lanes plus a Four-Lane Freight Corridor with Tolls

Alternative 6C includes all the components of Alternative 6B as described above, but would toll trucks using the FC. Although tolling trucks in the FC could be done under either Alternative 6A or 6B, for analytical purposes, tolling has only been evaluated for Alternative 6B as this alternative provides for higher FC capacity than Alternative 6A due to the automated guidance feature of Alternative 6B.

Tolls would be collected using electronic transponders which would require overhead sign bridges and transponder readers like the SR-91 toll lanes currently operating in Orange County, where no cash toll lanes are provided. The toll pricing structure would provide for collection of higher tolls during peak travel periods.

3 Regulatory Setting

The Federal Clean Air Act as amended in 1990 (FCAA) set ambient air quality standards for the concentrations of pollutants allowed in the air to protect human health and welfare. These standards are called National Ambient Air Quality Standards (NAAQSs). Standards have been established for the following six "criteria" air pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), lead (Pb), and sulfur dioxide (SO₂). PM includes particulate matter less than 2.5 microns in size (PM_{2.5}) and particulate matter less than 10 microns in size (PM₁₀).

Based on monitoring information for these pollutants collected over a period of years, California and the US Environmental Protection Agency (EPA) designate regions as being "attainment" or "nonattainment" areas. Attainment status is therefore a measure of whether air quality in an area complies with the federal health-based ambient air quality standards for specific criteria pollutants. Once a nonattainment area achieves compliance with the NAAQSs, the area is considered an air quality "maintenance" area. [Table 1](#) presents applicable ambient air quality standards for the pollutants discussed in this report.

If an area is designated as nonattainment, the FCAA requires states take actions to reduce air pollution so that federal health-based standards are not exceeded. States must also provide control measures in maintenance areas to assure attainment of the standards for at least ten years. The framework for meeting these goals is the State Implementation Plan (SIP).

Conformity with an implementation plan is defined as complying with a plan's purpose of maintaining the ambient air quality standards. The federal rules and regulations governing conformity are described in the Code of Federal Regulations, Chapter 40 Parts 51 and 93. Transportation conformity with the FCAA takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Table 1. Applicable National Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Terms of Compliance (a)	Concentration
Inhalable Particulate Matter (PM₁₀)		
24-Hour Average (µg/m ³)	The 3 year average of the 99 th percentile (based on the number of samples taken) of the daily concentrations must not exceed	150 µg/m ³
1997 Standard		
Fine Particulate Matter (PM _{2.5})		
Annual Average (µg/m ³)	The 3-year annual average of daily concentrations must not exceed	15 µg/m ³
24-Hour Average (µg/m ³) ^b	The 3-year average of the 98 th percentile of daily concentrations must not exceed	65 µg/m ³
2006 Standard		
Fine Particulate Matter (PM _{2.5}) ^b		
Annual Average (µg/m ³)	The 3-year annual average of daily concentrations must not exceed	15 µg/m ³
24-Hour Average (µg/m ³)	The 3-year average of the 98 th percentile of daily concentrations must not exceed	35 µg/m ³

Table 1. Applicable National Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Terms of Compliance (a)	Concentration
<u>Carbon Monoxide (CO)</u>		
8-Hour Average (ppm)	The 8-hour average must not exceed more than once per year	9 ppm
1-Hour Average (ppm)	The 1-hour average must not exceed more than once per year	35 ppm
<u>Ozone (O₃)</u>		
8-Hour Average (ppm)	The 3-year average of the 4 th highest daily maximum 8-hour average must not exceed	0.075 ppm
<u>Nitrogen Dioxide (NO₂)</u>		
1-Hour Average (ppm)	The 3-year average of the 98 th percentile of daily maximum 1-hour average concentrations must not exceed	100 ppb
Annual	Arithmetic Average	53 ppb
Note: $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; ppm = parts per million; ppb = parts per billion (a) All limits are federal air quality standards. All indicated limits represent "primary" air quality standards intended to protect human health. (b) The 2006 PM _{2.5} standard became effective December 18, 2006 from 65 $\mu\text{g}/\text{m}^3$ to 35 $\mu\text{g}/\text{m}^3$; designations of nonattainment areas based on the revised standard became effective December 14, 2009. Source: ENVIRON International Corporation		

Regional level transportation conformity in California is concerned with how well the region is meeting the standards set for the criteria air pollutants CO, NO₂, ozone (O₃), and fine inhalable particulate matter (PM₁₀ and PM_{2.5}). California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans (RTPs) are developed that include all of the transportation projects planned for a region over a period of years. Based on the projects included in the RTP, an air quality model is run to determine whether or not implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the FCAA are met. Otherwise, projects in the RTP must be modified until conformity is achieved. If the regional conformity analysis is successful, the regional planning organization, in this case the South Coast Association of Governments (SCAG, representing six counties including Los Angeles County and all of the South Coast Air Basin, SCAB or Basin), and the appropriate federal agencies, such as the Federal Highway Administration (FHWA), make the conformity determination. In this instance, the SCAG's 2008 RTP, entitled *Making the Connections*, was determined to be in conformity with the State Implementation Plan (SIP) for achieving the goals of the FCAA.

Once regional conformity has been achieved, if the design and scope of a proposed transportation project are the same as considered in the RTP, the project is deemed to meet regional conformity requirements. Regional conformity for this project is discussed in Section 7 of this report.

Transportation conformity review at the project-level is required if the area in which the project is proposed is nonattainment or maintenance for CO and/or particulate matter. Requirements in 40 CFR 93.116 include that the transportation project must not cause or contribute to new CO violations, or increase the frequency or severity of any existing violations, or delay timely attainment of any NAAQS or any required interim emission reductions or other milestones in nonattainment and maintenance areas. This report focuses on the project level conformity review for CO.

The proposed I-710 project is located within an attainment/maintenance area for CO. Based on this designation a project-level conformity analysis is required for the following NAAQSs:

- The 1-hour and 8-hour CO standards

4 Existing Air Quality

The project study area (the Area of Interest or AOI) encompasses several cities along its 18-mile stretch, and there are several relevant ambient air monitoring stations located within the project study boundaries. Some monitoring stations are located near the major ports and near the residential and commercial communities close to the coast, such as North Long Beach. Others are further inland and less affected by coastal climate and wind, such as the Lynwood/Compton air monitoring stations. And still others are further inland, such as the Los Angeles North Main Street station. CO data from these stations were considered to characterize the existing air quality environment within the project area. These air quality monitoring stations are depicted in [Figure 1](#) (Page 13).

4.1 Carbon Monoxide (CO)

CO is measured at several stations within the project AOI, and measured CO levels within the AOI have shown a steady decline for several years. This is a result of cleaner fuels, technological advances to reduce pollution from vehicles, and the steady replacement of older, more pollutant-emitting vehicles. Measured CO concentrations have not exceeded the two applicable NAAQS ([Table 1](#)) for several years, and are at least 50% lower than the NAAQS. Data for relevant ambient air monitoring stations are presented in [Table 2](#).

Table 2. Monitored CO Data from Relevant Stations within the AOI (ppm)

Station/ Averaging Period	2006	2007	2008	2009	2010
POLB Superblock					
1-hour	5.7	4.7	4.4	4.7	4.4
8-hour	4.4	3.4	3.4	3.3	2.6
Long Beach North					
1-hour	4.2	3.3	3.3	2.9	3.2
8-hour	3.4	2.6	2.5	2.2	2.1
Lynwood/Compton ^(a)					
1-hour	8.4	7.8	5.8	6.5	6.0
8-hour	6.2	5.3	4.3	4.6	3.6
Los Angeles North Main Street					
1-hour	3.5	3.2	2.9	2.7	2.7
8-hour	2.7	2.2	2.0	2.2	2.3

Note:

Values are in parts per millions, ppm, and are the maximum values recorded at each site.

Bold values represent the worst case maximum concentration in the AOI over the last 2 years. These concentrations were used as background concentrations for CO hot spot modeling.

(a) The Lynwood station was dismantled in late 2008 and relocated to a new site in Compton.

Sources: US EPA AIRS database (<http://www.epa.gov/air/data/index.html>) and CARB's Air Quality Data Statistics website (<http://www.arb.ca.gov/adam/welcome.html>) Accessed 2011.

5 Carbon Monoxide Hot Spot Analysis

5.1 Methodology and Assumptions

In general, the procedures outlined in the "Transportation Project-Level Carbon Monoxide Protocol" (commonly referred to as the "CO Protocol," University of California at Davis, Revised December 1997, UCD-ITS-RR-97-21) were applied for the CO impact assessment. These steps included the following: determining the project is not exempt from review; is considered regionally significant; is within a nonattainment area; and is subject to a project-level review. The review included a screening-level analysis of affected intersections, and a detailed analysis using dispersion modeling. Through the consultation process, the approach suggested in the CO Protocol was modified slightly to incorporate the use of the EPA-approved mobile source dispersion model CAL3QHC.¹ CAL3QHC is designed to calculate pollutant concentrations caused by transportation sources during "free-flow" and "queue" conditions using vehicle emission rates (from EMFAC2007) together with intersection geometry, wind direction, and other meteorological factors. The emissions rates calculated by EMFAC2007 were modified to reflect specific inputs required for the CAL3QHC model.² The calculated peak-hour CO concentrations near the most project-affected intersections (described below) were used to assess compliance with ambient air quality standards and the conformity rule.

5.1.1 Intersection Selection

The air quality conformity review for CO considered potential air quality impacts in accord with US EPA air quality "hot spot" modeling guidelines and the CO Protocol. Based on these guidelines, signalized intersections were screened for possible air quality dispersion modeling by reviewing the predicted future intersection peak hour traffic levels of service (LOS – the weighted average delay) and the cumulative average intersection delay. EPA guidance suggests signalized intersections with an LOS "D" or worse be considered for inclusion in dispersion modeling, with an emphasis on selecting those intersections with the greatest potential to indicate adverse impact and effects from a proposed project.

The intersections included in the hot spot modeling analysis were selected based on the following factors:

- Total cumulative peak-hour delay (total intersection volume * weighted average vehicle delay)
- The expected change in peak-period delay between the future No-Build condition and the various project build alternatives

¹ US EPA, 1992, *User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations near Roadway Intersections*, Office of Air Quality Planning and Standards, Technical Support Division, Research Triangle Park, NC, November, 1992. EPA-454/R-92-006

² The EMFAC2007 model does not calculate idling emissions for most vehicle types other than trucks. Consultation with ARB indicated the appropriate means of calculating idle emission rates for other vehicles was application of the standard US EPA guidance method of multiplying the EMFAC-calculated emission rate from the 2.5 mph speed bin by 2.5 (*EPA Mobile5 Information Sheet #2, Estimating Idle Emission Factors Using Mobile5*, July 30, 1993). Vehicle idle emission rates were then included in the calculated composite vehicle emission rates employed in the CAL3QHC dispersion modeling based on vehicle classification distribution patterns.

- Geographic location (to spatially distribute the analysis throughout the project study area)

LOS data from the traffic studies indicate the PM peak-hour is generally the worst-case condition during the day (i.e., the time period with the most LOS F intersections). Thus PM peak-hour data were considered in the intersection selection and modeling process. As the first step in the selection process, all intersections were ranked in descending order of cumulative peak-hour delay because idling vehicles emit the most air pollutants and would have the greatest potential to result in hot spots.

Total cumulative delay is higher under Alternative 6B than under Alternative 5A, 6A, or 6C based on the ranked results of the worst 20 intersections. In addition, six intersections consistently ranked among the highest (i.e., most congested) under the Build alternatives. From an air quality perspective, this finding suggests that these six intersections are likely to have the greatest potential for air quality concerns in the project study area even though the project would improve traffic conditions substantially at three of these intersections. The most congested intersections based on cumulative delay (total hours during the PM peak for Alternative 6B) that were considered for inclusion in the air quality analysis were as follows:

1. #38 Del Amo Blvd @ Lakewood Blvd (397 hours)
2. #60 Firestone Blvd @ Atlantic Ave (374 hours)
3. #155 Wilmington @ 223rd (307 hours)
4. #44 Alondra Blvd @ Garfield Ave (275 hours)
5. #23 Pacific Coast Hwy @ Cherry Ave (269 hours)
6. # 148 Wardlow @ Cherry Ave (258 hours)

Because the study area encompasses a large and diverse geographic area, a subset of the most congested and most project-affected intersections in different locations along the project corridor were also selected for hot-spot modeling. The intent was to represent potential air quality conditions in a variety of neighborhoods and geographic locations, and especially in residential areas throughout the project area and not just near the worst case locations. This approach incorporated additional intersections into the air quality conformity analysis than are actually required, and a total of 10 signalized intersections were included in the hot-spot modeling analysis. The remaining intersections selected for analysis are:

- #26 Willow St. @ Santa Fe Ave
- #34 Del Amo Blvd @ Santa Fe Ave
- #140 Ocean Blvd @ Golden Shore St.
- #157 Garfield Ave @ Gage Ave

The 10 selected intersections represent the worst-case operational conditions and the most project-affected intersections in representative geographic locations throughout the study area. A summary of the 20 worst performing intersections based on cumulative delay in 2035 is

presented in [Table 3](#).³ (The complete list of intersections considered for inclusion in the air quality conformity review for carbon monoxide is included in the [Attachments](#) of this report.) The selected intersections are highlighted in [Table 3](#) below and depicted in [Figure 1](#) (Page 13). Note that the numbered intersection designations are from the traffic impact studies, and that these numbers have been maintained for consistency.

Table 3. Intersection Summary LOS and Delay, PM-Peak

ID	Intersection	2008	2035							
		Existing	Alternative 1		Alternative 5A		Alternative 6A		Alternative 6B	
		LOS/ Delay (secs)	LOS/ Delay (secs)	Total Delay (hrs)	LOS/ Delay (secs)	Total Delay (hrs)	LOS/ Delay (secs)	Total Delay (hrs)	LOS/ Delay (secs)	Total Delay (hrs)
38	Del Amo Blvd @ Lakewood Blvd	F / 180	F / 314	722	F / 176	391	F / 177	392	F / 178	397
60	Firestone Blvd @ Atlantic Ave.	F / 127	F / 247	525	F / 199	403	F / 191	3869	F / 186	374
155	Wilmington @ 223rd	F / 130	F / 170	311	F / 167	312	F / 154	286	F / 165	3007
44	Alondra Blvd @ Garfield Ave.	F / 82	F / 86	109	F / 235	386	F / 159	267	F / 164	275
23	PCH @ Cherry Ave.	C / 21	F / 206	377	F / 146	261	F / 150	267	F / 150	269
148	Wardlow @ Cherry Ave.	E / 70	F / 89	114	F / 138	197	F / 167	256	F / 170	258
42	Alondra Blvd @ Long Beach Blvd.	D / 43	E / 68	80	F / 135	120	F / 161	247	F / 157	240
22	PCH @ Atlantic Ave.	D / 36	D / 48	65	F / 146	178	F / 133	218	F / 138	227
34	Del Amo Blvd @ Santa Fe Ave.	E / 59	E / 76	104	F / 97	150	F / 139	217	F / 138	215
157	Garfield Ave. @ Gage Ave	D / 47	D / 48	55	F / 92	129	F / 128	181	F / 136	177
19	PCH @ Santa Fe Ave.	F / 116	F / 243	369	F / 143	182	F / 109	136	F / 109	136
45	Alondra Blvd @ Paramount Blvd.	E / 58	E / 74	92	F / 125	191	F / 104	154	F / 103	152
26	Willow St @ Santa Fe Ave.	D / 53	F / 135	199	F / 141	2211	F / 106	148	F / 107	150
159	38th St @ Santa Fe	C / 29	D / 54	58	D / 51	56	F / 129	156	F / 121	144

³ The traffic study was provided by URS Corporation, August 03, 2011.

Table 3. Intersection Summary LOS and Delay, PM-Peak

ID	Intersection	2008		2035							
		Existing	Alternative 1			Alternative 5A		Alternative 6A		Alternative 6B	
		LOS/ Delay (secs)	LOS/ Delay (secs)	Total Delay (hrs)	LOS/ Delay (secs)	Total Delay (hrs)	LOS/ Delay (secs)	Total Delay (hrs)	LOS/ Delay (secs)	Total Delay (hrs)	
	Blvd.										
71	Alondra Blvd @ Paramount Blvd.	E / 58	F / 93	129	F / 108	166	F / 88	138	F / 86	135	
43	Alondra Blvd @ Atlantic Ave.	C / 35	D / 48	54	F / 93	124	F / 91	125	F / 95	130	
21	PCH @ Long Beach Blvd.	D / 43	F / 111	163	E / 80	114	E / 78	112	E / 80	114	
41	Alondra Blvd @ Santa Fe Ave.	D / 53	E / 64	67	F / 90	104	F / 95	109	F / 94	108	
214	Imperial Hwy @ Wright Rd.	--	F / 190	267	C / 26	31	E / 78	105	E / 79	105	
224b	I-710 NB/26th St @ Bandini Blvd (#3)	--	--	--	--	--	--	--	E / 73	70	
140	Ocean Blvd @ Golden Shore St.	C / 21	D / 51	53	E / 67	91	E / 64	87	E / 68	93	
Note: Table lists top-20 ranked signalized intersections within the AOI, ranked by total delay under Alternative 6B during the PM-Peak where total (cumulative) delay is calculated as volume * average vehicle delay. Sources: Traffic Study Data from URS Corp. 2011.											

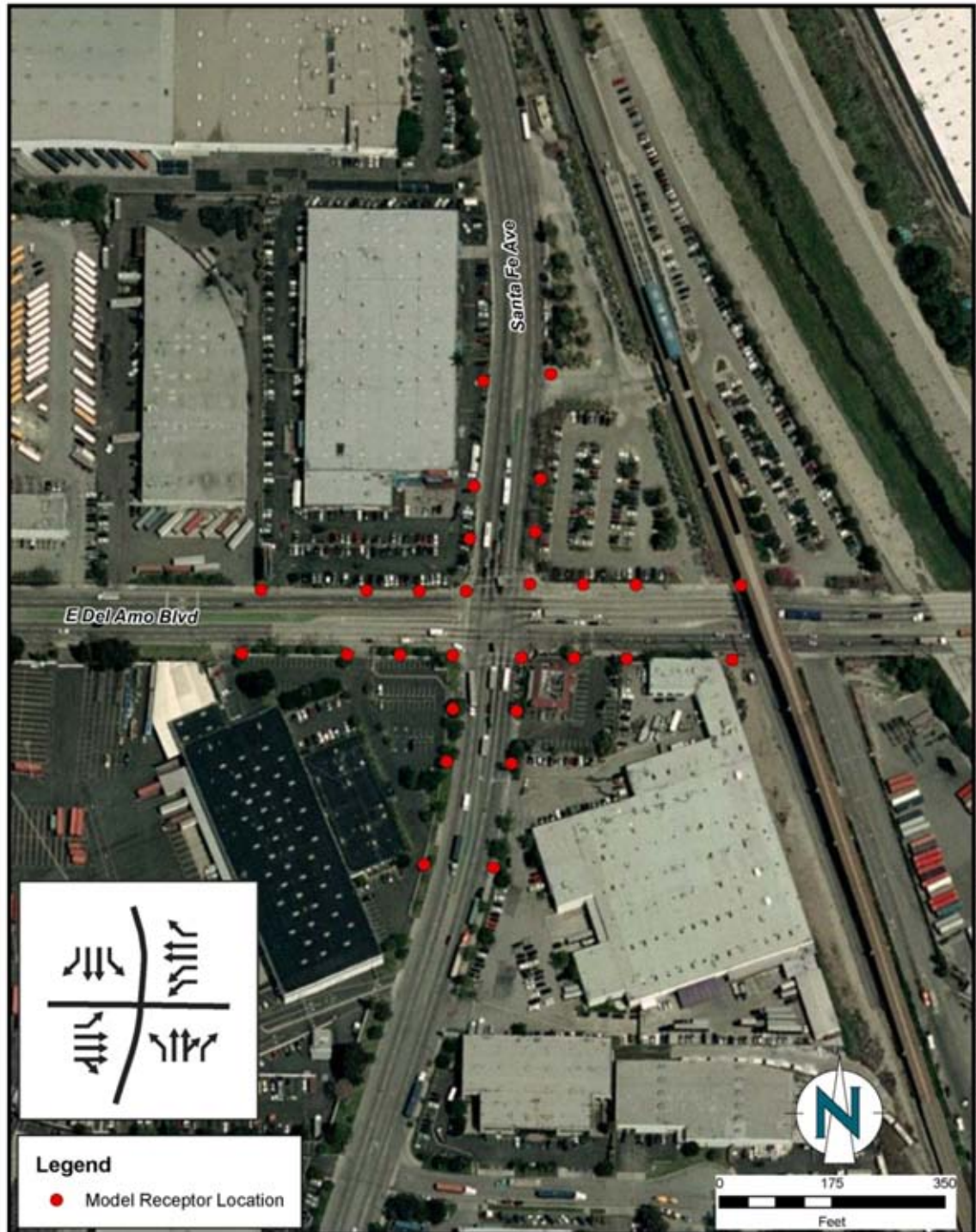
The following assumptions and parameters were used in the CAL3QHC modeling and are consistent with the EPA guidance for dispersion modeling (EPA 1992) and to some extent guidance from the CO protocol.

- Critical meteorological parameters were a 3280.8 feet mixing height, low wind speed (3.28 feet/second), and a slightly stable atmosphere (Class E) and surface roughness of 175 cm representing city office land use.
- The modeling evaluated 72 wind directions (in 5-degree increments) to ensure worst-case conditions were considered for each receptor location.
- A "background" 1-hour CO concentration of 6.5 ppm was added after modeling existing and future scenarios.⁴ An 8-hour CO background concentration of 4.6 ppm was added to 1-hour modeled values after applying a persistence factor (see next item). Background concentrations are intended to represent other sources (i.e., non-traffic) in the project area not included in the modeling.
- Model-calculated 1-hour concentrations were converted to represent 8-hour concentrations using a "persistence factor" (i.e., the ratio of 8-hour to 1-hour CO concentrations) to represent variability in both traffic volumes and meteorological conditions. An EPA default persistence factor of 0.7 was used.
- The p.m. peak-hour traffic conditions provided by the traffic studies would lead to the highest possible 1-hour and 8-hour CO concentrations.
- The modeling configuration considered road links extending up to 1,000 feet from most intersections. Using the procedures required for the CAL3QHC dispersion model, both free flow and queue links were configured approaching and departing the intersections evaluated. Near road receptors were placed 10 feet, 82.5 feet, 165 feet, and 330 feet from cross streets, 10 feet from the nearest traffic lane, and 5.7 feet above the ground to correspond to a typical sidewalk location at breathing height. Modeling considered up to 40 near-road receptors near each intersection.⁵ An example of model receptor placement is included in [Figure 2](#) (Page 15).
- Future designs of several intersections considered in the modeling are conceptual configurations based on the number of lanes and turn pockets applied during traffic function modeling. Professional judgment was used to configure these intersections in lieu of specific designs which will not be developed until a later time.

⁴ The AQMD CEQA guidance suggests using projected 1-hour and 8-hour CO concentrations. These values are out of date because the models and assumptions used to generate these values have been improved, and measured values at corresponding stations are actually lower than the 2010 projected values. Therefore, ENVIRON applied the highest measured value for each standard over the past 2 years from within the AOI as background. The monitoring data include the effects of emissions from existing traffic sources, so this background value is to some degree "double-counting," and is likely conservatively high even with expected growth in vehicle miles traveled by 2035.

⁵ ENVIRON used a custom spreadsheet interface to populate the model input file. The interface includes an algorithm to calculate proper placement of receptors along the travel links based on the intersection corners and angles of travel lanes. Because the receptors must be placed beyond the mixing zone of the model, not all model receptors are placed as close as physically possible to each roadway, but instead using sidewalk locations and further away from the road where the public would possibly have access.

Figure 2. Example Intersection Modeling Receptor Locations



		Model Receptor Locations at Intersection 34	Figure 2
DRAFTED BY: MMM	DATE: 04/01/10		PROJECT: 05-18574A09

- The years of analysis included the baseline year 2008 and the build-out year 2035 (the year when the corridor is expected to be complete and fully functional).⁶
- Emission factors were generated using EMFAC2007. Idle emissions factors calculated by ENVIRON are 21.1 g/sec in 2008 and 8.4 g/sec in 2035. Speeds approaching and departing intersections were assumed at 35 mph. Emissions factors corresponding to 35 mph are 3.1 g/sec in 2008 and 0.8 g/sec in 2035.

5.2 CO Impacts

Dispersion modeling was performed for the existing year 2008 and design year 2035. Because Alternative 6B represents the worst-case build alternative, (i.e., the worst performing conditions and the most cumulative delay for the selected intersections), the modeling effort considered only Alternative 6B. Alternatives 5A, 6A and 6C were qualitatively compared to the worst-case scenario. Based on the modeling results, maximum model-predicted CO concentrations near the selected intersections remained well below the 1-hour and 8-hour CO ambient standards under existing conditions and in 2035 with and without the project. Modeling results are presented in [Table 4](#) (page 30) and discussed below.

5.2.1 Existing Conditions

Maximum model-predicted CO concentrations under existing traffic conditions and worst-case meteorology are well below the 1-hour and 8-hour 35 ppm and 9 ppm NAAQS respectively. This is consistent with measured values reported at ambient air monitoring stations within the AOI.

5.2.2 Alternative 1 – No-Build

In 2035, traffic conditions at the worst-performing intersections deteriorate due to increasing volumes and increasing delay. However, vehicle emission factors decrease substantially from 2008 values. Despite worse operating conditions, modeled results improve in 2035 compared to existing values. This is a result of projected engine technology improvements, pollution control measures on vehicles, cleaner fuels and replacement of older vehicles as they age and are removed from service. All maximum-predicted CO concentrations near the selected intersections remain below the 1-hour and 8-hour NAAQS.

5.2.3 Alternative 5A

Traffic conditions (delay) at the selected intersections both improve and deteriorate under Alternative 5A compared to the No-Build alternative, but are similar or slightly better than under Alternative 6B. It is likely that because traffic conditions are similar or slightly better, air quality conditions would be similar to those under Alternative 6B (described below). Using Alternative 6B as an indicator, it is likely that CO concentrations would be similar to No-Build and slightly less than existing conditions. Because maximum-predicted modeling concentrations remain well

⁶ The year 2035 is assumed to be both the opening year (construction would not be complete until 2029 at best) and also the design year, since there are no regional forecasts beyond 2035. The ongoing direction from Caltrans was to use the same assumptions in the I-710 modeling/analysis as for the I-5 project, which used 2035 as both the opening year and design year. The use of 2035 as the design year was reaffirmed by Ron Kosinski at the I-710/I-5 coordination meeting on July 7, 2009. Email from Rob McCann (LSA Associates) to Garret Damrath (Caltrans) Tuesday, February 23, 2010

below the CO standards, it is reasonable to conclude that CO concentrations under Alternative 5A would also remain below the NAAQS.

5.2.4 Alternative 6A

Similar to Alternative 5A, traffic conditions under Alternative 6A both improve and deteriorate at the project-selected intersections compared to No-Build conditions and are similar or slightly better compared to Alternative 6B. Again, using model-predicted concentrations from Alternative 6B as an indicator, it is likely that CO concentrations would be similar to No-Build and slightly less than existing conditions. Because maximum-predicted modeling concentrations remain well below the CO standards, it is reasonable to conclude that CO concentrations under Alternative 6A would also remain below the NAAQS.

5.2.5 Alternative 6B

Under Alternative 6B, traffic conditions both improve and deteriorate at the project-selected intersections compared to No-Build conditions. However, model-calculated maximum concentrations remain similar to No-Build model-predicted concentrations. This suggests that although the project traffic conditions change, the project would not affect the air quality based on CO concentrations near these intersections. Similar to other alternatives, model-predicted concentrations are slightly lower than under existing conditions, and all values are well below the 1-hour and 8-hour ambient standards.

5.2.6 Alternative 6C

Similar to other alternatives, traffic conditions at the selected intersections both improve and deteriorate under Alternative 6C compared to the No-Build alternative, with similar or slightly better traffic conditions than under Alternative 6B. It is likely that because traffic conditions are similar or slightly better, air quality conditions would be similar to those under Alternative 6B and concentrations would also remain below the NAAQS. Based on that assumption, it is reasonable to conclude that modeled concentrations would also be the same as those presented in [Table 4](#) for Alternative 6B.

5.3 Summary

The hot spot analysis assessed the potential for localized CO impacts due to the project and whether the project alternatives would either cause a violation of the CO ambient air quality standards, or exacerbate the air quality conditions to delay the progress of meeting attainment of the standard. Based on the modeling performed using EPA-approved methods, assumptions and tools and the traffic study data, the project or its alternatives would not cause CO concentrations to exceed the CO standards or delay the timely attainment of the standard.

Table 4. Maximum Predicted CO Concentrations

Intersection	Averaging Period	2008 Existing	2035 Alt. 1 No-Build	2035 Alt. 6B
#157 Garfield Ave at Gage Ave	1-hour	7.6	7	7
	8-hour	5.4	5.0	5.0
#26 Willow St. at Santa Fe Ave	1-hour	7.4	6.9	6.9
	8-hour	5.2	4.9	4.9
#34 Del Amo Blvd at Santa Fe Ave	1-hour	7.5	6.9	6.9
	8-hour	5.3	4.9	4.9
#44 Alondra Blvd at Garfield Ave	1-hour	7.4	6.8	6.8
	8-hour	5.2	4.8	4.8
#155 Wilmington at 223rd	1-hour	7.4	6.9	7
	8-hour	5.2	4.9	5.0
#38 Del Amo Blvd at Lakewood Blvd	1-hour	7.7	6.9	6.9
	8-hour	5.4	4.9	4.9
#23 Pacific Coast Hwy at Cherry Ave	1-hour	7.4	7	6.9
	8-hour	5.2	5.0	4.9
#60 Firestone Blvd at Atlantic Ave	1-hour	7.4	6.9	6.9
	8-hour	5.2	4.9	4.9
#148 Wardlow at Cherry Ave	1-hour	7.3	6.8	6.8
	8-hour	5.2	4.8	4.8
#140 Ocean Blvd @ Golden Short St.	1-hour	7.4	6.9	6.9
	8-hour	5.2	4.9	4.9
Notes: Background value of 6 ppm was added to the 1-hour concentrations for existing and 2035 and then the EPA default persistence factor 0.7 was applied The 1-hour and 8-hour NAAQS for CO are 35 ppm and 9 ppm respectively. Source: ENVIRON International Corp., 2011				

6 Mitigation

The I-710 Corridor Project alternatives are intended to improve congestion within the Los Angeles – Long Beach corridor due to heavy diesel vehicles traveling to and from the Ports. Several improvements have also been incorporated in the project's alternatives regarding intersection congestion. These improvements have been considered as part of this analysis. Because air quality impacts due to CO are not likely, no additional mitigation measures are proposed.

7 CO Conformity Determinations

7.1 Regional

The I-710 Corridor Project is included in the 2008 RTP as project 1C0401 which has been considered with the RTP's regional conformity analysis. The project has also been included in the Federal Transportation Improvement Plan (2011 FTIP) as project LA0B952, which has also been deemed to conform to the SIP. However the project description in the FTIP is not consistent with the I-710 Corridor Project details. At this time the project traffic consultant has requested reconciliation on this matter with the SCAG but that process has not been completed. The proposed project must be considered fully in the most recent RTP and the 2011 FTIP regional conformity review before regional conformity is achieved. This is likely to occur prior to the project's Record of Decision in early 2013. Thus, the regional conformity determination cannot be made at this time, pending the outcome of the reconciliation request.

7.2 Project-Level

The following project-level CO conformity statement applies to the I-710 Corridor Project:

Local CO concentrations from traffic affected by the I-710 Corridor Project and alternatives were predicted using regulatory models. With the proposed project in its design year (2035) the maximum model-predicted 8-hour CO concentration near the most congested intersections is less than 6 ppm, which is less than the ambient air quality standard. Maximum model-predicted 1-hour concentrations in the design year are also less than the 35-ppm 1-hour CO standard. The project, therefore, would not cause violations of the 1-hour or 8-hour standards for CO in years 2035. Based on a project-level review of the potential air quality implications of the I-710 Corridor Project, the proposed project and its alternatives conform at a project-level with the air quality conformity requirements under state and federal air quality laws. As such, the project would not cause a new violation of an air quality standard, nor would it prolong the time required to attain a standard.

8 References

- 40 CFR Part 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans, (<http://www.gpoaccess.gov/ecfr/>)
- 40 CFR 93.116, Criteria and procedures: Localized CO, PM₁₀, and PM_{2.5} violations (hot-spots), (<http://www.gpoaccess.gov/ecfr/http://www.gpoaccess.gov/ecfr/>)
- 40 CFR 93.123, Procedures for determining localized CO, PM₁₀, and PM_{2.5} concentrations (hot-spot analysis), (<http://www.gpoaccess.gov/ecfr/http://www.gpoaccess.gov/ecfr/>)
- California Air Resources Board (CARB), Air Quality Data Statistics website (<http://www.ar.ca.gov/admin/welcome.html>), Accessed 2011
- California Department of Transportation (CALTRANS), Standard Environmental Reference, Volume 1 Chapter 11 Air Quality, (<http://www.dot.ca.gov/ser/vol1/sec3/physical/ch11air/chap11.htm>)
- San Pedro Bay Ports Clean Air Action Plan, summary air quality data reports at (<http://caap.airsis.com/Reports.aspx>).
- Transportation Project-Level Carbon Monoxide Protocol, University of California at Davis, Revised December 1997, UCD-ITS-RR-97-21
- United States Environmental Protection Agency (USEPA), MOBILE5 Information Sheet #2: Estimating Idle Emissions Factors Using MOBILE5, July 30, 1993
- , 2011. AIRS Database, (<http://www.epa.gov/air/data/index.html>)

Attachment 1

CAL3QHC Modeling Files

CAL3QHC model files not included in this
report; files available electronically upon
request

Attachment 2

Level of Service Tabulations

ID	Main Street	Cross Street	City	Traffic Control Device	Existing Condition Analysis						2035 Alt 1 (No Build) Analysis						2035 Alt 5A Analysis						2035 Alt 6A Analysis						2035 Alt 6B Analysis						2035 Alt 6C Analysis					
					AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak	
					Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Shoreline Dr	Queens Way	Long Beach	Signalized	12.3	B	11.6	B	10.9	B	13.2	B	12	B	11.7	B	12.5	B	10.5	B	11.6	B	13.7	B	12.6	B	13.2	B	13.7	B	12.6	B	13.1	B	13.7	B	12.6	B	13.1	B
2	Ocean Blvd	Magnolia Ave	Long Beach	Signalized	18.9	B	12.8	B	--	--	60.8	E	58.8	E	--	--	41.6	D	40.1	D	--	--	31.4	C	27.4	C	--	--	33.5	C	28.9	C	--	--	31.5	C	26.8	C	--	--
3	Broadway	Maine Ave	Long Beach	Signalized	22.5	C	25.1	C	--	--	23.0	C	20.0	B	--	--	23.0	C	20.2	C	--	--	23.5	C	18.9	B	--	--	23.5	C	17.3	B	--	--	23.4	C	18.9	B	--	--
4	Broadway	Magnolia Ave	Long Beach	Signalized	23.1	C	29.9	C	--	--	22.4	C	17.2	B	--	--	19.7	B	17.4	B	--	--	20.2	C	18.8	B	--	--	20.2	C	19.0	B	--	--	20.1	C	19.0	B	--	--
5	6th St	Daisy Ave	Long Beach	Signalized	12.1	B	9.1	A	--	--	9.2	A	6.4	A	--	--	9.9	A	11.6	B	--	--	9.2	A	9.0	A	--	--	9.3	A	9.2	A	--	--	9.1	A	9.0	A	--	--
6	6th St	Magnolia Ave	Long Beach	Signalized	14.5	B	17.3	B	--	--	19.9	B	34.7	C	--	--	23.0	C	33.4	C	--	--	24.4	C	32.3	C	--	--	24.2	C	32.9	C	--	--	23.7	C	32.6	C	--	--
7	7th St	Daisy Ave	Long Beach	Signalized	7.4	A	6.5	A	--	--	14.9	B	9.9	A	--	--	28.8	C	14.4	B	--	--	18.2	B	13.5	B	--	--	18.2	B	13.5	B	--	--	18.2	B	13.1	B	--	--
8	7th St	Magnolia Ave	Long Beach	Signalized	22.8	C	19.3	B	--	--	26.4	C	20.9	C	--	--	24.8	C	19.8	B	--	--	25.5	C	25.2	C	--	--	25.2	C	24.6	C	--	--	25.8	C	24.5	C	--	--
9	10th St	Magnolia Ave	Long Beach	Signalized	16.4	B	16.6	B	--	--	11.5	B	13.7	B	--	--	12.1	B	14.5	B	--	--	12.4	B	16.7	B	--	--	12.2	B	16.0	B	--	--	13.0	B	15.5	B	--	--
10	Pico Ave	9th St	Long Beach	Signalized	16.3	B	16.6	B	19.2	B	37.8	D	26.3	C	24.1	C	32.0	C	25.8	C	31.6	C	123.0	F	68.7	E	41.1	D	139.1	F	61.1	E	47.9	D	64.1	E	59.3	E	42.0	D
11	Anaheim St	Alameda St	Wilmington	Signalized	24.7	C	51.9	D	20.4	C	21.2	C	39.0	D	15.5	B	13.1	B	17.0	B	13.1	B	14.6	B	20.1	C	13.5	B	15.4	B	20.5	C	13.7	B	13.7	B	17.5	B	13.5	B
12	Anaheim St	Santa Fe Ave	Long Beach	Signalized	32.1	C	35.2	D	--	--	149.9	F	88.1	F	--	--	166.2	F	76.1	E	--	--	208.4	F	45.9	D	--	--	204.2	F	48.7	D	--	--	214.3	F	39.6	D	--	--
13	Anaheim St	Magnolia Ave	Long Beach	Signalized	15.4	B	15.7	B	14.1	B	90.8	F	80.1	F	19.7	B	19.4	B	26.2	C	22.8	C	19.0	B	26.4	C	19.6	B	19.2	B	25.6	C	19.4	B	18.8	B	25.4	C	19.1	B
14	Anaheim St	Pacific Ave	Long Beach	Signalized	29.4	C	34.5	C	18.1	B	144.5	F	93.9	F	26.1	C	36.7	D	34.2	C	33.0	C	33.4	C	69.3	E	26.6	C	32.7	C	68.6	E	26.7	C	32.8	C	63.9	E	26.2	C
15	Anaheim St	Long Beach Blvd	Long Beach	Signalized	27.8	C	30.3	C	30.4	C	39.8	D	50.8	D	28.0	C	25.0	C	45.3	D	27.3	C	24.7	C	42.9	D	41.7	D	24.5	C	41.9	D	41.3	D	25.0	C	43.5	D	34.2	C
16	Anaheim St	Cherry Ave	Long Beach	Signalized	29.7	C	54.6	D	38.7	D	42.4	D	106.7	F	44.4	D	34.4	C	76.4	E	36.9	D	28.7	C	52.4	D	34.9	C	28.3	C	53.4	D	34.9	C	28.4	C	50.5	D	35.3	D
17	PCH	Alameda St	Wilmington	Signalized	18.2	B	21.3	C	20.3	C	22.5	C	101.0	F	20.7	C	22.6	C	23.1	C	24.9	C	23.4	C	24.5	C	24.4	C	23.2	C	25.1	C	24.8	C	24.7	C	23.9	C	23.7	C
18	Alameda Street	O Street	Wilmington	Signalized	25.2	C	23.5	C	23.0	C	20.0	B	132.9	F	19.9	B	24.0	C	26.0	C	27.0	C	27.5	C	24.0	C	28.9	C	27.5	C	24.2	C	29.3	C	29.2	C	24.3	C	27.7	C
19	PCH	Santa Fe Ave	Long Beach	Signalized	62.5	E	116.2	F	--	--	246.8	F	243.4	F	--	--	146.8	F	143.0	F	--	--	125.5	F	114.8	F	--	--	125.4	F	122.5	F	--	--	121.8	F	108.3	F	--	--
20	PCH	Pacific Ave	Long Beach	Signalized	29.4	C	32.6	C	27.9	C	64.7	E	40.5	D	28.4	C	54.6	D	41.2	D	28.4	C	41.3	D	40.4	D	28.3	C	41.1	D	39.0	D	28.7	C	41.1	D	43.3	D	27.8	C
21	PCH	Long Beach Blvd	Long Beach	Signalized	47.1	D	43.3	D	47.4	D	77.0	E	111.2	F	52.1	D	52.0	D	80.0	E	35.6	D	57.5	E	78.2	E	36.9	D	57.4	E	79.6	E	36.5	D	56.1	E	77.6	E	36.9	D
22	PCH	Atlantic Ave	Long Beach	Signalized	34.1	C	36.4	D	--	--	31.1	C	47.7	D	--	--	36.1	D	145.9	F	--	--	33.5	C	132.6	F	--	--	33.7	C	137.6	F	--	--	34.1	C	123.1	F	--	--
23	PCH	Cherry Ave	Long Beach	Signalized	32.5	C	27.8	C	--	--	220.0	F	206.3	F	--	--	84.5	F	145.8	F	--	--	93.0	F	149.5	F	--	--	94.0	F	150.4	F	--	--	95.2	F	143.4	F	--	--
24	Alameda St	Sepulveda Blvd (Ramp)	Carson	Signalized	32.5	C	31.0	C	13.2	B	39.0	D	105.3	F	31.8	C	40.9	D	50.4	D	35.3	D	50.2	D	51.0	D	38.8	D	44.8	D	44.5	D	35.5	D	46.4	D	44.3	D	25.6	C
25	Sepulveda Blvd	Alameda St (Ramp)	Carson	Signalized	52.5	D	37.6	D	36.8	D	65.6	E	147.5	F	37.5	D	31.2	C	41.7	D	24.9	C	32.9	C	76.1	E	23.9	C	32.0	C	69.3	E	24.4	C	30.9	C	58.3	E	25.3	C
26	Willow St	Santa Fe Ave	Long Beach	Signalized	76.9	E	55.3	E	36.8	D	91.8	F	135.4	F	42.4	D	98.6	F	140.5	F	52.3	D	64.3	E	105.6	F	36.4	D	65.7	E	107.0	F	36.5	D	77.3	E	107.9	F	39.9	D
27	Willow St	Pacific Ave	Long Beach	Signalized	32.1	C	27.9	C	18.3	B	42.8	D	62.2	E	25.0	C	36.9	D	52.6	D	23.6	C	32.9	C	43.2	D	21.6	C	33.0	C	44.3	D	21.7	C	32.4	C	47.3	D	22.0	C
28	Willow St	Long Beach Blvd	Long Beach	Signalized	63.2	E	96.5	F	61.7	E	96.3	F	107.3	F	75.7	E	49.2	D	64.2	E	43.6	D	46.8	D	63.1	E	41.0	D	47.1	D	65.4	E	41.3	D	46.9	D	66.6	E	41.8	D
29	Willow St	Atlantic Ave	Long Beach	Signalized	54.1	D	85.1	F	37.2	D	70.5	E	91.8	F	38.6	D	41.9	D	57.1	E	33.6	C	47.7	D	62.9	E	31.5	C	47.7	D	60.0	E	32.7	C	47.6	D	65.1	E	33.4	C
30	Willow St	Cherry Ave	Signal Hill	Signalized	65.7	E	63.6	E	40.1	D	71.2	E	127.5	F	78.5	E	44.6	D	59.3	E	39.7	D	45.0	D	58.8	E	36.1	D	46.0	D	57.3	E	36.7	D	45.4	D	58.4	E	37.6	D
31	Del Amo Blvd	Wilmington Ave	Carson	Signalized	63.2	E	48.0	D	36.0	D	46.7	D	53.0	D	29.3	C	47.0	D	46.5	D	32.2	C	48.1	D	42.6	D	30.0	C	47.9	D	42.9	D	30.5	C	47.4	D	42.3	D	29.3	C
32	Alameda St	Del Amo Blvd (Ramp)	Carson	Signalized	22.2	C	29.7	C	25.0	C	15.0	B	19.7	B	14.2	B	13.8	B	20.8	C	14.1	B	13.8	B	19.6	B	14.1	B	13.8	B	19.6	B	14.1	B	13.7	B	19.7	B	13.8	B
33	Del Amo Blvd	Alameda Street (Ramp)	Carson	Signalized	19.7	B	30.2	C	16.9	B	15.4	B	19.7	B	11.6	B	17.3	B	22.2	C	11.5	B	16.8	B	21.2	C	11.4	B	16.7	B	21.4	C	11.4	B	16.8	B	21.8	C	11.4	B
34	Del Amo Blvd	Santa Fe Ave	Carson	Signalized	43.3	D	58.8	E	25.1	C	56.8	E	76.1	E	27.8	C	62.5	E	96.6	F	33.0	C	72.1	E	138.7	F	31.4	C	72.1	E	137.7	F	31.2	C	73.3	E	134.8	F	30.1	C
35	Del Amo Blvd	Long Beach Blvd	Long Beach	Signalized	58.1	E	43.3	D	35.4	D	72.2	E	64.0	E	41.6	D	37.2	D	33.6	C	30.9	C	46.4	D	36.8	D	34.1	C	46.4	D	36.9	D	33.9	C	47.2	D	36.2	D	33.8	C
36	Del Amo Blvd	Atlantic Ave	Long Beach	Signalized	57.4	E	69.5	E	28.6	C	73.8	E	111.8	F	37.3	D	39.6	D	69.9	E	30.9	C	46.1	D	78.4	E	31.2	C	46.1	D	76.2	E	31.1	C	46.3	D	77.2	E	31.0	C

ID	Main Street	Cross Street	City	Traffic Control Device	Existing Condition Analysis						2035 Alt 1 (No Build) Analysis						2035 Alt 5A Analysis						2035 Alt 6A Analysis						2035 Alt 6B Analysis						2035 Alt 6C Analysis					
					AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak	
					Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
37	Del Amo Blvd	Cherry Ave	Long Beach	Signalized	50.6	D	72.0	E	33.0	C	88.1	F	88.3	F	37.9	D	42.0	D	46.9	D	30.0	C	48.1	D	49.4	D	30.8	C	48.0	D	49.3	D	31.2	C	48.4	D	50.0	D	31.0	C
38	Del Amo Blvd	Lakewood Blvd	Lakewood	Signalized	67.1	E	179.9	F	48.8	D	83.1	F	314.1	F	67.3	E	44.7	D	176.3	F	38.9	D	43.3	D	176.6	F	38.9	D	43.0	D	177.9	F	38.5	D	43.8	D	175.0	F	38.5	D
39	Artesia Blvd	Long Beach Blvd	Long Beach	Signalized	47.2	D	34.9	C	27.5	C	98.6	F	70.6	E	30.9	C	36.9	D	42.9	D	28.8	C	44.3	D	47.8	D	30.9	C	44.4	D	47.8	D	31.0	C	46.8	D	46.2	D	30.6	C
40	Alondra Blvd	Alameda St (West Link)	Compton	Signalized	28.6	C	34.9	C	24.2	C	31.6	C	40.7	D	28.3	C	28.6	C	43.9	D	29.0	C	29.6	C	34.5	C	32.9	C	29.3	C	32.4	C	32.3	C	30.7	C	32.4	C	32.2	C
41	Alondra Blvd	Santa Fe Ave	Compton	Signalized	43.8	D	52.9	D	31.2	C	50.8	D	63.8	E	33.1	C	54.5	D	90.0	F	30.5	C	44.0	D	94.9	F	28.0	C	43.4	D	94.2	F	30.1	C	45.5	D	92.8	F	30.2	C
42	Alondra Blvd	Long Beach Blvd	Compton	Signalized	34.4	C	42.8	D	29.4	C	35.3	D	68.1	E	32.1	C	62.1	E	134.5	F	31.0	C	79.9	E	161.1	F	32.1	C	78.3	E	157.3	F	33.8	C	84.3	F	115.2	F	36.6	D
43	Alondra Blvd	Atlantic Ave	Compton	Signalized	58.8	E	34.8	C	30.8	C	59.9	E	47.9	D	34.8	C	71.1	E	92.9	F	30.6	C	64.3	E	90.6	F	29.9	C	64.4	E	94.6	F	31.4	C	56.1	E	92.1	F	26.5	C
44	Alondra Blvd	Garfield Ave	Paramount	Signalized	36.4	D	71.6	E	45.3	D	86.6	F	86.0	F	42.4	D	202.8	F	234.6	F	50.4	D	94.1	F	159.4	F	36.5	D	93.9	F	164.3	F	35.8	D	95.9	F	137.6	F	28.3	C
45	Alondra Blvd	Paramount Blvd	Paramount	Signalized	34.3	C	58.0	E	34.8	C	35.3	D	73.7	E	40.6	D	59.7	E	125.1	F	57.7	E	52.5	D	103.8	F	39.4	D	49.5	D	102.5	F	38.4	D	48.8	D	97.1	F	42.6	D
46	Rosecrans Ave	Willowbrook Ave	Compton	Signalized	17.4	B	20.1	C	18.6	B	18.1	B	20.3	C	16.1	B	19.2	B	18.1	B	17.2	B	17.0	B	16.3	B	16.0	B	17.4	B	16.9	B	15.9	B	17.6	B	17.6	B	15.9	B
47	Rosecrans Ave	Alameda St (West Link)	Compton	Signalized	6.9	A	5.8	A	5.5	A	7.0	A	6.4	A	6.0	A	6.6	A	5.8	A	5.8	A	6.5	A	5.7	A	5.8	A	6.5	A	5.7	A	5.8	A	6.5	A	5.6	A	5.7	A
48	Rosecrans Ave	Santa Fe Ave	Compton	Signalized	33.0	C	39.0	D	31.7	C	39.2	D	80.1	F	32.1	C	34.3	C	47.5	D	28.1	C	28.5	C	35.4	D	29.3	C	28.7	C	35.0	C	29.7	C	31.1	C	36.7	D	28.1	C
49	Rosecrans Ave	Long Beach Blvd	Compton	Signalized	41.7	D	81.8	F	42.9	D	48.4	D	113.6	F	50.2	D	30.7	C	53.1	D	24.9	C	29.9	C	51.4	D	24.6	C	29.7	C	49.7	D	25.8	C	28.4	C	47.2	D	26.4	C
50	Rosecrans Ave	Atlantic Ave	Compton	Signalized	128.0	F	85.9	F	36.8	D	190.2	F	181.7	F	60.5	E	71.1	E	67.4	E	26.5	C	77.9	E	59.5	E	28.3	C	77.4	E	59.9	E	27.1	C	75.6	E	57.6	E	27.5	C
51	Rosecrans Ave	Garfield Ave	Paramount	Signalized	83.6	F	49.5	D	31.7	C	100.5	F	108.6	F	33.8	C	50.7	D	37.9	D	28.7	C	30.0	C	37.2	D	25.2	C	29.8	C	36.3	D	24.4	C	30.8	C	36.6	D	25.5	C
52	Rosecrans Ave	Paramount Blvd	Paramount	Signalized	40.7	D	62.2	E	35.5	D	39.7	D	70.5	E	37.1	D	34.1	C	48.3	D	35.2	D	28.0	C	36.2	D	39.8	D	27.5	C	36.1	D	41.2	D	27.2	C	36.4	D	41.7	D
53	Imperial Highway	Alameda St	Lynwood/LA.CO	Signalized	39.2	D	33.2	C	28.4	C	40.8	D	38.2	D	29.5	C	39.5	D	40.4	D	30.0	C	54.8	D	34.2	C	30.3	C	52.4	D	32.7	C	30.0	C	46.5	D	32.9	C	29.4	C
54	Imperial Highway	Long Beach Blvd	Lynwood	Signalized	55.9	E	59.3	E	52.6	D	65.3	E	70.9	E	55.7	E	52.8	D	31.1	C	32.5	C	44.2	D	40.2	D	30.7	C	45.0	D	39.5	D	31.0	C	45.3	D	37.5	D	31.6	C
55	Imperial Highway	Atlantic Ave	Lynwood	Signalized	67.6	E	68.1	E	35.4	D	79.9	E	69.7	E	38.9	D	47.5	D	57.1	E	32.7	C	31.2	C	27.8	C	26.5	C	32.9	C	27.8	C	27.4	C	32.6	C	27.4	C	24.5	C
56	Imperial Highway	Garfield Ave	South Gate	Signalized	24.9	C	24.4	C	23.0	C	29.3	C	34.2	C	26.4	C	29.2	C	31.3	C	31.5	C	65.6	E	60.9	E	33.4	C	61.5	E	59.0	E	29.0	C	53.9	D	45.5	D	35.6	D
57	Imperial Highway	Paramount Blvd	Downey	Signalized	42.8	D	107.5	F	36.4	D	58.6	E	131.0	F	43.7	D	45.6	D	67.6	E	32.2	C	27.4	C	53.6	D	30.2	C	29.1	C	51.6	D	33.1	C	28.0	C	55.2	E	29.9	C
58	Firestone Blvd	Long Beach Blvd	South Gate	Signalized	34.3	C	30.9	C	27.0	C	52.6	D	43.4	D	31.3	C	45.6	D	34.5	C	31.6	C	53.2	D	45.2	D	34.3	C	52.0	D	45.1	D	33.1	C	55.0	D	41.7	D	34.3	C
59	Firestone Blvd	California Ave	South Gate	Signalized	34.0	C	39.9	D	22.7	C	90.3	F	82.9	F	43.3	D	63.3	E	34.7	C	26.0	C	68.7	E	36.6	D	28.1	C	68.2	E	34.7	C	27.8	C	69.9	E	35.3	D	30.7	C
60	Firestone Blvd	Atlantic Ave	South Gate	Signalized	86.1	F	127.1	F	48.0	D	78.7	E	246.5	F	80.5	F	47.1	D	199.4	F	65.6	E	34.9	C	190.6	F	42.5	D	35.2	D	185.5	F	45.7	D	34.7	C	185.9	F	41.8	D
61	Firestone Blvd	Garfield Ave	South Gate	Signalized	53.5	D	51.4	D	35.8	D	64.9	E	47.1	D	46.4	D	53.5	D	34.8	C	40.9	D	54.9	D	24.7	C	36.6	D	57.5	E	24.4	C	37.4	D	56.9	E	27.4	C	42.8	D
62	Firestone Blvd	Paramount Blvd	Downey	Signalized	65.1	E	74.6	E	38.4	D	153.0	F	124.0	F	41.8	D	50.4	D	46.7	D	30.5	C	45.0	D	44.5	D	34.7	C	44.7	D	44.8	D	28.2	C	52.4	D	44.9	D	30.5	C
63	Florence Ave	Alameda St (West Link)	Huntington Park	Signalized	59.2	E	59.8	E	48.9	D	79.1	E	107.6	F	50.9	D	35.4	D	46.2	D	34.8	C	39.2	D	60.8	E	36.4	D	38.7	D	61.0	E	36.8	D	40.7	D	61.6	E	37.4	D
64	Florence Ave	Atlantic Ave	Bell/Cudahy	Signalized	36.7	D	44.2	D	37.8	D	41.4	D	63.3	E	83.3	F	35.7	D	45.0	D	54.6	D	33.3	C	44.7	D	48.2	D	33.7	C	47.4	D	46.6	D	34.4	C	44.1	D	47.5	D
65	Florence Ave	Eastern Ave	Bell Gardens	Signalized	36.4	D	33.1	C	30.8	C	37.2	D	41.3	D	34.7	C	41	D	41.5	D	34.4	C	27.0	C	30.4	C	29.2	C	23.3	C	29.6	C	28.9	C	29.0	C	31.9	C	28.3	C
66	Florence Ave	Garfield Ave	Bell Gardens	Signalized	33.7	C	32.0	C	30.8	C	34.0	C	33.8	C	33.6	C	39.5	D	34.4	C	33.9	C	33.8	C	30.2	C	33.7	C	33.4	C	32.4	C	35.2	D	34.5	C	37.7	D	34.1	C
68	Slauson Ave	Alameda St (West Link)	Huntington Park/LA. CO/City of LA	Signalized	33.6	C	42.8	D	36.8	D	37.2	D	58.4	E	38.7	D	34.1	C	44.6	D	30.8	C	35.1	D	45.7	D	33.3	C	33.8	C	46.0	D	33.5	C	37.5	D	44.0	D	34.0	C
69	Slauson Ave	Soto St	Huntington Park	Signalized	46.9	D	60.9	E	31.8	C	61.7	E	86.7	F	41.5	D	27.8	C	52.8	D	32.2	C	28.5	C	48.0	D	33.2	C	28.9	C	47.5	D	33.4	C	29.3	C	46.8	D	33.6	C
70	Slauson Ave	Atlantic Blvd	Maywood	Signalized	34.6	C	46.4	D	33.7	C	23.0	C	38.0	D	27.9	C	31.8	C	38.2	D	32.6	C	26.4	C	80.0	E	25.6	C	26.7	C	73.5	E	24.5	C	27.3	C	73.6	E	24.0	C
71	Slauson Ave	Eastern Ave	Commerce	Signalized	28.1	C	45.2	D	28.9	C	35.3	D	93.0	F	33.8	C	77.1	E	107.8	F	46.4	D	63.6	E	87.5	F	44.8	D	63.7	E	85.9	F	44.0	D	63.2	E	85.6	F	46.1	D
73	Garfield	Slauson	Commerce	Signalized	56.6	E	56.3	E	28.3	C	56.6	E	57.1	E	28.1	C	38.3	D	45.4	D	26.7	C	45.0	D	72.6	E	28.1	C	46.9	D	79.7	E	30.7	C	45.4	D	77.1	E	30.0	C

ID	Main Street	Cross Street	City	Traffic Control Device	Existing Condition Analysis						2035 Alt 1 (No Build) Analysis						2035 Alt 5A Analysis						2035 Alt 6A Analysis						2035 Alt 6B Analysis						2035 Alt 6C Analysis					
					AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak	
					Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
74a	Bandini Blvd	Atlantic Blvd (Option 1 & 2)	Vernon	Signalized	48.8	D	64.3	E	47.7	D	55.4	E	80.3	F	54.5	D	27.5	C	31.9	C	25.1	C	22.8	C	30.4	C	38.0	D	22.3	C	30.4	C	35.2	D	29.8	C	30.5	C	35.9	D
74b	Bandini Blvd	Atlantic Blvd (Option 3)	Vernon	Signalized							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32.7	C	26.8	C	30.3	C	--	--	--	--	--	--
75	Bandini Blvd	Eastern Ave	Bell	Signalized	28.0	C	39.0	D	27.3	C	32.8	C	38.1	D	30.5	C	31.5	C	46.8	D	32.5	C	36.6	D	49.5	D	30.2	C	36.0	D	49.1	D	30.2	C	36.6	D	48.2	D	30.4	C
76	Alameda Street	Washington Boulevard		Signalized	27.3	C	21.8	C	16	B	32.7	C	23.9	C	18.9	B	29	C	23.5	C	17.3	B	28.4	C	21.4	C	16.3	B	28.6	C	21.3	C	16.3	B	28.4	C	21.6	C	16.2	B
77	Santa Fe Avenue	Washington Boulevard		Unsignalized	12.2	B	11.6	B	15.7	C	12.8	B	11.6	B	10.6	B	12.6	B	11.4	B	10.5	B	10.5	B	10	A	9.6	A	10.5	B	10.1	B	9.6	A	10.5	B	10.1	B	9.6	A
78	Washington Blvd	Atlantic Blvd (Option 1)	City of Commerce	Signalized	38.6	D	44.3	D	29.1	C	46.0	D	46.4	D	30.9	C	40.9	D	47.0	D	30.2	C	45.5	D	40.2	D	34.5	C	49.8	D	42.7	D	35.3	D	45.1	D	39.8	D	35.7	D
78	Washington Blvd	Atlantic Blvd (Option 2)	City of Commerce	Signalized	38.6	D	44.3	D	29.1	C	46.0	D	46.4	D	30.9	C	40.9	D	47.0	D	30.2	C	43.0	D	35.9	D	31.8	C	45.2	D	38.8	D	35.4	D	45.1	D	39.8	D	35.7	D
79	Washington Blvd	Eastern Ave	Commerce	Signalized	26.3	C	27.9	C	30.2	C	26.5	C	32.6	C	32.6	C	27.9	C	38.8	D	33.7	C	24.2	C	29.1	C	36.3	D	24.4	C	28.2	C	37.3	D	26.1	C	26.7	C	37.2	D
83	Indiana Street	Olympic Boulevard		Signalized	12.6	B	14.6	B	14	B	13.8	B	16.7	B	14.8	B	14.1	B	16.6	B	14.1	B	18.7	B	14.2	B	21.9	C	18.6	B	14.6	B	19.9	B	18.7	B	20.5	C	9.8	A
84	Telegraph Road	Olympic Boulevard		Signalized	25.8	C	21.7	C	15.9	B	28.1	C	23.7	C	16.9	B	36.5	D	24.1	C	18.4	B	29.5	C	25.6	C	22.2	C	24.6	C	23	C	20.4	C	26.2	C	21.4	C	22.6	C
86	Ford Boulevard - I-710 NB Off-Ramp	Olympic Boulevard		Signalized	18.3	B	23.9	C	14.6	B	19.6	B	54.9	D	16.5	B	30.5	C	38	D	20.5	C	21.7	C	47	D	19	B	21.6	C	42.4	D	19.3	B	24.9	C	48.6	D	20.5	C
87	Arizona Avenue	Olympic Boulevard		Signalized	12.4	B	13.7	B	15.9	B	12.7	B	13.4	B	14.7	B	12.2	B	12.2	B	13.5	B	16.8	B	15	B	17.3	B	16.6	B	15.2	B	18.1	B	17.8	B	12.1	B	16.8	B
93	Ford Boulevard	Whittier Boulevard		Signalized	16.7	B	15.9	B	17.3	B	16.6	B	16.4	B	16.5	B	15.6	B	15.7	B	18.6	B	19.5	B	23	C	25	C	19.6	B	22.8	C	24.6	C	19	B	13	B	25.4	C
94	Arizona Avenue	Whittier Boulevard		Signalized	12.3	B	13.5	B	9.6	A	13.6	B	15.8	B	12	B	13.7	B	16.7	B	13.2	B	16.7	B	16.4	B	14	B	16.7	B	15.9	B	14.1	B	16.7	B	14.4	B	12.9	B
96	Indiana Street	3rd Street		Signalized	24.5	C	30.9	C	26.6	C	28.1	C	41.6	D	27.5	C	27.8	C	43.2	D	36.4	D	26.6	C	32.6	C	31.7	C	27.1	C	33	C	33.3	C	26.9	C	33.6	C	27.7	C
97	Ford Boulevard	3rd Street		Signalized	14.6	B	15.5	B	16	B	15.3	B	16.7	B	15.9	B	15	B	17.1	B	14.8	B	9.7	A	11.1	B	12.7	B	9.7	A	11	B	12.8	B	9.7	A	10.9	B	14.9	B
98	Beverly Boulevard	3rd Street		Signalized	18.5	B	49.6	D	21	C	20.3	C	49.7	D	24.4	C	20.7	C	54.6	D	25.5	C	21.3	C	48.4	D	23.6	C	23.1	C	48.6	D	24.9	C	22.8	C	25	C	23.7	C
99	Atlantic Boulevard	Beverly Boulevard		Signalized	23.9	C	38.8	D	29.4	C	25	C	45.8	D	31	C	26	C	44.8	D	30.4	C	22.8	C	45.4	D	24.8	C	22.6	C	46.5	D	25.3	C	23.5	C	49.4	D	27.3	C
105	Eastern Avenue	Cesar Chavez Avenue		Signalized	13.3	B	15.6	B	13.6	B	16.5	B	16.2	B	13.9	B	18.1	B	41.7	D	15.3	B	19.1	B	16.8	B	16.2	B	19.5	B	16.7	B	17.5	B	17.3	B	18.1	B	15.8	B
106	Humphreys Avenue	Cesar Chavez Avenue		Unsignalized	208.4	F	80.9	F	80.5	F	471.6	F	258.3	F	311	F	32.1	D	24	C	26.1	D	37.5	E	26	D	34.6	D	36.6	E	25.6	D	25.7	D	35.4	E	24	C	25.9	D
109	I-710 SB	Golden Shore St (Off)	Long Beach	Unsignalized	13.9	B	9.7	A	9.8	A	14.8	B	10.4	B	10.4	B	14.9	B	16.4	C	12.3	B	13.0	B	12.2	B	10.8	B	13.0	B	12.2	B	10.8	B	6.7	A	3.3	A	3.5	A
110	I-710 NB	3rd St (On @ Golden Ave)	Long Beach	Signalized	9.3	A	8.2	A	8.2	A	5.3	A	3.9	A	4.7	A	12.5	B	11.5	B	11.9	B	12.0	B	12.5	B	11.4	B	24.3	C	12.6	B	11.4	B	24.2	C	24.5	C	24.0	C
111	I-710 SB	Del Amo Blvd (On/Off @ Susana Rd)	Rancho Dominguez	Signalized	14.1	B	11.5	B	12.2	B	15.8	B	10.9	B	13.7	B	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
112	I-710 NB	Long Beach Blvd (On/Off)	Long Beach	Signalized	34.2	C	23.3	C	14.9	B	36.8	D	31.1	C	18.2	B	40.4	D	27.6	C	22.2	C	53.5	D	31.0	C	19.4	B	49.5	D	28.8	C	19.6	B	94.1	F	38.5	D	34.1	C
113	I-710 SB	Long Beach Blvd (On/Off)	Long Beach	Signalized	16.0	B	22.7	C	12.9	B	26.9	C	11.0	B	10.6	B	19.1	B	10.7	B	11.5	B	21.9	C	12.5	B	17.0	B	20.5	C	12.1	B	16.1	B	21.9	C	12.9	B	19.8	B
114	I-710 NB	E. Artesia Blvd (Off)	Long Beach	Signalized	20.0	B	68.6	E	18.9	B	29.8	C	120.6	F	19.2	B	7.9	A	13.5	B	5.3	A	7.7	A	12.0	B	4.7	A	7.1	A	12.3	B	4.7	A	7.8	A	14.9	B	5.3	A
115	I-710 SB	E. Artesia Blvd (On)	Long Beach	Unsignalized	14.9	B	21.8	C	9.4	A	48.5	E	63.5	F	10.6	B	33.5	D	27.3	D	11.8	B	15.7	C	19.0	C	10.3	B	15.0	B	19.3	C	10.3	B	14.6	B	18.1	C	10.4	B
116	I-710 NB	Alondra Blvd (On/Off)	Compton	Signalized	18.3	B	27.4	C	19.0	B	18.7	B	38.7	D	22.8	C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
117	I-710 SB	Alondra Blvd (On)	Compton	Unsignalized	17.6	C	18.2	C	17.1	C	22.9	C	19.5	C	17.8	C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
118	I-710 NB	Rosecrans Ave (Off)	Paramount	Signalized	13.2	B	14.3	B	14.7	B	13.6	B	14.4	B	10.8	B	10.3	B	12.9	B	8.2	A	9.0	A	11.9	B	8.1	A	9.0	A	11.9	B	7.8	A	9.1	A	11	B	7.5	A

ID	Main Street	Cross Street	City	Traffic Control Device	Existing Condition Analysis						2035 Alt 1 (No Build) Analysis						2035 Alt 5A Analysis						2035 Alt 6A Analysis						2035 Alt 6B Analysis						2035 Alt 6C Analysis					
					AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak	
					Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
119	I-710 SB	Rosecrans Ave (Off)	Paramount	Signalized	11.5	B	16.7	B	8.5	A	13.0	B	17.1	B	8.6	A	9.6	A	21.2	C	5.8	A	11.0	B	22.6	C	9.8	A	11.0	B	23.2	C	8.2	A	11.0	B	46.0	D	8.2	A
120	Abott Road	Wright Rd (Realigned)	South Gate	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	6.9	A	5.7	A	4.8	A	7.9	A	5.9	A	5.0	A	7.9	A	7.1	A	5.4	A	7.9	A	6.0	A	5.0	A
120	I-710 SB	Imperial (Off@Wright Rd)	South Gate	Signalized	18.6	B	26.0	C	17.0	B	19.1	B	30.6	C	17.9	B	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
121	I-710 NB	Firestone Blvd (Off)	South Gate	Signalized	10.8	B	72.6	E	39.2	D	13.5	B	90.5	F	70.0	E	10.1	B	52.1	D	37.2	D	26.9	C	24.7	C	31.7	C	30.1	C	25.0	C	35.5	D	26.3	C	24.8	C	32.0	C
122	I-710 SB	Firestone Blvd.	South Gate	Signalized	31.2	C	75.2	E	48.6	D	13.0	B	43.4	D	14.3	B	15.4	B	19.3	B	30.8	C	11.7	B	19.8	B	19.7	B	11.5	B	19.8	B	19.6	B	11.7	B	19.9	B	19.7	B
124a	I-710 SB	Bandini Blvd (Off) (Option 1 & 2)	Vernon	Signalized	15.5	B	13.7	B	16.3	B	15.6	B	14.5	B	16.5	B	20.6	C	33.6	C	39.2	D	17.5	B	25.8	C	10.8	B	19.6	B	24.9	C	15.4	B	11.0	B	27.1	C	11.0	B
124b	I-710 SB	Bandini Blvd (Off) (Option 3)	Vernon	Signalized							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20.9	C	23.0	C	19.4	B	--	--	--	--	--	--
125a	I-710 NB	Washington Blvd (On/Off) (Option 1)	E. LA (unincorp.)	Signalized	15.9	B	20.9	C	17.2	B	16.2	B	21.3	C	14.0	B	21.7	C	27.2	C	25.8	C	7.6	A	11.0	B	9.0	A	7.7	A	12.5	B	8.2	A	7.7	A	12.8	B	8.3	A
125b	I-710 NB FC Off/NB GP Off/NB GP On	Washington Blvd (Option 2)	E. LA (unincorp.)	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20.4	C	21.8	C	24.1	C	19.5	B	23.8	C	22.6	C	19.7	B	23.3	C	23.7	C
126a	I-710 SB	Washington Blvd (On/Off) (Option 1)	E. LA (unincorp.)	Signalized	18.6	B	15.6	B	17.2	B	20.4	C	38.8	D	72.8	E	24.3	C	52.5	D	29.7	C	18.9	B	15.5	B	16.5	B	20.4	C	15.7	B	17.7	B	18.6	B	15.4	B	16.8	B
126b	I-710 SB Off/SB FC On/SB GP On	Washington Blvd (Option 2)	E. LA (unincorp.)	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24.5	C	22.0	C	22.9	C	25.7	C	17.0	B	19.9	B	23.3	C	21	C	22	C
132	Ford Boulevard	Cesar Chavez Avenue		Signalized	16.5	B	19.8	B	25.5	C	18.2	B	17.6	B	20.3	C	18.1	B	26.1	C	40.6	D	24.3	C	23.8	C	51.5	D	24.1	C	27.3	C	50.3	D	26.8	C	26.5	C	48.1	D
135	I-710 SB Off-Ramp - Humphreys Avenue	Floral Drive		Signalized	33.8	C	30.9	C	36.2	D	29.9	C	32.3	C	35.3	D	33	C	32	C	49.2	D	27.2	C	34.5	C	23	C	27.4	C	39.3	D	23.1	C	27.4	C	26.9	C	26.8	C
137	I-710 SB On-Ramp	Ramona Boulevard		Signalized	4.7	A	8.6	A	6.1	A	5.3	A	10.5	B	7.2	A	6	A	11.3	B	7.6	A	7.1	A	9.9	A	6.2	A	6.9	A	10.4	B	6.6	A	7.3	A	9.8	A	6.7	A
138	Eastern Avenue - Romona Blvd	I-10 Ramps		Signalized	29.2	C	27.4	C	18.1	B	32.1	C	27.8	C	21.5	C	34.6	C	27.1	C	20.1	C	66.3	E	44.1	D	45.7	D	67.4	E	54.3	D	47.1	D	70.4	E	44.2	D	38.3	D
139	Shoreline Dr	Golden Shore St (On)	Long Beach	Unsignalized	13.2	B	16.7	C	11.1	B	13.0	B	17.7	C	12.4	B	13.8	B	34.0	D	15.4	C	14.2	B	22.2	C	13.1	B	14.2	B	22.3	C	13.1	B	0.6	A	1.6	A	0.6	A
140	Ocean Blvd	Golden Shore St	Long Beach	Signalized	10.4	B	20.7	C	14.5	B	18.3	B	70.9	E	16.0	B	36.9	D	125.5	F	52.1	D	26.1	C	64.6	E	39.8	D	26.9	C	71.7	E	40.3	D	25.6	C	66.7	E	36.8	D
141	3rd St	Magnolia Ave	Long Beach	Signalized	24.4	C	20.1	C	17.2	B	20.5	C	18.4	B	15.0	B	16.8	B	17.8	B	15.9	B	16.6	B	17.6	B	16.1	B	16.5	B	17.8	B	15.8	B	16.7	B	18.1	B	16.1	B
142	7th St	Maine Ave (North)	Long Beach	Unsignalized	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
144	Alameda St	41st	Los Angeles	Signalized	24.1	C	12.8	B	7.5	A	40.4	D	12.9	B	8.3	A	37.9	D	13.0	B	8.2	A	28.7	C	11.6	B	8.2	A	31.2	C	12.2	B	7.9	A	30.8	C	11.3	B	8.3	A
145	Alameda St	Gage (West Link)	Huntington Park	Signalized	26.6	C	24.9	C	28.6	C	21.6	C	27.5	C	44.8	D	12.7	B	25.9	C	44.5	D	14.7	B	15.0	B	17.9	B	14.4	B	15.5	B	18.4	B	14.4	B	15.2	B	17.5	B
146	Santa Fe Ave	223rd	Long Beach	Signalized	32.0	C	91.8	F	26.9	C	30.5	C	121.0	F	28.4	C	25.9	C	51.9	D	26.0	C	29.1	C	61.4	E	25.7	C	28.8	C	64.0	E	25.9	C	29.0	C	62.4	E	26.0	C
147	Wardlow	Magnolia Ave	Long Beach	Signalized	19.8	B	14.1	B	15.1	B	17.4	B	16.4	B	20.4	C	15.0	B	14.3	B	18.2	B	14.7	B	13.0	B	18.1	B	14.7	B	13.1	B	18.4	B	14.7	B	13.1	B	18.3	B
148	Wardlow	Cherry Ave	Long Beach	Signalized	25.4	C	57.0	E	29.1	C	36.8	D	88.7	F	34.7	C	48.2	D	137.4	F	47.3	D	71.1	E	167.2	F	38.7	D	68.4	E	169.5	F	36.6	D	70.9	E	171.5	F	37.0	D
149	Pacific	Florence	Huntington Park	Signalized	29.0	C	38.9	D	34.5	C	29.8	C	42.3	D	53.5	D	30.5	C	39.4	D	36.0	D	35.3	D	40.5	D	49.0	D	35.8	D	39.5	D	49.7	D	36.5	D	37.1	D	53.5	D
150	Firestone Blvd	Compton	Walnut Park	Signalized	26.0	C	29.3	C	23.8	C	26.7	C	30.8	C	26.9	C	25.5	C	30.0	C	25.9	C	25.3	C	27.8	C	26.1	C	26.0	C	27.5	C	24.3	C	25.6	C	27.5	C	24.7	C
151	Slauson Ave	Santa Fe Ave	Huntington Park	Signalized	50.8	D	97.0	F	35.2	D	72.7	E	116.0	F	36.8	D	36.0	D	42.1	D	31.7	C	37.0	D	34.1	C	35.9	D	35.8	D	39.6	D	33.2	C	37.7	D	38.1	D	33.8	C
152	Pacific	Gage	Huntington Park	Signalized	68.4	E	33.1	C	28.5	C	72.1	E	37.4	D	32.7	C	33.9	C	37.8	D	28.2	C	34.4	C	28.8	C	28.6	C	37.1	D	34.4	C	27.1	C	39.3	D	33.5	C	30.5	C
153	Santa Fe Ave	Gage	Huntington Park	Signalized	54.6	D	57.6	E	28.3	C	61.1	E	94.2	F	31.9	C	37.0	D	51.7	D	28.2	C	33.7	C	39.5	D	35.1	D	34.1	C	41.3	D	34.8	C	34.2	C	39.1	D	34.8	C
154	Alameda St	223rd Ramp	Carson	Signalized	9.2	A	34.5	C	6.6	A	11.6	B	40.5	D	9.5	A	11.7	B	49.6	D	10.6	B	15.9	B	43.5	D	8.1	A	15.7	B	35.6	D	8.3	A	16.0	B	35.3	D	7.8	A
155	Wilmington	223rd	Carson	Signalized	45.4	D	129.5	F	47.5	D	50.1	D	170.2	F	50.9	D	42.0	D	166.9	F	45.1	D	52.5	D	154.0	F	53.7	D	51.4	D	165.3	F	63.5	E	51.6	D	165.6	F	64.9	E

ID	Main Street	Cross Street	City	Traffic Control Device	Existing Condition Analysis						2035 Alt 1 (No Build) Analysis						2035 Alt 5A Analysis						2035 Alt 6A Analysis						2035 Alt 6B Analysis						2035 Alt 6C Analysis					
					AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak	
					Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
156	Alameda St Ramp	223rd	Carson	Signalized	16.8	B	90.9	F	15.7	B	19.4	B	95.2	F	27.0	C	21.7	C	59.2	E	17.3	B	18.3	B	48.5	D	14.2	B	18.0	B	44.5	D	13.9	B	19.9	B	36.3	D	13.6	B
157	Garfield	Gage	Bell Gardens / Commerce	Signalized	28.7	C	46.6	D	28.6	C	29.8	C	48.4	D	31.0	C	50.1	D	92.4	F	34.7	C	50.7	D	128.3	F	31.6	C	51.7	D	136.0	F	39.4	D	49.8	D	130.2	F	29.8	C
158	37th St	Santa Fe Ave	Vernon	Signalized	15.3	B	17.9	B	12.6	B	15.5	B	24.6	C	13.3	B	17.7	B	20.8	C	14.1	B	22.0	C	40.1	D	19.2	B	23.4	C	41.3	D	19.1	B	22.4	C	35.1	D	19.3	B
159	38th St	Santa Fe Ave	Vernon	Signalized	20.5	C	29.2	C	13.4	B	25.5	C	53.8	D	20.4	C	52.9	D	51.2	D	17.4	B	79.3	E	129.2	F	23.8	C	93.8	F	120.8	F	22.7	C	71.6	E	103.1	F	22.4	C
160	Garfield	Washington Blvd	Commerce	Signalized	36.5	D	42.2	D	28.9	C	37.4	D	52.3	D	30.3	C	42.8	D	48.6	D	30.5	C	49.0	D	55.0	D	42.3	D	49.6	D	53.2	D	42.1	D	49.9	D	52.8	D	41.6	D
161	Del Amo Blvd	Susana Road (Realigned)	Carson	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	45.9	D	16.2	B	19.5	B	41.3	D	17.5	B	19.6	B	41.3	D	17.5	B	19.1	B	39.2	D	17.6	B	19.4	B
161	Del Amo Blvd	Susana Road	Carson	Signalized	45.4	D	45.4	D	35.6	D	76.2	E	65.3	E	53.9	D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
162	Alameda Street	Carson Street (Ramp)	Carson	Signalized	8.5	A	6.3	A	--	--	10.7	B	9.2	A	--	--	9.2	A	5.9	A	--	--	7.6	A	7.3	A	--	--	7.4	A	7.6	A	--	--	7.8	A	7.9	A	--	--
163	Carson Street	Alameda Street (Ramp)	Carson	Signalized	17.1	B	17.7	B	--	--	12.8	B	13.2	B	--	--	10.7	B	11.8	B	--	--	9.8	A	15.0	B	--	--	9.5	A	14.5	B	--	--	10.2	B	12.7	B	--	--
200	Anaheim St	Freight Corridor Access	Long Beach	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	46.0	D	39.6	D	48.0	D	47.1	D	41.2	D	78.5	E	40.8	D	32.7	C	41.2	D
202	Anaheim St	I-710 Ramps (SPI)	Long Beach	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	23.5	C	27.6	C	91.7	F	26.3	C	25.6	C	78.3	E	25.5	C	24.8	C	61.8	E	26.2	C	25.0	C	78.9	E
205	PCH	I-710 Ramps (SPI)	Long Beach	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	34.2	C	23.3	C	45.8	D	36.8	D	22.1	C	48.1	D	40.9	D	21.9	C	57.0	E	40.1	D	21.0	C	52.5	D
208	Willow St	I-710 Ramps (SPI)	Long Beach	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	54.4	D	25.8	C	35.7	D	35.3	D	68.5	E	36.2	D	34.7	C	67.7	E	35.7	D	36.4	D	73.2	E	37.4	D
211	I-710 Ramps (SPI)	Del Amo Blvd	Rancho Dominguez	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	21.3	C	21.6	C	25.7	C	23.4	C	20.5	C	29.6	C	23.2	C	20.4	C	29.7	C	22.6	C	19.7	B	28.6	C
213	I-710 Ramps (SPI)	Alondra Blvd	Compton	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	15.4	B	20.9	C	19.2	B	16.8	B	20.5	C	19.4	B	16.9	B	20.6	C	19.9	B	17.0	B	20.4	C	20.0	B
214	Imperial Highway	Wright Rd	Long Beach	Signalized	--	--	--	--	--	--	198.5	F	190.2	F	58.8	E	30.5	C	25.5	C	19.5	B	52.7	D	78.3	E	51.2	D	52.3	D	78.5	E	34.9	C	52.3	D	91.7	F	49.2	D
216	Imperial Highway	I-710 Ramps (SPI)	Lynwood	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	26.9	C	37.1	D	34.7	C	28.3	C	28.5	C	33.4	C	28.3	C	32.2	C	34.8	C	28.9	C	28.1	C	33.4	C
219	I-710 Ramps (SPI)	Florence Ave	Bell	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	18.1	B	23.5	C	41.2	D	19.6	B	26.3	C	49.8	D	19.9	B	26.2	C	55.6	E	19.2	B	26.5	C	53.1	D
222	I-710 Ramps (SPI)	Slauson Ave	Bell	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	35.1	D	40.8	D	34.1	C	33.0	C	38.8	D	31.7	C	33.4	C	40.4	D	31.7	C	32.9	C	37.9	D	31.6	C
224a	I-710 NB/26th St	Bandini Blvd (On/Off) (Option 1 & 2)	Vernon	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	51.9	D	33.3	C	39.7	D	22.5	C	26.4	C	24.7	C	22.3	C	26.4	C	24.8	C	26.2	C	26.5	C	23.0	C
224b	I-710 NB/26th St	Bandini Blvd (On/Off) (Option 3)	Vernon	Signalized							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	44.5	D	73.2	E	45.3	D	--	--	--	--	--	--
225	E Broadway	Shoreline Drive	Long Beach	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	30.3	C	17.2	B	14.5	B	13.8	B	13.2	B	14.7	B	13.9	B	13.4	B	11.1	B	13.9	B	13.1	B	11.0	B
226	7th St	Shoreline Drive	Long Beach	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	17.8	B	11.3	B	13.0	B	64.3	E	26.3	C	17.3	B	64.3	E	27.4	C	17.0	B	62.9	E	23.8	C	16.7	B
227	E Broadway	Golden Shore	Long Beach	Unsignalized	--	--	--	--	--	--	--	--	--	--	--	--	22.3	C	21.2	C	15.8	C	23.6	C	21.7	C	14.1	B	23.7	C	22.0	C	14.2	B	2.6	A	2.7	A	2.0	A
230	Patata St	I-710 NB FC Off	South Gate	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.2	B	9.1	A	14.4	B	16.4	B	9.1	A	14.0	B	16.9	B	9.6	A	14.4	B
231	Patata St	I-710 SB FC On	South Gate	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.4	A	2.8	A	5.9	A	7.0	A	3.0	A	6.7	A	4.9	A	3.5	A	5.5	A
232	Patata St	Atlantic Ave	South Gate	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30.4	C	60.7	E	30.5	C	34.3	C	74.1	E	30.3	C	30.8	C	72.6	E	30.6	C
233	Patata St	Garfield Ave	South Gate/Bell Gardens	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22.8	C	27.6	C	16.4	B	23.4	C	27.2	C	16.2	B	24.3	C	27.4	C	16.1	B
234	Eastern Ave	Garfield Ave	Bell Gardens	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	29.1	C	30.1	C	19.7	B	28.7	C	32.4	C	20.3	C	32.2	C	32.3	C	20.2	C
274	I-710 SB	Atlantic Blvd (On) (Option 1 & 2)	Vernon	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	42.8	D	38.4	D	35.2	D	26.5	C	18.0	B	18.9	B	33.9	C	17.3	B	22.2	C	28.2	C	18.4	B	19.4	B
326	I-710 NB FC Off/SB FC On/SB GP On	Washington BLvd (Option 1)	E. LA (unincorp.)	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	43.3	D	39.1	D	40.4	D	47.9	D	39.3	D	36.2	D	31.4	C	37.2	D	38.1	D

ID	Main Street	Cross Street	City	Traffic Control Device	Existing Condition Analysis						2035 Alt 1 (No Build) Analysis						2035 Alt 5A Analysis						2035 Alt 6A Analysis						2035 Alt 6B Analysis						2035 Alt 6C Analysis					
					AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak		AM Peak		PM Peak		MD Peak	
					Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
374	I-710 NB	Atlantic Blvd (Off Loop) (Option 1 & 2)	Vernon	Signalized	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22.5	C	10.6	B	9.4	A	22.9	C	10.4	B	9.4	A	15.9	B	10.5	B	8.9	A
401	Alondra Blvd	Alameda St (East Link)	Compton	Signalized	7.4	A	13.7	B	9.9	A	27.0	C	14.2	B	8.5	A	10.9	B	11.8	B	8.7	A	8.8	A	10.6	B	8.3	A	8.8	A	9.0	A	9.8	A	8.8	A	9.3	A	8.9	A
461	Rosecrans Ave	Mona/Willowbrook Ave	Compton	Signalized	21.2	C	17.5	B	18.2	B	22.7	C	19.6	B	20.6	C	16.4	B	18.3	B	18.8	B	16.8	B	19.7	B	20.8	C	18.1	B	18.4	B	20.7	C	17.0	B	18.7	B	20.8	C
471	Rosecrans Ave	Alameda St (East Link)	Compton	Signalized	10.7	B	8.7	A	10.4	B	9.0	A	8.6	A	7.9	A	11.3	B	8.7	A	9.0	A	13.5	B	9.1	A	11.2	B	13.5	B	9.2	A	11.2	B	13.2	B	9.3	A	11.1	B
631	Florence Ave	Alameda St (East Link)	Huntington Park	Signalized	5.7	A	9.3	A	5.8	A	10.5	B	14.5	B	6.9	A	8.6	A	10.4	B	7.0	A	10.1	B	14.9	B	7.5	A	10.3	B	14.6	B	7.5	A	10.5	B	13.6	B	7.3	A
681	Slauson Ave	Alameda St (East Link)	Huntington Park/LA. CO/City of LA	Signalized	7.1	A	5.8	A	9.9	A	8.7	A	13.8	B	6.1	A	8.0	A	11.7	B	5.9	A	7.9	A	11.5	B	6.1	A	7.8	A	11.8	B	6.1	A	7.9	A	11.0	B	6.3	A
1421	8th St	Maine Ave (South)	Long Beach	Unsignalized	9.3	A	8.8	A	8.8	A	9.2	A	8.9	A	8.9	A	10.6	B	9.2	B	8.8	A	4.1	A	9.1	A	1.2	A	4.1	A	9.1	A	1.2	A	2.1	B	1.9	B	0.5	B
1451	Alameda St	Gage (East Link)	Huntington Park	Unsignalized	12.5	B	10.3	B	10.8	B	10.5	B	10.1	B	11.1	B	10.5	B	10.3	B	11.1	B	10.8	B	10.3	B	10.7	B	10.8	B	10.3	B	10.6	B	10.8	B	10.3	B	10.6	B

Appendix I

PM₁₀/PM_{2.5} Qualitative “Hot-Spot” Analysis and Conformity Determination

This document, prepared by LSA Associates, Inc.
20 Executive Park, Suite 200, Irvine CA 92614, was
submitted to the Statewide Technical Working Group in
January 2012 and is available at the following website
<http://www.scag.ca.gov/tcwg/qualitative/january12.htm>

AIR QUALITY TECHNICAL ADDENDUM

INTERSTATE 710 CORRIDOR PROJECT

PM_{2.5} AND PM₁₀ ANALYSIS

07-LA-710 PM 4.9/24.9

EA: 249900

Submitted to:

State of California
Department of Transportation, District 7
100 S. Main Street
Los Angeles, California 90012

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INTRODUCTION

LSA Associates, Inc. (LSA) prepared this $PM_{2.5}$ ¹ and PM_{10} ² Hot-Spot Analysis Air Quality Technical Addendum for the Interstate 710 (I-710) Corridor Project according to the conformity regulations (40 Code of Federal Regulations (CFR) 93.116 and 123 as of January 10, 2012) and the United States Environmental Protection Agency (EPA) guidance for PM^3 hotspot analysis of 2006 and 2010.

This $PM_{2.5}$ and PM_{10} analysis addresses the construction of the I-710 Corridor Project, including the following components identified in the Regional Transportation Plan (RTP) and the Federal Transportation Improvement Program (FTIP): Project ID: LAOB952, Description: I-710 Corridor User-Fee Backed Capacity Enhancement – Widen to 5 Mixed-Flow +2 Dedicated Lanes for Clean Technology Trucks (Each Direction), and Interchange Improvements.

PROJECT LOCATION AND DESCRIPTION

The general I-710 Corridor Project study area includes the portion of the I-710 from Ocean Boulevard in Long Beach to State Route 60 (SR-60), a distance of approximately 18 miles. Specific study areas may be established for individual analyses. For example, the traffic study area for the Project currently extends one mile east and west of the I-710 and includes freeway-to-freeway interchanges at Interstate 405 (I-405), SR-91, Interstate 105 (I-105), and Interstate 5 (I-5). Additionally, the traffic study examines intersections and roadway segments of key north/south and east/west arterials from Wilmington Avenue in the west to Lakewood Boulevard in the east.⁴ Given the size of the I-710 Corridor Project and its impact on the region, incremental emission impacts were assessed for the South Coast Air Basin (or SCAB), an Area of Interest (or AOI), which is a subregion of the SCAB that includes cities and communities along the I-710 freeway and the I-710 freeway itself. Figure 1 shows these various areas for this study. Figure 2 shows the existing land uses within the project area.

I-710 (also known as the Long Beach Freeway) is a major north/south interstate freeway connecting the City of Long Beach to central Los Angeles. Within the I-710 Corridor Project study area, the freeway serves as the principal transportation connection for goods movement between the Port of Los Angeles (POLA)/Port of Long Beach (POLB) shipping terminals and the Burlington Northern Santa Fe (BNSF)/Union Pacific (UP) Railroad rail yards in the cities of Commerce and Vernon and destinations along I-710 as well as destinations north and east of I-710.

¹ Particulate matter less than 2.5 microns in diameter.

² Particulate matter less than 10 microns in diameter.

³ Particulate matter

⁴ Freeway Traffic Operations Analysis Report (Draft); Prepared for Los Angeles County Metropolitan Transportation Authority; Prepared by URS; November 18, 2011.

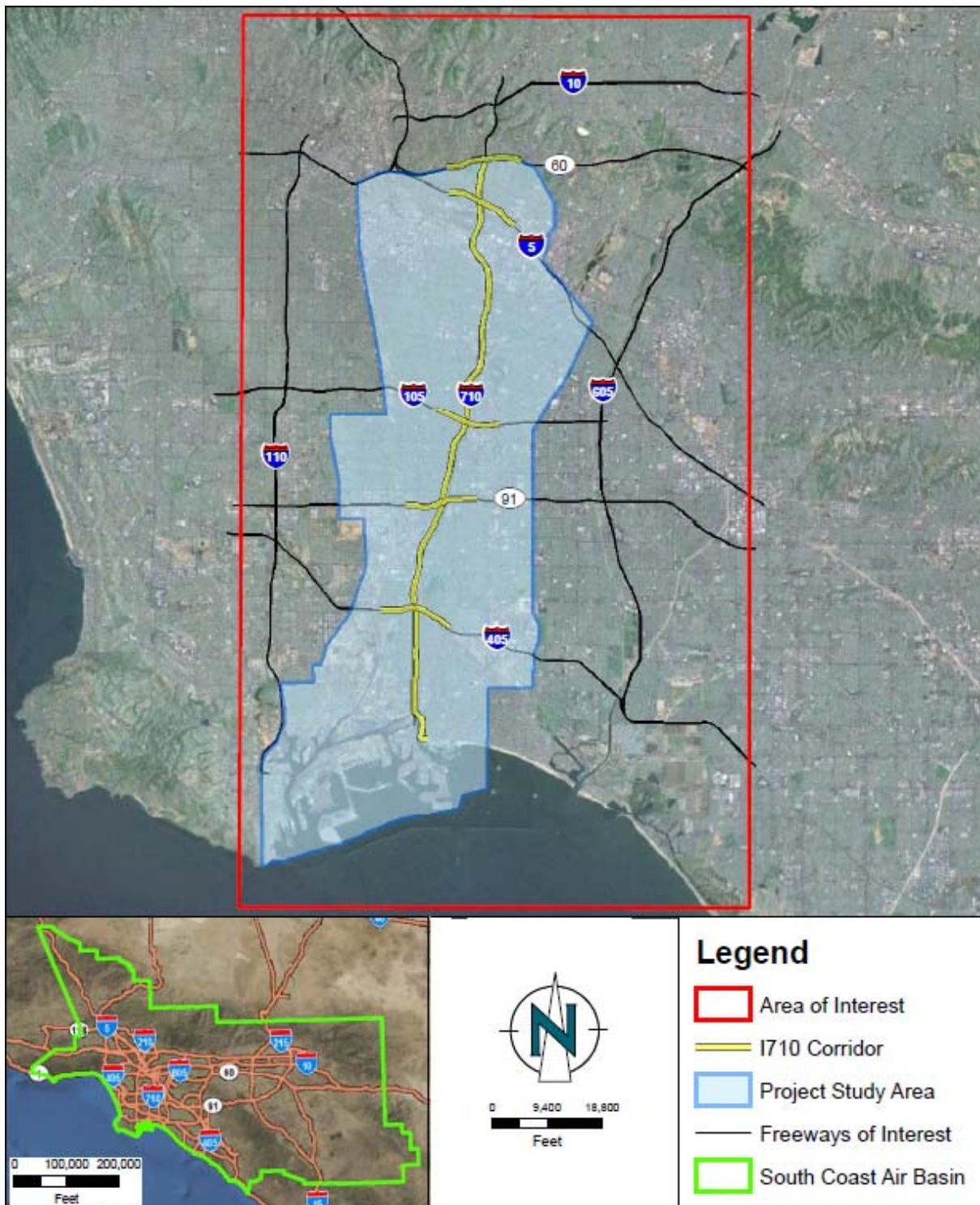


Figure 1: South Coast Air Basin, Area of Interest, General I-710 Corridor Project Study Area, and I-710 Freeway

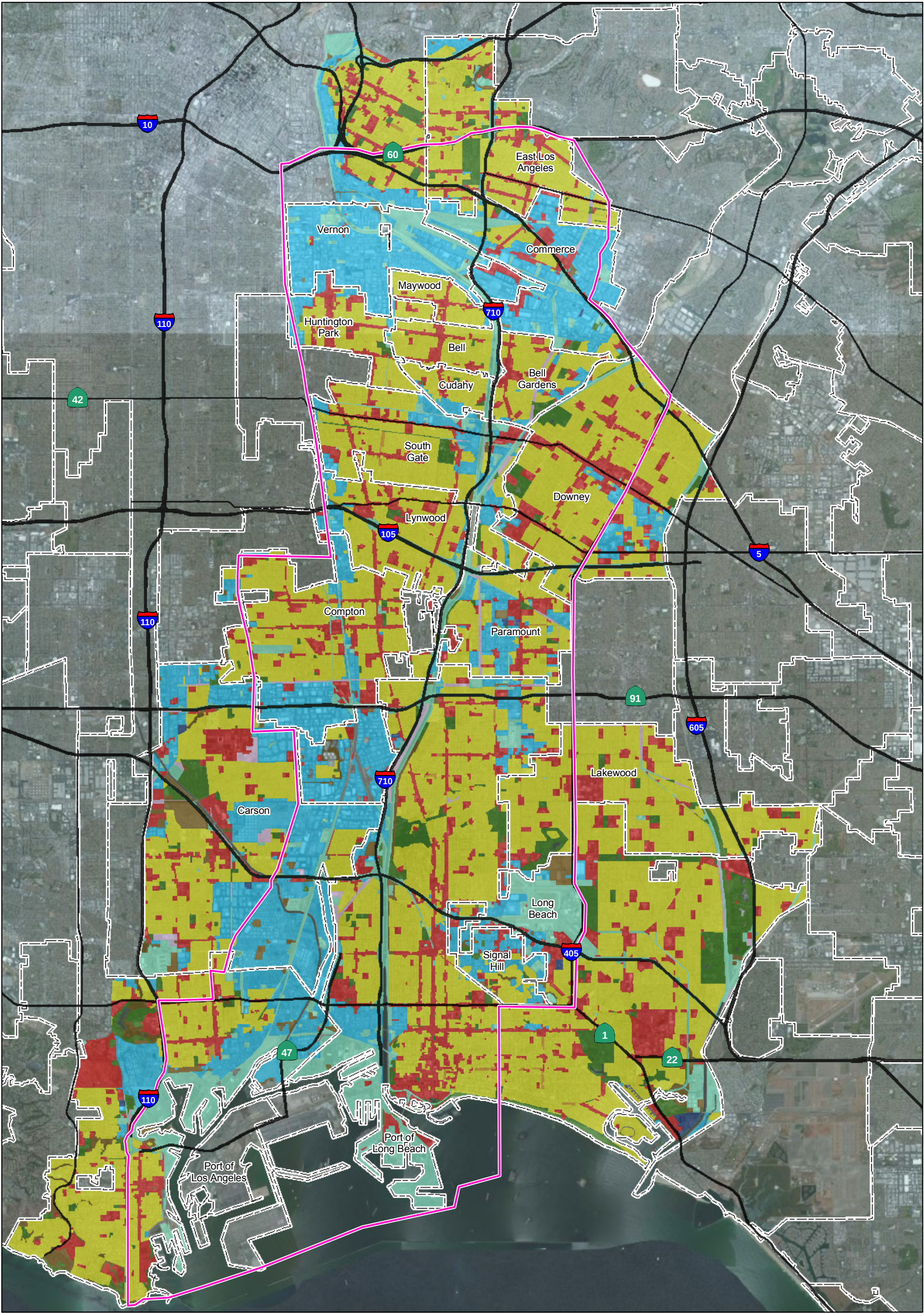
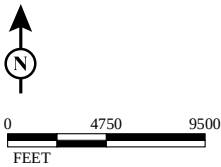


FIGURE 2

LEGEND

I-710 Study Area

Agriculture	Open Space and Recreation
Commercial and Services	Residential
Industrial	Transportation and Utilities
Mixed Commercial and Industrial	Vacant
Mixed Urban	



SOURCE: BING (2008); TBM (2007); SCAG (2005)
I:\URS0801A\GIS\Air_Quality\StudyArea_LU.mxd (1/6/12)

I-710 Corridor Project
Existing Land Use
07-LA-710- PM 4.9/24.9
EA 249900

The I-710 Major Corridor Study (MCS), undertaken to address the mobility and safety needs of the I-710 Corridor and to explore possible solutions for transportation improvements, was completed in March 2005 and identified a community-based Locally Preferred Strategy (LPS) consisting of 10 general purpose (GP) lanes next to four separated freight movement lanes. The Los Angeles County Metropolitan Transportation Authority (Metro), the California Department of Transportation (Caltrans), the Gateway Cities Council of Governments (GCCOG), the Southern California Association of Governments (SCAG), POLA, POLB, and the Interstate 5 Joint Powers Authority (I-5 JPA) are collectively known as the I-710 Funding Partners. Through a cooperative agreement, these agencies are funding the preparation of preliminary engineering and environmental documentation for the I-710 Corridor Project to evaluate improvements identified in the Major Corridor Study along the I-710 Corridor from Ocean Blvd. in the City of Long Beach to SR-60. The I-710 Funding Partners have continued this engineering and environmental study effort within the same broad, continuous community participation framework that was used for the MCS.

Purpose and Need

The purpose of the I-710 Corridor Project is to achieve the following within the I-710 Corridor (2035 time frame):

- Improve air quality and public health;
- Improve traffic safety;
- Provide modern design for the I-710 mainline;
- Address projected traffic volumes; and
- Address projected growth in population, employment, and activities related to goods movement (based on SCAG population projections and projected container volume increases at the two ports).

The need for the I-710 Corridor Project is as follows:

- I-710 experiences high heavy-duty truck volumes, resulting in high concentrations of diesel particulate emissions within the I-710 Corridor.
- I-710 experiences accident rates, especially truck-related, that are well above the statewide average for freeways of this type.
- At many locations along I-710, the on- and off-ramps do not meet current design standards, and weaving sections within and between interchanges are of insufficient length.
- High volumes of both trucks and cars have led to severe traffic congestion throughout most of the day (6:00 a.m. to 7:00 p.m.) on I-710 as well as on the connecting freeways. This is projected to worsen over the next 25 years.
- Increases in population, employment, and goods movement between now and 2035 will lead to more traffic demand on I-710 and on the streets and roadways within the I-710 Corridor as a whole.

Project Alternatives

This section describes the alternatives based on the Major Corridor Study that were developed by a multidisciplinary technical team to achieve the I-710 Corridor Project purpose and subsequently were reviewed and concurred upon by the various committees involved in the I-710 Corridor Project community participation framework. Alternatives 2, 3, and 4 were considered but withdrawn from further environmental study as stand-alone alternatives, but elements of these alternatives have been included in Build Alternatives 5A, 6A, 6B, and 6C. The alternatives are Alternative 1 (No Build Alternative), Alternative 5A (I-710 Widening up to 10 General Purpose [GP] Lanes), Alternative 6A (10 GP Lanes plus a Four-Lane Freight Corridor), Alternative 6B (10 GP Lanes plus a Zero-Emissions Four-Lane Freight Corridor), and Alternative 6C (10 GP Lanes plus a Four-Lane Freight Corridor Tolled).

Alternative 1: No Build Alternative. The No Build Alternative does not include any improvements within the I-710 Corridor other than those projects that are already planned and committed to be constructed by or before the planning horizon year of 2035. The projects included in this alternative are based on SCAG's 2008 Regional Transportation Improvement Program (RTIP) project list, including freeway, arterial, and transit improvements within the SCAG region. This alternative also assumes that goods movement to and from the ports make maximum utilization of existing and planned railroad capacity within the I-710 Corridor. Alternative 1 is the baseline against which the Build Alternatives proposed for the I-710 Corridor Project will be assessed. The existing I-710 mainline generally consists of eight GP lanes north of I-405 and six GP lanes south of I-405.

Alternative 5A: Freeway Widening up to 10 GP Lanes. Alternative 5A proposes to widen the I-710 mainline to up to ten GP lanes (northbound [NB] I-710 and southbound [SB] I-710). This alternative will:

- Provide an updated design at the I-405 and SR-91 interchanges (no improvements to the I-710/I-5 interchange are proposed under Alternative 5A);
- Reconfigure all local arterial interchanges within the project limits that may include realignment of on- and off-ramps, widening of on- and off-ramps, and reconfiguration of interchange geometry;
- Eliminate local ramp connections over I-710 (9th St. to 6th St. and 7th St. to 10th St.) in the City of Long Beach;
- Eliminate a local interchange at Wardlow Ave. in the City of Long Beach;
- Add a local street connection under I-710 to Thunderbird Villas at Miller Way in the City of South Gate;
- Add a local connection (bridge) over I-710 at Southern Ave. in the City of South Gate;
- Add a local arterial interchange at NB and SB I-710/Slauson Ave. in the City of Maywood; and
- Shift the I-710 centerline at several locations to reduce right-of-way requirements.

Additionally, various structures such as freeway connectors, ramps, and local arterial overcrossings, structures over the Los Angeles River and structures over the two rail yards throughout the project limits will be replaced, widened, or added as part of Alternative 5A.

In addition to improvements to the I-710 mainline and the interchanges, Alternative 5A also includes Transportation Systems/Transportation Demand Management (TSM/TDM), Transit, and Intelligent Transportation Systems (ITS) improvements. TSM improvements include provision of or future provision of ramp metering at all locations and the addition of improved arterial signage for access to I-710. Parking restrictions during peak periods (7:00 a.m.–9:00 a.m. and 4:00 p.m.–7:00 p.m.) will be implemented on four arterial roadways: Atlantic Blvd. between Pacific Coast Hwy. and SR-60; Cherry Ave./Garfield Ave. between Pacific Coast Hwy. and SR-60; Eastern Ave. between Cherry Ave. and Atlantic Blvd.; and Long Beach Blvd. between San Antonio Dr. and Firestone Blvd. Transit improvements that will be provided as part of the I-710 Corridor Project include increased service on all Metro Rapid routes and local bus routes in the study area. ITS improvements include updated fiber-optic communications to interconnect traffic signals along major arterial streets to provide for continuous, real-time adjustment of signal timing to improve traffic flow, as well as other technology improvements.

Alternative 5A also includes improvements to 42 local arterial intersections within the I-710 Corridor Project study area. These improvements generally consist of lane restriping or minimal widening to provide additional intersection turn lanes that will reduce traffic delay and improve intersection operations for those intersections with projected Level of Service (LOS) F.

In addition to the transportation system improvements described above, Alternative 5A also includes

- **Aesthetic Enhancements:** Landscaping and irrigation systems would be provided within the corridor where feasible. Urban design and aesthetic treatment concepts for community enhancement will be integrated into the design of the I-710 Corridor Project. These concepts will highlight unique community identities within a unified overall corridor theme; strengthen physical connections and access/mobility within and between communities; and implement new technologies and best practices to ensure maximum respect for the environment and natural resources. They will continue to evolve and be refined through future phases of project development
- **Drainage/Water Quality Features:** Alternative 5A includes modifications to the Los Angeles River levee; new, extended, replacement, and additional bents and pier walls in the Los Angeles River; additional and extended bents and pier walls in the Compton Channel; modifications to existing pump stations or provision of additional pump stations; and detention basins and bioswales that will provide for treatment of surface water runoff prior to discharge into the storm drain system

Alternative 6A: 10 GP Lanes plus a Four-Lane Freight Corridor. Alternative 6A includes all the components of Alternatives 1 and 5A described above. (The alignment of the GP lanes in Alternative 6A will be slightly different than Alternative 5A in a few locations.) In addition, this alternative includes a separated four-lane freight corridor (FC) from Ocean Blvd. northerly to its terminus near the UP and BNSF rail yards in the City of Commerce. The FC would be built to Caltrans highway design standards and would be restricted to the exclusive use of heavy-duty trucks (5+ axles). In

Alternative 6A, these trucks are assumed to be “conventional” trucks (conventional trucks are defined to be newer [post-2007] diesel/fossil-fueled trucks [new or retrofitted engines required per new regulations and standards]).

The FC would be both at-grade and on elevated structure with two lanes in each direction. There are exclusive, truck only ingress and egress ramps to and/or from the FC at the following locations:

- Harbor Scenic Dr. (NB ingress only)
- Ocean Blvd. (NB ingress only)
- Pico Ave. (NB ingress and SB egress only)
- Anaheim St. (NB ingress and SB egress only)
- SB I-710 GP lanes just south of Pacific Coast Hwy (SB egress only)
- NB I-710 GP lanes north of I-405 at 208th St. (NB ingress only)
- SB I-710 GP lanes north of I-405 at 208th St. (SB egress only)
- Eastbound (EB) SR-91 (NB egress only)
- Westbound (WB) SR-91 (SB ingress only)
- Patata St. (NB egress and SB ingress only)
- SB I-710 GP lanes at Bandini Blvd. (SB ingress only)
- NB I-710 GP lanes at Bandini Blvd. (NB egress only)
- Washington Blvd. (NB egress and SB ingress only) (Design Options 1 and 2)
- Washington Blvd. (NB egress and SB ingress via Indiana Ave.) (Design Option 3)
- Sheila St. (NB egress only) (Design Option 3)

In addition to the FC feature, Alternative 6A includes:

- Partial modification to the I-5 interchange, notably the replacement of the NB I-710 to NB I-5 connector (right-side ramp replacement of left-side ramp) and a realigned SB I-5 to SB I-710 connector and 5 SB GP lanes from SR-60 to Washington Blvd;
- 3 NB GP lanes from I-5 to SR-60;
- Retention of and modification to the I-710 SB on- and off-ramps at Eastern Ave. to slightly realign them; and
- A local connection over I-710 at Patata St. in the cities of South Gate and Bell Gardens.

As with Alternative 5A, Alternative 6A will include additional aesthetic enhancements and drainage/water quality features as follows:

- **Aesthetic Enhancements:** In addition to the aesthetic enhancements described above for Alternative 5A, specific aesthetic treatments will be developed for the FC, including use of screen walls and masonry treatments on the FC structures (including sound walls).

- **Drainage/Water Quality Features:** Alternative 6A includes features to capture and treat the additional surface water runoff from the FC, as well as some modifications to the Los Angeles River levees in order to accommodate electrical transmission line relocations.

Alternative 6B: 10 GP Lanes plus a Zero-Emissions Four-Lane Freight Corridor. Alternative 6B includes all the components of Alternative 6A as described above, but would restrict the use of the FC to zero-emissions trucks rather than conventional trucks. This proposed zero-emissions truck technology is assumed to consist of trucks powered by electric motors in lieu of internal combustion engines and producing zero tailpipe emissions while traveling on the freight corridor. The specific type of electric motor is not defined, but feasible options include linear induction motors, linear synchronous motors or battery technology. The power systems for these electric propulsion trucks could include, but is not limited to, hybrid with dual-mode operation (ZEV Mode), Range Extender EV (Fuel Cell or Turbine with ZEV mode), Full EV (with fast charging or infrastructure power), road-connected power (e.g., overhead catenary electric power distribution system), alternative fuel hybrids, zero-nitrogen-oxide (NO_x) dedicated fuel engines (compressed natural gas [CNG], renewable natural gas [RNG], hydrogen [H₂] internal combustion engine [ICE]), and range extender EV (turbine). For purposes of the I-710 environmental studies, the zero-emissions electric trucks are assumed to receive electric power while traveling along the FC via an overhead catenary electric power distribution system (road-connected power).

Alternative 6B also includes the assumption that all trucks using the FC will have an automated control system that will steer, brake, and accelerate the trucks under computer control while traveling on the FC. This will safely allow for trucks to travel in “platoons” (e.g., groups of 6–8 trucks) and increase the capacity of the FC from a nominal 2,350 passenger car equivalents per lane per hour (pces/lh/hr) (as defined in Alternative 6A) to 3,000 pces/lh/hr in Alternative 6B.

The design of the FC will also allow for possible future conversion, or be initially constructed, as feasible (which may require additional environmental analysis and approval), of a fixed-track guideway family of alternative freight transport technologies (e.g., Maglev). However, this fixed-track family of technologies has been screened out of this analysis for now, as they have been determined to be inferior to electric trucks in terms of cost and ability to readily serve the multitude of freight origins and destinations served by trucks using the I-710 corridor.

Alternative 6C: 10 GP Lanes plus a Four-Lane Freight Corridor with Tolls. Alternative 6C includes all the components of Alternative 6B as described above, but would toll trucks using the FC. Although tolling trucks in the FC could be done under either Alternative 6A or 6B, for analytical purposes, tolling has only been evaluated for Alternative 6B, as this alternative provides for higher FC capacity than Alternative 6A due to the automated guidance feature of Alternative 6B.

Tolls would be collected using electronic transponders, which would require overhead sign bridges and transponder readers like the SR-91 toll lanes currently operating in Orange County, where no cash toll lanes are provided. The toll pricing structure would provide for collection of higher tolls during peak travel periods.

Design Options

For Alternatives 6A, 6B, and 6C, three design options for the portion of I-710 between the I-710/Slauson Ave. interchange to just south of the I-710/I-5 interchange are under consideration. These configurations will be fully analyzed so that they can be considered in the future selection of a Preferred Alternative for the project. These options are as follows:

Design Option 1. Design Option 1 applies to Alternatives 6A, 6B, and 6C and provides access to Washington Blvd. using three ramp intersections at Washington Blvd.

Design Option 2. Design Option 2 applies to Alternatives 6A, 6B, and 6C and provides access to Washington Blvd. using two ramp intersections at Washington Blvd.

Design Option 3. Design Option 3 applies only to Alternative 6B¹ and removes access to Washington Blvd. at its current location. The ramps at the I-710/Washington Blvd. interchange would be removed to accommodate the proposed FC ramps in and out of the rail yards. The SB off-ramp and NB on-ramp access would be accommodated by Alternative 6B in the vicinity of the existing interchange by the proposed new SB off-ramp and NB on-ramp at Oak St. and Indiana St. These two ramps are proposed as mixed-flow ramps (freight connector ramps that would also allow automobile traffic). However, the SB on-ramp and NB off-ramp traffic that previously used the Washington Blvd. interchange would be required to access the Atlantic Blvd./Bandini Blvd. interchange located south of the existing Washington Blvd. interchange to ultimately reach I-710.

PM_{2.5} AND PM₁₀ HOT-SPOT METHODOLOGY

The new Final Rule establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in PM_{2.5} and PM₁₀ nonattainment and maintenance areas. The proposed project is in the South Coast Air Basin (Basin), which has been designated as a Federal nonattainment area for PM_{2.5} and PM₁₀; therefore, a hot-spot analysis is required.

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

¹ Design Option 3 only applies to Alternative 6B because it was not included in the travel demand modeling for either Alternative 6A or 6C.

Section 176(c)(1)(B) of the CAA is the statutory criterion that must be met by all projects in nonattainment and maintenance areas that are subject to transportation conformity.

Section 176(c)(1)(B) states that federally supported transportation projects must not “cause or contribute to any new violation of any standard in any area; increase the frequency or severity of any existing violation of any standard in any area; or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.”

Ambient Air Quality Standards

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

- **24-hour Standard:** 35 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).
- **Annual Standard:** 15.0 $\mu\text{g}/\text{m}^3$

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

PM₁₀ nonattainment and maintenance areas are required to attain the following standard:

- **24-hour Standard:** 150 $\mu\text{g}/\text{m}^3$

The 24-hour PM₁₀ standard is attained when the average number of exceedances in the previous three calendar years is less than or equal to 1.0. An exceedance occurs when a 24-hour concentration of 155 $\mu\text{g}/\text{m}^3$ or greater is measured at a site. The annual PM₁₀ standard of 50 $\mu\text{g}/\text{m}^3$ is no longer used for determining the Federal attainment status. The interagency consultation process should be used to discuss how the qualitative PM₁₀ hot-spot analysis meets statutory and regulatory requirements for the PM₁₀ standards, depending on the factors that are evaluated for a given project.

To meet statutory requirements, the 2006 Final Rule requires PM_{2.5} and PM₁₀ hot-spot analyses to be performed for Projects of Air Quality Concern (POAQC). The Final Rule states that projects not identified in 40 CFR 93.123(b)(1) as POAQC have met statutory requirements without any further hot-spot analyses (40 CFR 93.116[a]).

PM_{2.5} AND PM₁₀ HOT-SPOT ANALYSIS

Projects of Air Quality Concern

The first step in the hot-spot analysis is to determine whether a project meets the standard for a POAQC. The EPA specified in 40 CFR 93.123(b)(1) of the 2006 Final Rule that POAQC are certain highway and transit projects that involve significant levels of diesel vehicle traffic, or any other

project that is identified in the PM_{2.5} and PM₁₀ State Implementation Plan (SIP) as a localized air quality concern. The 2006 Final Rule defines the POAQC that require a PM_{2.5} and PM₁₀ hot-spot analysis in 40 CFR 93.123(b)(1) as:

- i. New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;
- ii. Projects affecting intersections that are at level of service (LOS) D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- iii. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- iv. Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; or
- v. Projects in or affecting locations, areas, or categories of sites that are identified in the PM_{2.5} and PM₁₀ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The proposed I-710 Corridor Project would meet Criteria (i) because it would expand an existing freeway with existing and future high truck volumes. In addition, the proposed project would meet Criteria (ii) because it would impact existing and future intersections operating at LOS D or worse and carrying large numbers of diesel vehicles both under existing and as affected by the project. The proposed project would not construct a new or expand an existing bus or rail terminal or transfer point. In addition, the project does not affect locations, areas, or categories of sights that are identified in the PM implementation plan. Therefore, the project does not meet Criteria (iii), (iv), or (v). As the proposed project meets two of the five criteria listed above, it is considered to be a POAQC, and a qualitative project-level PM_{2.5} and PM₁₀ hot-spot analysis has been conducted to assess whether the project would cause or contribute to any new localized PM_{2.5} or PM₁₀ violations, increase the frequency or severity of any existing violations, or delay timely attainment of the PM_{2.5} and PM₁₀ AAQS.

Types of Emissions Considered

In accordance with the EPA/FHWA Guidance, this hot-spot analysis is based on directly emitted and re-entrained PM_{2.5} and PM₁₀ emissions. Tailpipe, brake wear, tire wear, and road dust PM_{2.5} and PM₁₀ emissions were considered in this hot-spot analysis.

Vehicles cause dust from paved and unpaved roads to be re-entrained, or resuspended, in the atmosphere. According to the 2006 Final Rule, road dust emissions are to be considered for PM₁₀ hot-spot analyses. For PM_{2.5}, road dust emissions are only to be considered in hot-spot analyses if the EPA or the State air agency has made a finding that such emissions are a significant contributor to the PM_{2.5} air quality problem (40 CFR 93.102(b)(3)). The EPA has published a guidance on the use of AP-42 for re-entrained road dust for SIP development and conformity (August 2007); therefore, re-entrained PM_{2.5} is considered in this analysis.

Secondary particles formed through PM_{2.5} and PM₁₀ precursor emissions from a transportation project take several hours to form in the atmosphere, giving emissions time to disperse beyond the immediate project area of concern for localized analyses; therefore, they were not considered in this hot-spot analysis. Secondary emissions of PM_{2.5} and PM₁₀ are considered as part of the regional emission analysis prepared for the conforming RTP and FTIP.

According to the project schedule, some of the construction phases are expected to take more than five years to complete. However, construction would not occur at any one location for more than five years. Therefore, construction-related emissions may be considered temporary; and any construction-related PM_{2.5} and PM₁₀ emissions due to this project were not included in this hot-spot analysis. This project will comply with the South Coast Air Quality Management District (SCAQMD) Fugitive Dust Rules for fugitive dust during construction of this project. In addition, per Transportation Conformity Rule 93.117, the project will be required to comply with any PM_{2.5} and PM₁₀ control measures in the SIP. Excavation, transportation, placement, and handling of excavated soils will result in no visible dust migration. A water truck or tank will be available within the project limits at all times to suppress and control the migration of fugitive dust from earthwork operations.

Analysis Method

According to hot-spot methodology, estimates of future localized PM_{2.5} and PM₁₀ pollutant concentrations need to be determined. This analysis makes those estimates by extrapolating present PM_{2.5} and PM₁₀ pollutant concentrations from air quality data measured at monitoring stations in the vicinity of the proposed project. The data from these stations are combined with projections from the 2007 Air Quality Management Plan (AQMP) prepared by the SCAQMD and examined for trends in order to predict future conditions in the project vicinity. Additionally, the impacts of the project on the regional PM_{2.5} and PM₁₀ emissions and the likelihood of these impacts interacting with the ambient PM_{2.5} and PM₁₀ levels to cause hot spots are discussed.

EMFAC2007 version 2.3 (EMFAC) was used to develop emission factors for the various criteria pollutants¹. The EMFAC model was run for both the baseline year 2008 and build-out year 2035. EMFAC has a variety of user options that allow the user to analyze on-road emissions under different conditions. For the I-710 Corridor Project, the following options were used:

- Operation Parameters
 - o Geographic area chosen: South Coast Air Basin.
 - o Calendar Year: Baseline year 2008; 2035 analysis year for the No Build Alternative and Alternatives 5A, 6A, and 6B.
 - o Season: Annual average season was used, which represents an average of all monthly inventories.

¹ EMFAC2011 was released by CARB on September 19, 2011, after emissions had been calculated. In addition, EMFAC 2007 is the emission factor model used in the most recent AQMP (2007 AQMP). Emission factors in this analysis have been adjusted for currently adopted non-GHG rules, as in EMFAC2011. See Section 4.3.2.4.

- o Temperature: 60° F was chosen and represents an average annual temperature.
 - o Relative Humidity: 40%.
- Method
 - o The project domain resides with the SCAB; as such, the “Simple-Average” option was used as the calculation; it uses area averaging to calculate average parameters for temperature, speed, relative humidity, and I/M.
- Modes
 - o The model was run in the “EMFAC” mode to generate emission factors in grams of pollutant emitted per vehicle activity (grams per vehicle mile travelled and grams/hr).

EMFAC2007 does not account for rules and regulations enacted by the California Air Resources Board after 2007. Two notable regulations not captured in EMFAC are those designed to reduce NO_x and diesel particulate matter (DPM). The Statewide Bus and Truck Rule and Drayage Truck Rule will require fleets to reduce DPM and NO_x emissions. Additionally, the Ports of Los Angeles and Long Beach have enacted the Clean Port Truck Program (CPTP) mandating trucks that operate within the Ports to reduce DPM emissions by meeting set standards during phase in years. Adjustments were made to EMFAC emission factors to account for the Statewide Bus and Truck Rule and CPTP. Based on a comparison made between the CPTP and the Drayage rule, it was determined that the CPTP is more stringent than the Drayage Rule and hence, no adjustments were made for Drayage rule.

Data Considered

The closest air monitoring stations to the project area are the North Long Beach, Long Beach Pacific Coast Highway (PCH), and Los Angeles Main Street stations. All of these stations monitor PM_{2.5} and PM₁₀ concentrations. These monitoring stations are located in Los Angeles County within the vicinity of I-405, State Route 110 (SR-110), United States Route 101 (US-101), Interstate 10 (I-10), and I-710. The North Long Beach Station is located approximately 2,500 feet from I-405 and 1 mile from I-710. The Long Beach PCH Station is located approximately two miles from I-710. The Los Angeles Station is located approximately 3,000 feet from SR-110, 3000 feet from US-101, and 1 mile from I-10. The I-405, I-710, SR-110, US-101, and I-10 freeways currently carry between 7,000 and 23,000 daily truck trips, respectively. These monitoring stations are located within the proposed project’s study area. Therefore, the air quality concentrations monitored at these stations are representation of the conditions within the project area. The locations of the air monitoring stations relative to the project area are shown in Figure 3.

Trends in Baseline PM_{2.5} Concentrations. The monitored PM_{2.5} concentrations at the North Long Beach, Long Beach PCH, and Los Angeles Stations are shown in Table A. These data show that the Federal 24-hour PM_{2.5} AAQS (35 µg/m³) has been exceeded at the North Long Beach Station in five out of the past six years, at the Long Beach PCH Station in four out of the past six years, and at the Los Angeles Station in each of the past six years. In addition, the annual average PM_{2.5} AAQS (15 µg/m³) at the North Long Beach and the Long Beach PCH Stations was exceeded in 2005 and 2006 and at the Los Angeles Station from 2005 through 2009; however, the concentrations continue to diminish every year.

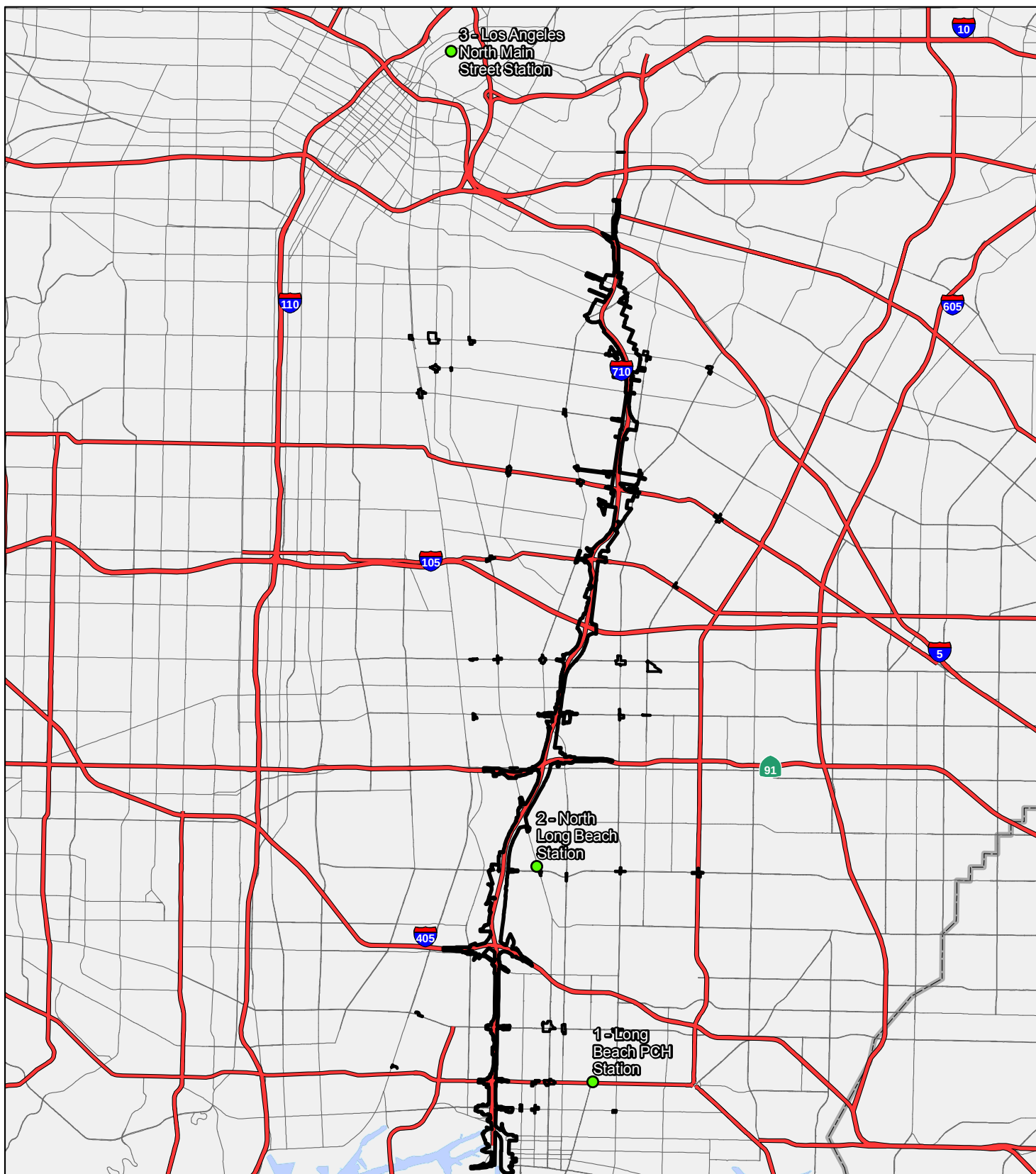
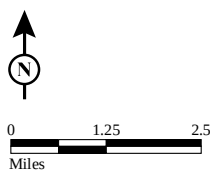


FIGURE 3

LEGEND

- Air Quality Monitoring Stations
- Project Location



I-710 Corridor Project
Air Quality Monitoring Stations

07-LA-710- PM 4.9/24.9
EA 249900

SOURCE: TBM (2008)

I:\URS0801A\GIS\Air_Quality\AQ_Monitoring_Stations.mxd (1/6/12)

Table A: Ambient PM_{2.5} Monitoring Data (µg/m³)

	2005	2006	2007	2008	2009	2010
North Long Beach Air Quality Monitoring Station						
3-year average 98th percentile	44.6	40.7	39.0	38.2	37.9	33.5
Exceeds Federal 24-hour standard (35 µg/m ³)?	Yes	Yes	Yes	Yes	Yes	No
3-year National annual average	17.3	16.0	14.9	14.3	13.9	12.5
Exceeds Federal annual average standard (15 µg/m ³)?	Yes	Yes	No	No	No	No
Long Beach PCH Air Quality Monitoring Station						
3-year average 98th percentile	44.3	38.3	35.5	35.1	33.8	31.7
Exceeds Federal 24-hour standard (35 µg/m ³)?	Yes	Yes	Yes	Yes	No	No
3-year National annual average	17.3	15.2	14.3	13.9	13.3	12.2
Exceeds Federal annual average standard (15 µg/m ³)?	Yes	Yes	No	No	No	No
Los Angeles – North Main Street Air Quality Monitoring Station						
3-year average 98th percentile	56.3	48.8	47.8	43.5	41.8	35.1
Exceeds Federal 24-hour standard (35 µg/m ³)?	Yes	Yes	Yes	Yes	Yes	Yes
3-year National annual average	19.6	17.6	16.6	16.1	15.7	14.3
Exceeds Federal annual average standard (15 µg/m ³)?	Yes	Yes	Yes	Yes	Yes	No

Source: ARB Web site: <http://www.arb.ca.gov/adam/>, November 2011.

Projected 24-hour Concentrations. The levels of PM_{2.5} in the project vicinity exceeded the Federal 24-hour standard between 2005 and 2009. The Federal 24-hour standard was not exceeded at either station in 2010. Table V-2-16 in the 2007 AQMP estimates that the 24-hour PM_{2.5} concentration in Long Beach will be 41.9 µg/m³ in 2015. However, based on the data in Table A, the concentrations measured between 2006 and 2010 are below the level that the AQMP has projected for 2015. Extrapolating from the data in Table A, by 2015, it is estimated that the 24-hour PM_{2.5} level would be 25 µg/m³, 29 percent below the Federal standard. In 2035, the three-year 98th percentile 24-hour concentration is projected to be 9 µg/m³, which is approximately 76 percent below the Federal standard.

Projected Annual Concentrations. While the current levels of PM_{2.5} in the project vicinity are generally above the Federal annual standard, indications are that levels in the future will continue to decrease. To estimate the future background PM_{2.5} concentrations, an exponential projection was made of the three-year annual average levels. By 2015, the concentration within the vicinity of the project is projected to be 11 µg/m³, which is approximately 27 percent below the Federal standard. In 2035, the three-year annual average concentration is projected to be 3.6 µg/m³, which is approximately 76 percent below the Federal standard.

Trends in Baseline PM₁₀ Concentrations. The PM₁₀ concentrations monitored at the North Long Beach, the Long Beach PCH, and the Los Angeles Stations are shown in Table B. With the exception

Table B: Ambient PM₁₀ Monitoring Data (µg/m³)

	2005	2006	2007	2008	2009	2010
North Long Beach Air Quality Monitoring Station						
First Highest	66	78	232	62	62	44
Second Highest	61	64	75	45	56	41
Third Highest	57	63	54	45	55	38
Fourth Highest	54	58	53	44	50	36
No. of days above National 24-hour standard (150 µg/m ³)	0	0	1	0	0	0
Long Beach PCH Air Quality Monitoring Station						
First Highest	131	117	123	81	83	76
Second Highest	74	113	87	64	78	53
Third Highest	72	92	67	64	60	50
Fourth Highest	72	90	66	63	58	47
No. of days above National 24-hour standard (150 µg/m ³)	0	0	0	0	0	0
Los Angeles – North Main Street Air Quality Monitoring Station						
First Highest	70	59	78	66	72	42
Second Highest	68	55	77	65	62	41
Third Highest	68	55	63	50	57	41
Fourth Highest	51	48	58	49	63	41
No. of days above National 24-hour standard (150 µg/m ³)	0	0	0	0	0	0

Source: ARB Web site: <http://www.arb.ca.gov/adam/>, November 2011.

of 2007 at the North Long Beach Station, the Federal 24-hour PM₁₀ AAQS (150 µg/m³) was not exceeded between 2005 and 2010.

The 2007 AQMP (SCAQMD) reports that since the Federal annual PM₁₀ standard has been revoked, the Basin is expected to be declared in attainment for the 24-hour Federal PM₁₀ standard since 2000. Table V-3-1 in the 2007 AQMP lists the projected 24-hour PM₁₀ concentrations at various stations within the Basin. It is estimated that the 24-hour concentration in Long Beach will be 77 µg/m³ by 2015, 51 percent of the Federal standard. In 2035, the 24-hour average concentration is projected to be 23 µg/m³, which is approximately 85 percent below the Federal standard.

Transportation and Traffic Conditions

Existing and future (2035) no build average daily traffic (ADT) volumes and average daily truck volumes for I-710 in the project area are shown in Table C. The table indicates that I-710 currently experiences more than 10,000 trucks annual average daily traffic (AADT).

Traffic Changes Due to the Proposed Project

The proposed project is a highway expansion project. Based on the Freeway Traffic Operations Analysis (URS, November 2011), the proposed project would increase the traffic volumes along

Table C: Existing (2008) and No Build (2035) Average Daily Traffic Volumes

I-710 Segment		Existing (2008)		2035 No Build	
From	To	Total	Trucks	Total	Trucks
SR-60	I-5	185,700	17,600	212,700	23,200
I-5	Washington Blvd.	215,300	20,100	233,400	25,300
Washington Blvd.	Atlantic St.	206,900	19,400	235,800	27,800
Atlantic St.	Florence Blvd.	196,600	28,600	224,600	37,800
Florence Blvd.	Firestone Blvd.	196,600	28,600	224,600	37,800
Firestone Blvd.	Imperial Hwy.	205,600	30,400	232,200	39,700
Imperial Hwy.	I-105	206,600	31,500	237,600	43,200
I-105	Rosecrans Ave.	213,100	31,700	242,000	43,400
Rosecrans Ave.	Alondra Blvd.	135,500	26,300	170,400	38,500
Alondra Blvd.	SR-91	213,800	36,700	267,100	59,300
SR-91	Long Beach Blvd.	214,200	37,000	264,100	60,100
Long Beach Blvd.	Del Amo Blvd.	188,100	42,100	238,200	74,100
Del Amo Blvd.	I-405	179,800	42,000	227,600	74,300
I-405	Wardlow Rd.	179,600	41,600	227,500	74,400
Wardlow Rd.	Willow St.	160,700	41,200	202,700	71,600
Willow St.	Pacific Coast Hwy.	150,000	41,400	186,000	71,800
Pacific Coast Hwy.	Anaheim St.	131,800	33,900	170,100	60,100
Anaheim St.	9th St.	52,000	26,000	76,100	46,600
9th St.	Ocean Blvd.	22,200	10,300	32,100	20,100

Source: URS, 2011.

I-5 = Interstate 5

I-105 = Interstate 105

I-405 = Interstate 405

SR-60 = State Route 60

SR-91 = State Route 91

I-710. The future traffic volumes along I-710 for each of the build alternatives are shown in Table D. As shown, the proposed project would increase the traffic volume on and the number of trucks using I-710.

Table E shows the 2035 No Build LOS and delay in the project area for the a.m. and p.m. peak hours. Tables F, G, H, and I show the 2035 LOS and delay in the project area for Build Alternatives 5A, 6A, 6B, and 6C, respectively. As shown, the proposed project would improve the LOS and reduce the delay at some intersections in the project area while worsening the LOS and increasing the delay at other intersections within the project area. Therefore, a vehicle emission analysis was prepared to determine the proposed project's effect on the region attaining the Federal PM_{2.5} and PM₁₀ AAQS.

Daily Vehicle Emission Changes Due to the Proposed Project

The PM_{2.5} and PM₁₀ emissions for the South Coast Air Basin (SCAB), Area of Interest (AOI) and the I-710 freeway as compared to the 2008 baseline are presented in Tables J through O. These emissions were calculated by Environ (2011) using the I-710 Traffic model data. The results of the modeling are included in Appendix PM-A.

Table D: 2035 Project Alternative Average Daily Traffic Volumes

I-710 Segment		Alternative 5A		Alternative 6A		Alternative 6B		Alternative 6C	
From	To	Total	Trucks	Total	Trucks	Total	Trucks	Total	Trucks
SR-60	I-5	266,900	28,500	273,400	40,300	273,400	40,300	273,400	40,300
I-5	Washington Blvd.	315,800	32,400	328,000	45,000	328,000	45,000	328,000	45,000
Washington Blvd.	Atlantic St.	304,600	33,800	322,400	50,600	322,400	50,600	322,400	50,600
Atlantic St.	Florence Blvd.	316,800	45,900	344,300	65,300	344,300	65,300	344,300	65,300
Florence Blvd.	Firestone Blvd.	302,000	46,300	330,800	64,600	330,800	64,600	330,800	64,600
Firestone Blvd.	Imperial Hwy.	303,800	47,000	332,300	64,800	332,300	64,800	332,300	64,800
Imperial Hwy.	I-105	297,700	49,600	327,700	65,800	327,700	65,800	327,700	65,800
I-105	Rosecrans Ave.	296,300	49,700	328,500	70,000	328,500	70,000	328,500	70,000
Rosecrans Ave.	Alondra Blvd.	209,600	43,500	238,100	65,300	238,100	65,300	238,100	65,300
Alondra Blvd.	SR-91	311,000	65,300	341,300	80,900	341,300	80,900	341,300	80,900
SR-91	Long Beach Blvd.	269,100	63,600	297,400	79,000	297,400	79,000	297,400	79,000
Long Beach Blvd.	Del Amo Blvd.	296,100	80,300	328,800	93,200	328,800	93,200	328,800	93,200
Del Amo Blvd.	I-405	286,000	80,600	317,400	93,400	317,400	93,400	317,400	93,400
I-405	Wardlow Rd.	291,000	80,900	314,100	89,500	314,100	89,500	314,100	89,500
Wardlow Rd.	Willow St.	246,000	76,300	265,900	85,400	265,900	85,400	265,900	85,400
Willow St.	Pacific Coast Hwy.	218,000	76,600	238,000	85,500	238,000	85,500	238,000	85,500
Pacific Coast Hwy.	Anaheim St.	95,800	50,300	90,000	43,900	90,000	43,900	90,000	43,900
Anaheim St.	9th St.	73,800	42,500	71,400	41,500	71,400	41,500	71,400	41,500
9th St.	Ocean Blvd.	35,400	21,300	35,900	24,500	35,900	24,500	35,900	24,500

Source: URS, 2011.

I-5 = Interstate 5

I-105 = Interstate 105

I-405 = Interstate 405

SR-60 = State Route 60

SR-91 = State Route 91

Table E: 2035 Alternative 1 - No Project Intersection Levels of Service

Intersection		AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
10	Pico Ave. and 9th St.	D	37.8	C	26.3
19	Pacific Coast Hwy. and Santa Fe Ave.	F	246.8	F	243.4
22	Pacific Coast Hwy. and Atlantic Ave.	C	31.1	D	47.7
34	Del Amo Blvd. and Santa Fe Ave.	E	56.8	E	76.1
41	Alondra Blvd. and Santa Fe Ave.	D	50.8	E	63.8
43	Alondra Blvd. and Atlantic Ave.	E	59.9	D	47.9
45	Alondra Blvd. and Paramount Blvd.	D	35.3	E	76.7
71	Slauson Ave. and Eastern Ave.	D	35.3	F	93.0
112	I-710 NB Ramps and Long Beach Blvd.	D	36.8	C	31.1
148	Wardlow Rd. and Cherry Ave.	D	36.8	F	88.7
155	Wilmington Ave. and 223rd St.	D	50.1	F	170.2
159	38th St. and Santa Fe Ave.	C	25.5	D	53.8

Source: URS, 2011

I-710 = Interstate 710

LOS = Level of Service

NB = northbound

sec = seconds

Table F: 2035 Alternative 5A Intersection Levels of Service

Intersection		AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
10	Pico Ave. and 9th St.	C	32.0	C	25.8
19	Pacific Coast Hwy. and Santa Fe Ave.	F	146.8	F	143.0
22	Pacific Coast Hwy. and Atlantic Ave.	D	36.1	F	145.9
34	Del Amo Blvd. and Santa Fe Ave.	E	62.5	F	96.6
41	Alondra Blvd. and Santa Fe Ave.	D	54.5	F	90.0
43	Alondra Blvd. and Atlantic Ave.	E	71.1	F	92.9
45	Alondra Blvd. and Paramount Blvd.	E	59.7	F	125.1
71	Slauson Ave. and Eastern Ave.	E	77.1	F	107.8
112	I-710 NB Ramps and Long Beach Blvd.	D	40.4	C	27.6
148	Wardlow Rd. and Cherry Ave.	D	48.2	F	137.4
155	Wilmington Ave. and 223rd St.	D	42.0	F	166.9
159	38th St. and Santa Fe Ave.	D	52.9	D	51.2

Source: URS, 2011

I-710 = Interstate 710

LOS = Level of Service

NB = northbound

sec = seconds

Table G: 2035 Alternative 6A Intersection Levels of Service

Intersection		AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
10	Pico Ave. and 9th St.	F	123.0	E	41.1
19	Pacific Coast Hwy. and Santa Fe Ave.	F	125.5	F	114.8
22	Pacific Coast Hwy. and Atlantic Ave.	C	33.5	F	132.6
34	Del Amo Blvd. and Santa Fe Ave.	E	72.1	F	138.7
41	Alondra Blvd. and Santa Fe Ave.	D	44.0	F	28.0
43	Alondra Blvd. and Atlantic Ave.	E	64.3	F	90.8
45	Alondra Blvd. and Paramount Blvd.	D	52.5	F	103.8
71	Slauson Ave. and Eastern Ave.	E	63.6	F	87.5
112	I-710 NB Ramps and Long Beach Blvd.	D	53.5	C	31.0
148	Wardlow Rd. and Cherry Ave.	E	71.1	F	167.2
155	Wilmington Ave. and 223rd Street.	D	52.5	F	154.0
159	38th St. and Santa Fe Ave.	E	79.3	F	129.2

Source: URS, 2011

I-710 = Interstate 710

LOS = Level of Service

NB = northbound

sec = seconds

Table H: 2035 Alternative 6B Intersection Levels of Service

Intersection		AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
10	Pico Ave. and 9th St.	F	139.1	E	61.1
19	Pacific Coast Hwy. and Santa Fe Ave.	F	125.4	F	122.5
22	Pacific Coast Hwy. and Atlantic Ave.	C	33.7	F	137.6
34	Del Amo Blvd. and Santa Fe Ave.	E	72.1	F	137.7
41	Alondra Blvd. and Santa Fe Ave.	D	43.4	F	94.2
43	Alondra Blvd. and Atlantic Ave.	E	64.4	F	94.6
45	Alondra Blvd. and Paramount Blvd.	D	49.5	F	102.5
71	Slauson Ave. and Eastern Ave.	E	61.7	F	85.9
112	I-710 NB Ramps and Long Beach Blvd.	D	49.5	C	28.8
148	Wardlow Rd. and Cherry Ave.	E	64.8	F	169.5
155	Wilmington Ave. and 223rd St.	D	51.4	F	165.3
159	38th St. and Santa Fe Ave.	F	93.8	F	120.8

Source: URS, 2011

I-710 = Interstate 710

LOS = Level of Service

NB = northbound

sec = seconds

Table I: 2035 Alternative 6C Intersection Levels of Service

Intersection		AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
10	Pico Ave. and 9th St.	E	64.1	E	59.3
19	Pacific Coast Hwy. and Santa Fe Ave.	F	121.8	F	108.3
22	Pacific Coast Hwy. and Atlantic Ave.	C	34.1	F	123.1
34	Del Amo Blvd. and Santa Fe Ave.	E	73.3	F	134.8
41	Alondra Blvd. and Santa Fe Ave.	D	45.5	F	92.8
43	Alondra Blvd. and Atlantic Ave.	E	56.1	F	92.1
45	Alondra Blvd. and Paramount Blvd.	D	48.8	F	97.1
71	Slauson Ave. and Eastern Ave.	E	63.2	F	85.6
112	I-710 NB Ramps and Long Beach Blvd.	F	94.1	D	38.5
148	Wardlow Rd. and Cherry Ave.	E	70.9	F	171.5
155	Wilmington Ave. and 223rd St.	D	51.6	F	165.6
159	38th St. and Santa Fe Ave.	E	71.6	F	103.1

Source: URS, 2011

I-710 = Interstate 710

LOS = Level of Service

NB = northbound

sec = seconds

Table J: Daily PM_{2.5} Emissions within the SCAB Region (pounds per day)

Traffic Condition	Exhaust Emissions	Road Dust	Total	Change from Existing	% Change from Existing	Change from No Build	% Change from No Build
Existing	43,888	23,493	67,381	-	-	-	-
2035 Alt 1	33,001	31,562	64,563	-2,800	-4%	-	-
2035 Alt 5A	33,556	31,552	65,108	-2,300	-3%	500	0.8%
2035 Alt 6A	33,548	31,594	65,141	-2,200	-3%	600	0.9%
2035 Alt 6B	33,294	31,600	64,894	-2,500	-4%	300	0.5%
2035 Alt 6C	33,350	31,587	64,937	-2,400	-4%	400	0.6%

Source: Environ, 2011

Alt = Alternative

PM_{2.5} = particulate matter less than 2.5 microns in diameter

SCAB = South Coast Air Basin

Table K: Daily PM_{2.5} Emissions within the Area of Interest (pounds per day)

Traffic Condition	Exhaust Emissions	Road Dust	Total	Change from Existing	% Change from Existing	Change from No Build	% Change from No Build
Existing	10,464	5,651	16,115	-	-	-	-
2035 Alt 1	7,124	6,924	14,049	-2,100	-13%	-	-
2035 Alt 5A	7,235	6,943	14,177	-1,900	-12%	200	1.2%
2035 Alt 6A	7,280	5,981	14,252	-1,900	-12%	200	1.2%
2035 Alt 6B	7,029	5,986	14,015	-2,100	-13%	0	0%
2035 Alt 6C	7,081	5,976	14,057	-2,100	-13%	0	0%

Source: Environ, 2011

Alt = Alternative

PM_{2.5} = particulate matter less than 2.5 microns in diameter**Table L: Daily PM_{2.5} Emissions along I-710 (pounds per day)**

Traffic Condition	Exhaust Emissions	Road Dust	Total	Change from Existing	% Change from Existing	Change from No Build	% Change from No Build
Existing	690	252	942	-	-	-	-
2035 Alt 1	387	381	767	-170	-19%	-	-
2035 Alt 5A	465	441	906	-36	-4%	139	18%
2035 Alt 6A	600	572	1172	230	24%	405	53%
2035 Alt 6B	354	584	937	-4	0%	170	22%
2035 Alt 6C	387	548	936	-6	-1%	169	22%

Source: Environ, 2011

Alt = Alternative

PM_{2.5} = particulate matter less than 2.5 microns in diameter

I-710 = Interstate 710

Table M: Daily PM₁₀ Emissions within the SCAB Region (pounds per day)

Traffic Condition	Exhaust Emissions	Road Dust	Total	Change from Existing	% Change from Existing	Change from No Build	% Change from No Build
Existing	58,876	95,713	154,589	-	-	-	-
2035 Alt 1	49,404	128,586	177,990	23,000	15%	-	-
2035 Alt 5A	49,432	128,545	177,978	23,000	15%	0	0%
2035 Alt 6A	49,438	128,714	178,153	24,000	15%	1,000	4%
2035 Alt 6B	49,105	128,742	177,847	23,000	15%	0	0%
2035 Alt 6C	49,178	128,687	177,865	23,000	15%	0	0%

Source: Environ, 2011

Alt = Alternative

SCAB = South Coast Air Basin

PM₁₀ = particulate matter less than 10 microns in diameter

Table N: Daily PM₁₀ Emissions within the Area of Interest (pounds per day)

Traffic Condition	Exhaust Emissions	Road Dust	Total	Change from Existing	% Change from Existing	Change from No Build	% Change from No Build
Existing	13,968	23,024	36,992	-	-	-	-
2035 Alt 1	10,573	28,210	38,783	1,800	5%	-	-
2035 Alt 5A	10,594	28,280	38,874	1,900	5%	100	0.3%
2035 Alt 6A	10,664	28,443	39,107	2,100	6%	300	0.8%
2035 Alt 6B	10,334	28,461	38,795	1,800	5%	0	0%
2035 Alt 6C	10,402	28,420	38,822	1,800	5%	0	0%

Source: Environ, 2011

Alt = Alternative

PM₁₀= particulate matter less than 2.5 microns in diameter**Table O: Daily PM₁₀ Emissions along I-710 (pounds per day)**

Traffic Condition	Exhaust Emissions	Road Dust	Total	Change from Existing	% Change from Existing	Change from No Build	% Change from No Build
Existing	868	1025	1893	-	-	-	-
2035 Alt 1	569	1552	2120	230	12	-	-
2035 Alt 5A	678	1798	2476	580	31	350	17%
2035 Alt 6A	857	2330	3188	1300	68	1070	50%
2035 Alt 6B	534	2378	2912	1000	54	770	36%
2035 Alt 6C	578	2234	2812	920	49	690	33%

Source: Environ, 2011

Alt = Alternative

PM₁₀ = particulate matter less than 10 microns in diameter

I-710 = Interstate 710

Total PM_{2.5} emissions for the build alternatives compared to the No Build Alternative show increased emissions on the I-710 freeway. This is due to the increased mobility and capacity of the freeway which results in increased exhaust and entrained dust emissions.

The total PM_{2.5} and PM₁₀ emissions consist of vehicle exhaust emissions and entrained road dust emissions. In this project, entrained road dust emissions were calculated using the latest EPA AP-42 equation, which was approved in February 2011. This equation assumes that entrained dust emissions are directly proportional to vehicle miles travelled, thereby indicating that roads have an infinite silt reservoir. The SCAQMD used a different approach in their 2007 AQMP, which was based on their analysis that heavily-traveled freeways and arterial roadways have a finite silt reservoir and that additional traffic (vehicle miles traveled [VMT]) in future years will NOT increase entrained particulate matter (PM) on these roads. The EPA methodology used in this project is conservative; it can reasonably be stated that the entrained dust emissions may be overstated and actual PM emissions would closely reflect the exhaust PM emissions.

The exhaust portion of PM₁₀ emissions for all 2035 alternatives follow a trend similar to other criteria pollutants in that; it decreases from the 2008 baseline PM₁₀ exhaust emissions. Total PM_{2.5} emissions for Alternative 6A as compared to 2008 baseline, on the I-710 freeway, increase for the same reasons as the total PM₁₀ emissions. The increase in the entrained PM_{2.5} for this alternative on the I-710 freeway was higher than the decrease seen in the exhaust PM_{2.5} emissions.

As shown in Tables J through O, Alternative 6B would reduce the PM_{2.5} exhaust emissions within the AOI and I-710 regions and the PM₁₀ exhaust emissions within the SCAB, AOI, and I-710 regions when compared to the 2035 no build conditions.

By 2035, the 24-hour PM_{2.5} concentrations within the project area are projected to be 76 percent below the Federal standard. The annual PM_{2.5} concentrations are projected to be 77 percent below the Federal standard. The largest increase in PM_{2.5} is under Alternative 6A, where the project would increase the emissions along I-710 by 24 percent over the existing conditions. If re-entrained dust were excluded from the calculations, Alternative 6A would reduce the PM_{2.5} emissions by 90 pounds per day along I-710 when compared to the existing conditions. This is a decrease of approximately 13 percent. When calculated over the larger area of the SCAB region or the AOI, the project would have a minimal effect on long-term PM_{2.5} emissions.

The 24-hour PM₁₀ concentration is projected to be 85 percent below the Federal standard by 2035. The largest increase in PM₁₀ is under Alternative 6A, where the project would increase the emissions along I-710 by 68 percent over the existing conditions. If re-entrained dust were excluded from the calculations, Alternative 6A would reduce the PM₁₀ emissions by 11 pounds per day along I-710 when compared to the existing conditions. This is a decrease of approximately 1.3 percent. When calculated over the larger area of the SCAB region or the AOI, the project would have a minimal effect on long-term PM₁₀ emissions.

Design Options. For Alternatives 6A, 6B, and 6C, three design options for the portion of I-710 between the I-710/Slauson Ave. interchange to just south of the I-710/I-5 interchange are under consideration. However, these design options would not substantially affect the regional VMT. Therefore, the results listed in Tables J through O would also apply to the design alternatives.

CONCLUSION

Transportation conformity is required under Section 176(c) of the CAA to ensure that federally supported highway and transit project activities are consistent with the purpose of the SIP. Conformity for the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant AAQS. As required by the 2006 Final Rule, this qualitative PM_{2.5} and PM₁₀ hot-spot analysis demonstrates that this project meets the CAA conformity requirements to support State and local air quality goals with respect to potential localized air quality impacts.

It is not expected that changes to PM_{2.5} and PM₁₀ emissions levels associated with the proposed project would result in new violations of the Federal air quality standards for the following reasons:

- Based on the local monitoring data, without the proposed project, the 24-hour $PM_{2.5}$ concentrations within the project area would be reduced to 29 percent below the Federal standard by 2015 and to 76 percent below the Federal standard by 2035.
- Based on the local monitoring data, without the proposed project, the annual average $PM_{2.5}$ concentrations within the project area would be reduced to 27 percent below the Federal standard by 2015 and to 76 percent below the Federal standard by 2035.
- With the exception of 2007, the ambient PM_{10} concentrations have not exceeded the 24-hour or annual Federal standard.
- Based on the projected PM_{10} concentrations listed in the 2007 AQMP, without the proposed project, the 24-hour PM_{10} concentrations would be 49 percent below the Federal standard by 2015 and 85 percent below the Federal standard by 2035.
- The project would increase the regional $PM_{2.5}$ emissions by up to 24 percent when compared to the existing conditions. This increase is less than the 76 percent reduction expected in the SIP for regional $PM_{2.5}$ concentrations by 2035. If re-entrained dust is excluded from the calculations, all of the project alternatives would reduce the $PM_{2.5}$ emissions when compared to the existing conditions.
- The project would increase the regional PM_{10} emissions by up to 68 percent when compared to the existing conditions. This increase is less than the 85 percent reduction expected in the SIP for regional PM_{10} concentrations by 2035. If re-entrained dust were excluded from the calculations, all of the project alternatives would reduce the PM_{10} emissions when compared to the existing conditions.

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

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

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

URS, Freeway Traffic Operations Analysis Report, November 18, 2011.

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APPENDIX PM-A

PM_{2.5} AND PM₁₀ MODELING RESULTS

Table 1A. Comparison of 2035 Alternatives to 2008 within South Coast Air Basin

Pollutant	SCAB (lb/day)						South Coast Air Basin										SCAQMD CEQA Mass Emission Thresholds (lb/day)
	2008	Alt 1	Alt 5a	Alt 6a	Alt 6b	Alt 6c	Alt. 1 - 2008		Alt. 5A - 2008		Alt. 6A - 2008		Alt. 6B - 2008		Alt. 6C - 2008		
							lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	
PM ₁₀ (Total)	154,589	177,990	177,978	178,153	177,847	177,865	23,000	15%	23,000	15%	24,000	15%	23,000	15%	23,000	15%	150
PM ₁₀ (Exhaust)	58,878	49,404	49,432	49,438	49,105	49,178	(9,530)	-16%	(9,400)	-16%	(9,400)	-16%	(9,600)	-17%	(9,700)	-16%	-
PM ₁₀ (Entrained)	95,713	128,586	128,545	128,714	128,742	128,687	33,000	34%	33,000	34%	33,000	34%	33,000	35%	33,000	34%	-
PM _{2.5} (Total)	67,381	84,582	85,108	85,141	84,894	84,937	(2,830)	-4%	(2,300)	-3%	(2,200)	-3%	(2,500)	-4%	(2,400)	-4%	55
PM _{2.5} (Exhaust)	43,888	33,001	33,556	33,548	33,294	33,350	(11,000)	-25%	(10,000)	-24%	(10,000)	-24%	(11,000)	-24%	(11,000)	-24%	-
PM _{2.5} (Entrained)	23,493	31,582	31,552	31,594	31,600	31,587	8,100	34%	8,100	34%	6,100	34%	8,100	35%	8,100	34%	-

Table 1B. Comparison of 2035 Alternatives to 2008 within Area of Interest

Pollutant	ADI (lb/day)						Area of Interest									
	2008	Alt 1	Alt 5a	Alt 6a	Alt 6b	Alt 6c	Alt. 1 - 2008		Alt. 5A - 2008		Alt. 6A - 2008		Alt. 6B - 2008		Alt. 6C - 2008	
							lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
PM ₁₀ (Total)	38,962	36,783	38,874	39,107	38,795	38,822	1,800	5%	1,800	5%	2,100	6%	1,800	5%	1,800	5%
PM ₁₀ (Exhaust)	13,988	10,573	10,594	10,664	10,334	10,402	(3,400)	-24%	(3,400)	-24%	(3,300)	-24%	(3,600)	-26%	(3,600)	-26%
PM ₁₀ (Entrained)	23,024	26,210	28,280	28,443	28,461	28,420	5,200	23%	5,300	23%	5,400	24%	5,400	24%	5,400	23%
PM _{2.5} (Total)	16,115	14,043	14,177	14,252	14,015	14,057	(2,100)	-13%	(1,900)	-12%	(1,900)	-12%	(2,100)	-13%	(2,100)	-13%
PM _{2.5} (Exhaust)	10,484	7,124	7,235	7,280	7,029	7,081	(3,300)	-32%	(3,200)	-31%	(3,200)	-30%	(3,400)	-33%	(3,400)	-32%
PM _{2.5} (Entrained)	5,651	6,924	6,942	6,972	6,986	6,976	1,300	23%	1,300	23%	1,300	24%	1,300	24%	1,300	23%

Table 1C. Comparison of 2035 Alternatives to 2008 for the I-710 Freeway

Pollutant	I710 (lb/day) *Using Raw Data						I-710									
	2008	Alt 1	Alt 5a	Alt 6a	Alt 6b	Alt 6c	Alt. 1 - 2008		Alt. 5A - 2008		Alt. 6A - 2008		Alt. 6B - 2008		Alt. 6C - 2008	
							lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
PM ₁₀ (Total)	1,893	2,120	2,476	3,168	2,912	2,812	230	12%	580	31%	1,300	68%	1,800	54%	320	46%
PM ₁₀ (Exhaust)	868	569	678	857	534	578	(330)	-34%	(190)	-22%	(11)	-1%	(330)	-39%	(290)	-33%
PM ₁₀ (Entrained)	1,325	1,552	1,798	2,330	2,378	2,234	530	51%	770	75%	1,300	127%	1,400	132%	1,200	118%
PM _{2.5} (Total)	942	767	908	1,172	937	936	(170)	-19%	(36)	-4%	233	24%	(44)	0%	(81)	-1%
PM _{2.5} (Exhaust)	890	387	485	600	354	387	(330)	-44%	(230)	-33%	(90)	-12%	(343)	-49%	(300)	-44%
PM _{2.5} (Entrained)	252	381	421	572	584	548	130	51%	150	75%	323	127%	330	132%	300	118%

Notes:

Parenthesis indicate a negative value

Alternative 6B and 6C assume that the trucks will have zero exhaust emissions while they are traveling on the freight corridor. It should be noted that the entrained dust (both PM₁₀ and PM_{2.5}) emissions are not zero for the trucks traveling on the freight corridor for Alt. 6B and Alt. 6C

Emissions based on the Southern California Association of Governments I-710 Traffic Model data

Table 2A. Comparison of Future Build Alternatives to No-Build Alternatives within South Coast Air Basin

Pollutant	SCAB (lb/day)					South Coast Air Basin							
	Alt1	Alt5a	Alt6a	Alt6b	Alt6c	Alt. 5A - Alt. 1		Alt. 6A - Alt. 1		Alt. 6B - Alt. 1		Alt. 6C - Alt. 1	
						lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
PM10 (Total)	177,990	177,978	178,153	177,847	177,865	(12)	0%	160	0%	(140)	0%	(120)	0%
PM10 (Exhaust)	49,404	49,432	49,438	49,105	49,178	29	0%	35	0%	(300)	-1%	(230)	0%
PM10 (Entrained)	128,586	128,545	128,714	128,742	128,687	(41)	0%	130	0%	160	0%	100	0%
PM2.5 (Total)	64,563	65,108	65,141	64,894	64,937	540	1%	580	1%	330	1%	370	1%
PM25 (Exhaust)	33,001	33,556	33,548	33,294	33,350	550	2%	550	2%	290	1%	350	1%
PM25 (Entrained)	31,562	31,552	31,594	31,600	31,587	(10)	0%	32	0%	38	0%	25	0%

Table 2B. Comparison of Future Build Alternatives to No-Build Alternatives within Area of Interest

Pollutant	AOI (lb/day)					Area of Interest							
	Alt1	Alt5a	Alt6a	Alt6b	Alt6c	Alt. 5A - Alt. 1		Alt. 6A - Alt. 1		Alt. 6B - Alt. 1		Alt. 6C - Alt. 1	
						lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
PM10 (Total)	38,783	38,874	39,107	38,795	38,822	92	0%	320	1%	12	0%	39	0%
PM10 (Exhaust)	10,573	10,594	10,664	10,334	10,402	21	0%	91	1%	(240)	-2%	(190)	-2%
PM10 (Entrained)	28,210	28,280	28,443	28,461	28,420	71	0%	230	1%	250	1%	140	1%
PM25 (Total)	14,049	14,177	14,262	14,015	14,057	130	1%	210	2%	(34)	0%	7.9	0%
PM25 (Exhaust)	7,124	7,235	7,280	7,029	7,081	110	2%	160	2%	(96)	-1%	(44)	-1%
PM25 (Entrained)	6,924	6,942	6,981	6,986	6,976	17	0%	57	1%	62	1%	52	1%

Table 2C. Comparison of Future Build Alternatives to No-Build Alternatives for the I-710 Freeway Itself

Pollutant	I710 (lb/day)					I-710							
	Alt1	Alt5a	Alt6a	Alt6b	Alt6c	Alt. 5A - Alt. 1		Alt. 6A - Alt. 1		Alt. 6B - Alt. 1		Alt. 6C - Alt. 1	
						lb/day	% Change	lb/day	% Change	lb/day	% Change	lb/day	% Change
PM10 (Total)	2,120	2,476	3,188	2,912	2,812	360	17%	1,100	50%	790	37%	690	33%
PM10 (Exhaust)	569	678	857	534	578	110	19%	290	51%	(35)	-6%	9.3	2%
PM10 (Entrained)	1,552	1,798	2,330	2,378	2,234	250	16%	780	50%	830	53%	680	44%
PM2.5 (Total)	767	906	1,172	937	936	140	18%	400	53%	170	22%	170	22%
PM25 (Exhaust)	387	465	600	354	387	78	20%	210	55%	(33)	-8%	0.77	0%
PM25 (Entrained)	381	441	572	584	548	61	16%	190	50%	200	53%	170	44%

Notes:

Parenthesis indicate a negative value.

Alternative 6B and 6C assume that the trucks will have zero exhaust emissions while they are traveling on the freight corridor. It should be noted that the entrained dust (both PM10 and PM2.5) emissions are not zero for the trucks traveling on the freight corridor for Alt. 6B and Alt. 6C.

Emissions based on the Southern California Association of Governments I-710 Traffic Model data.

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This Appendix discusses the methodology used to develop the emission inventories for the 2008 baseline and 2035 alternatives for both the criteria pollutants and the MSATs from traffic operations. These emission inventories were used to assess incremental emission impacts and for the I-710 freeway itself, were used as the basis for emission inputs to the air quality and health risk modeling for the Project.

C.1. Emission Inventory Development Methodology

Emission inventories were developed for the exhaust pollutants NO_x, CO, PM₁₀, PM_{2.5}, ROG, SO₂, TOG and DPM using the equation shown below.

$$\text{Total Exhaust Emissions for a Pollutant (lb/day)} = \frac{1}{453.59} \times \sum_k \sum_j \sum_i EF_{i,S_{j,k}} \times VMT_{i,j,k}$$

.....Equation C.1

Where,

- 453.59 = Conversion factor from pounds to grams
- i = A particular vehicle class. Vehicle classes used in this analysis include automobiles, light-heavy duty trucks (LHDT), medium-heavy duty trucks (MHDT), heavy-heavy duty trucks (HHDT), and port trucks
- j = A particular time period. A day was split into four time periods in this analysis: AM (6 AM to 9 AM), mid-day (9 AM to 3 PM), PM (3 PM to 7 PM), and night time (7 PM to 6 AM)
- k = A particular traffic link or section of a roadway in the region, for which emissions are calculated.
- S_{j,k} = Average vehicle speed during the jth time period for the kth link.
- VMT_{i,j,k} = Total vehicle miles travelled by the ith vehicle class during the jth time period in the kth traffic link. This is calculated as a product of length of the kth traffic link and the traffic volume of the ith vehicle class during the jth time period flowing through the kth traffic link
- EF_{i,S_{j,k}} = Pollutant emission factor of the ith vehicle class at speed S_{j,k} expressed in grams per miles

Total exhaust emissions were calculated for three regions (see Figure ES.1 in the main report): the South Coast Air Basin (SCAB), the Area of Interest (AOI), and the I-710 freeway (which may include a freight corridor and related ramps, depending on the alternative). The various input parameters in Equation C.1 above (such as link length, average vehicle speed, and traffic volumes) were obtained from the traffic data as described in Section C.2. The traffic model used in this analysis assigns one-directional traffic flows for traffic links (sections of roadways) that represent freeways, ramps and one-way streets. All other traffic links were assigned bidirectional vehicle flow. For bi-directional traffic links, average speeds and vehicle flows were

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provided in the traffic data for each individual direction. Emissions in each direction were calculated separately and summed up using the methodology shown in the Equation C.1. The emission factors used in Equation C.1 were generated by running the EMFAC2007¹ model for both 2008 (baseline year) and 2035 and further adjusted as described in Section C.

Total PM₁₀ and PM_{2.5} emission inventories were developed by summing up the exhaust and entrained road dust PM emissions. Exhaust PM emissions were calculated using Equation C.1 and the entrained PM emissions were calculated based on EPA's AP-42 equation for paved road dust (released January 2011). Section C.4 provides details of the methodology used to calculate the entrained PM emissions.

Emission inventories of the MSATs were calculated from the exhaust TOG emission inventory using speciation profiles for the MSATs of interest. Section C.5 provides a description of this methodology, and Section C.6 presents the unique nature of the 2035 DPM emission factor.

¹ Note that CARB released EMFAC2011 in September 2011, after the emission analysis was completed and modeling was well underway. Based on an initial review, it is not anticipated that the results of the analysis using the adjusted EMFAC2007 emission factors would be substantially changed using EMFAC2011. For example, EMFAC2011 reflects CARB's October 2008 "Regulation to Control Emission from In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks" and December 2008 "Truck and Bus Regulation." See Section C.3 for more details.

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C.2. Traffic Data

Cambridge Systematics Incorporated (CSI), a member of the I-710 Project Team, ran a modified version of the Southern California Association of Governments (SCAG) Regional Transportation Plan Travel Demand Model (the SCAG model) for the years 2008 and 2035 to estimate the traffic volumes and speeds for the various traffic links in the SCAG network for the I-710 Project. The output of the I-710 Traffic Model provides several parameters including a unique identifier for each link in the SCAG network (Link ID), description of each link (road name, route name, and road type), link lengths, average vehicle speeds and traffic volumes for each link during four different time periods (AM, mid-day, PM and night time). Within each time period traffic flow was sub-divided into five different vehicle classes as shown below.

- Automobiles (further divided into three sub-classes: drive alone, shared ride, and 3-person carpool),
- Light-heavy duty trucks,
- Medium-heavy duty trucks,
- Heavy-heavy duty trucks, and
- Port trucks.

To calculate the emissions using Equation C.1 the vehicle classes from the I-710 Traffic Model had to be matched with the vehicle classes in the EMFAC2007 model (EMFAC2007 provides emission factors). Table 1 documents this matching process.

Table 1: Matching of EMFAC2007 Vehicle Classification to I-710 Traffic Model Classification			
SCAG Model Vehicle Class	Corresponding EMFAC2007 Classes	Description	EMFAC2007 Weight Class (lbs)
Automobile (Drive Alone, 2 Person and 3 Person Carpool)	PC, LDT1, LDT2, MDV	Passenger cars, light duty trucks, medium duty trucks and motorcycles	0 - 8,500
Light Duty Trucks	LHDT1, LHDT2	Light-heavy duty trucks	8,501 - 14,000
Medium Duty Trucks	MHDT	Medium-heavy duty trucks	14,001 - 33,000
Heavy Duty Trucks	HHDT	Heavy-heavy duty trucks	33,001 - 60,000
Port Trucks	HHDT	Heavy-heavy duty trucks	33,001 - 60,000

For air quality and health risk modeling of I-710 freeway emissions, the I-710 Traffic Model results were further adjusted and/or calibrated using actual traffic counts at specific locations on the I-710 to provide more accurate traffic volumes (referred to as “post-processed traffic data”

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hereinafter). The post-processed traffic volumes data (Tables C.3 -1.A through C.3 - 6.D) were available for the traffic links on the I-710 freeway and were used for calculating the emissions for the I-710 freeway links (See Tables C.4 - 1 through C.5 - 6) used in the impact modeling. Average vehicle speeds from the I-710 Traffic Model for the respective links were used for emission calculations. The traffic link lengths for the I-710 freeway were obtained from the URS geometric design. For the I-710 freeway, ENVIRON used the emissions of the post-processed traffic data, and I-710 freeway geometrics (link length and elevation) to evaluate ambient air quality impacts and health risks as described in Appendices D and E.

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C.3. Emission Factors

ENVIRON used the EMFAC2007 model to generate the emissions factors for the various criteria pollutants. EMFAC (short for Emission FACtor) is a computer model developed by CARB and can be used for estimating emission rates for on-road mobile sources for calendar years from 1970 to 2040 operating in California. Federal Register release Vol. 73, No. 13 on January 18, 2008 states that starting April 18, 2008, EMFAC2007 is required to be used statewide in all new regional emissions analyses and carbon monoxide (CO) hot-spot analyses for transportation conformity determinations in California. (Note that CARB released EMFAC2011 in September 2011, after the emission analysis was completed and modeling was well underway. Based on an initial review, it is not anticipated that the results of the analysis using the adjusted EMFAC2007 emission factors would be substantially changed using EMFAC2011. For example, EMFAC2011 reflects CARB's October 2008 "Regulation to Control Emission from In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks" and December 2008 "Truck and Bus Regulation." See below for more details.)

Emissions from the on-road vehicles can be categorized as follows:

- **Combustion Emissions (g/mile or g/hr for idling):** Combustion emissions (i.e., exhaust emissions) from the combustion of fuel, which are the main source of emissions for all pollutants. EMFAC2007 has the capability to provide emission factors for user defined vehicle speeds. EMFAC2007 provides combustion emission factors for the following pollutants: TOG, ROG, CO, NO_x, CO₂, PM₁₀, PM_{2.5} and SO₂.
- **Tire Wear (g/mile) and Brake Wear (g/mile):** Particulate emissions from tires and brakes occurring as a result of operational wear. EMFAC2007 provides PM₁₀ and PM_{2.5} emission factors for tire and brake wear.
- **Evaporative Running Loss Emissions (g/min):** EMFAC2007 also provides the evaporative hydrocarbon emission factors as a result of hot fuel vapor release during the operation of the vehicles. These hydrocarbon emissions are categorized as reactive organic gases (ROG) and toxic organic gases (TOG) by EMFAC2007.
- **Other Emissions:** These include start-up exhaust emissions, resting losses, and other evaporative emissions including hot soak emissions, partial day diurnal loss, multi day diurnal loss, partial day resting loss, multi day resting loss. EMFAC2007 provides emission factors for the appropriate pollutants from each of these sources as well.

For the I-710 Project, ENVIRON included the emission factors for combustion emissions, tire and brake wear, and evaporative running loss emissions. Other emissions mentioned above were not evaluated for this Project because the Project should have no quantifiable effect on these emission modes.

The exhaust NO_x, CO and SO₂ emissions factors used in this Project were the combustion emission factors (g/mi or g/hr (idling)) obtained from the EMFAC2007 model. The idling PM,

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ROG, and TOG emission factors were also directly obtained from the combustion emissions output of EMFAC2007. The non-idling PM, ROG, and TOC emission factors are derived as follows.

Exhaust PM emission factor for non-idling:

$$PM_{exhaust} = PM_c + PM_t + PM_b$$

.....Equation C.2

Where,

$PM_{exhaust}$	=	Non-Idle/running exhaust particulate matter emission factor (g/mi)
PM_c	=	Non-Idle/running combustion emission factor for PM (g/mi)
PM_t	=	Tire wear emission factor for PM (g/mi)
PM_b	=	Break wear emission factor for PM (g/mi)

The non-idling hydrocarbon HC (ROG and TOG) exhaust emission factors:

$$HC_{exhaust} = HC_c + HC_e \times \frac{60}{S}$$

.....Equation C.3

Where,

$HC_{exhaust}$	=	Non-Idle exhaust hydrocarbon emission factor (g/mi)
HC_c	=	Non-Idle combustion emission factor for PM (g/mi)
HC_e	=	Evaporative running loss emission factor for HC (g/min)
S	=	Speed (mi/hr)
60	=	Conversion factor from g/min to g/hr

(Note that ROG emissions are often referred to as VOC emissions. For the purposes of this analysis, they can be considered equivalent.) Emissions of individual MSATs are calculated by applying the compound-specific MSAT speciation profiles for exhaust and evaporative emissions to TOG emission estimates.

Besides emission factors, EMFAC2007 provides fuel usage data in g/mi (running) and g/hr (idling), which were used to develop GHG emission inventories as described in Appendix F. Vehicle weight data provided by EMFAC2007 were used to develop the traffic entrained PM emission inventories (Section C.4).

EMFAC2007 Input Data

The input data used for the EMFAC2007 model runs are presented in the following sections.

- Vehicle information:
 - Vehicle class: EMFAC2007 divides the on-road fleet into 13 different vehicle classes (as shown in the Table below).

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Table 2: Vehicle Classes Modeled In EMFAC2007				
Vehicle Class	Fuel Type	Code	Description	Weight Class (lbs)
1	Gas, Diesel, and Electric	PC	Passenger Cars	All
2	Gas, Diesel, and Electric	T1	Light-Duty Trucks	0-3750
3	Gas, Diesel	T2	Light-Duty Trucks	3751-5750
4	Gas, Diesel	T3	Medium-Duty Trucks	5751-8500
5	Gas, Diesel	T4	Light-Heavy-Duty	8501-10000
6	Gas, Diesel	T5	Light-Heavy-Duty	10001-14000
7	Gas, Diesel	T6	Medium-Heavy-Duty	14001-33000
8	Gas, Diesel	T7	Heavy-Heavy-Duty	33001-60000
9	Gas, Diesel	OB	Other Buses	All
10	Diesel	UB	Urban Buses	All
11	Gas	MC	Motorcycles	All
12	Gas, Diesel	SB	School Buses	All
13	Gas, Diesel	MH	Motor Homes	All

- Fuel type: Gasoline, Diesel and Electric, wherever applicable.
- Model year: All available vehicle model years for South Coast fleet were used.
- Inspection and Maintenance (I/M) condition: Vehicular emissions increase with their age as a result of vehicle defects, mal-maintenance, and tampering. For the purpose of this Project, default I&M program was used.
- Speed: Vehicular emissions are a function of the speed traveled, and generally follow a “U” shaped curve. Emissions per mile are highest at lower speeds and decrease with the increase in speed, reaching a minimum at speeds of 35-55 mph, depending on the vehicle type and pollutant. As the speed increases beyond the range above, the emissions per mile again increase with speed. Emission factors were calculated for vehicle speeds starting at idling (0 mph) and ranging up to maximum allowed design speed on the highway (70 mph) in the increments of 5 mph. However, only emissions factors for speeds estimated by the I-710 Traffic Model were used in the emission calculations.
- Operation information:
 - Geographic area: The Project is located in the South Coast Air Basin.

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- Calendar year: The calendar year dictates the available vehicle model years on the road and their age distribution, current control technology, and permissible emission levels for different vehicles/engines. EMFAC2007 emission modeling was performed for the base year as well as the year of operation/completion.
- Season: Annual average season was used which represents an average of all the monthly inventories.
- Temperature (-20 °F to 120 °F): For the purpose of this Project, representative ambient temperature(s) of 60 °F was used for the EMFAC2007 modeling.
- Relative Humidity (0% to 100%): An ambient relative humidity of 40%, which is representative of the South Coast Air Basin, was used for EMFAC2007 modeling.
- Method: As the Project domain is limited to the South Coast Air Basin, “Simple-Average” option was used as the calculation method. “Simple-Average” method uses area averaging to calculate averaged parameters for temperature, speed, relative humidity, and I/M.
- Modes: The model was run in “Emfac” mode, which generates emission factors in grams of pollutant emitted per vehicle activity (in grams/mile and grams/hr). Emfac mode also calculates a matrix of emission factors at specific values of temperature, relative humidity, and vehicle speed for each vehicle class/technology combination. The “Detailed Impact Rates (RTL)” option was selected, which gives the most detailed output.
- Other inputs: Default values for all other inputs were used.

Adjustments to EMFAC2007 Emission Factors

Since the last release of EMFAC2007 the following new regulations/other programs have been adopted/approved that will impact future emissions of heavy-duty trucks that travel on the I-710.

1. The CARB “Regulation to Control Emissions from In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks”
(<http://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm>)²
 - Phase 1: by Dec 31, 2009, all pre-1994 engine model years (MYs) drayage trucks need to be retired or replaced with 1994 or newer engines AND all 1994 – 2003 engine MY will need to demonstrate an 85% reduction in PM emissions.
 - Phase 2: after Dec 31, 2013, all drayage trucks will be required to further reduce emission to meet 2007 engine emission standards.
2. The Clean Trucks Program that is part of the approved POLA/POLB Clean Air Action Plan (CAAP) (<http://www.cleanairactionplan.org/strategies/cleantrucks/default.asp>)
 - Oct. 1, 2008: All pre-model 1989 engine MY are banned from entering the Port.

² Adopted on October 12, 2008. <http://www.arb.ca.gov/regact/2007/drayage07/drayage07.htm>

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- Jan 1, 2010: All 1989 – 2003 engine model years are banned from entering the Port.
 - Jan 1, 2012: Only trucks meeting the 2007 or better federal emissions standards will be permitted to operate at the Port.
3. The CARB “Truck and Bus Regulation”, adopted December 2008 (<http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>)
- Requirements
 - Owners must reduce emissions by upgrading vehicles one of three ways:
 - PM retrofits and replace vehicles (or engines) according to a prescribed schedule.
 - PM retrofits to a minimum number of engines each year and to replace a minimum number of older engines with newer engines meeting the 2010 engine standards.
 - Meet the fleet average based on the fleet owner’s prerogative using PM and NOX retrofits.
 - Compliance Dates
 - PM requirements begin Jan 1, 2011.
 - NOx reductions starting Jan 1, 2013.
 - For fleets smaller than 3 vehicles performance requirements are expected by Jan 1, 2014.
 - By Jan 1, 2023 all vehicles must have a 2010 model year engine or equivalent.

The present version of EMFAC2007 model does not account for emission reductions for medium heavy-duty and heavy heavy-duty trucks (including port trucks) for the above adopted regulations/ programs. Therefore, the emission factors for medium heavy-duty and heavy heavy-duty trucks from EMFAC2007 model were adjusted to reflect the reductions for the above regulations/programs as discussed below.

The CARB “Regulation to Control Emissions from In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks” (Drayage Truck rule) requires that all drayage trucks further reduce emission to meet 2007 engine emission standards after December 31, 2013. The Clean Truck Program of POLA/POLB (Clean Truck Program or CTP) requires that only trucks meeting the 2007 or better federal emissions standards will be permitted to operate at the Port starting January 1, 2012. Therefore, the Clean Truck Program has stricter requirements as compared to the ARB Drayage truck rule and any adjustment made to the EMFAC2007 emission factors to account for the Clean Truck Program essentially covers the emission reductions on account of the ARB Drayage Truck rule.

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Adjustment to EMFAC2007 Emission Factor to Account for Truck and Bus Regulation

To adjust emission factors for the non-port medium- and heavy-duty truck emission factors in the calendar year 2035 the following approach was used. The Statewide truck and Bus rule requires public fleets to achieve reductions in fleet emissions for both PM₁₀ and NO_x beginning in December of 2009. The fleet emission target rates become progressively more stringent for every compliance year (2013 – 2023). It was assumed that the fleet target emission rates indicated for 2023 would be applicable in 2035 because a lack of any other guidance. The emission factors for medium- and heavy-duty fleets in the calendar year 2035 were adjusted using the following steps:

First, the medium- and heavy-duty fleet mass emissions were generated by running EMFAC2007 in the “burden” mode.

Mass emissions were then converted into an emission factor using the total vehicle miles travelled per day for both medium- and heavy-duty diesel fleets to obtain a default emission factor for the fleet.

As the next step, a “control factor” was developed which was the Statewide Truck and Bus 2023 target fleet emission factor divided by the EMFAC2007 default emission factor. This control factor was applied to EMFAC2007 speed dependent emission factors obtained for the calendar year 2035 to obtain the “adjusted emission factor”.

Adjustment to EMFAC2007 Emission Factor to Account for Clean Truck Program

The Clean Truck Programs administered by the Ports of Long Beach and Los Angeles are designed to accelerate the retrofit and/or replacement of older diesel trucks with cleaner trucks that meet current engine emission standards. One effect of the CTPs, which began its phased implementation in 2008, is to change the age distribution of trucks that serve the Ports, now and for future years. Emission factors from EMFAC2007 were adjusted for the Clean Truck Program by adjusting the population distribution of engine model years modeled in EMFAC2007. The fleet age distribution, developed by StarCrest, which accounted for the fleet turnover due to the CTP was used. This fleet age distribution has been used by the Ports for developing various emission inventories. The following steps were used to make this adjustment:

The default emission factors were obtained for each model year that exists within the 2035 fleet, omitting engine model years banned from entering the port due to the CTP.

The emission factor for a given model year was then weighted by the new fleet age distribution to get the weighted emission factor for that model year. For example if the fleet age distribution showed that 5% of the fleet in 2035 would be 2008 model year trucks, the emission factor for 2008 was multiplied by 5%.

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Finally, the weighted emission factors were added to obtain an adjusted emission factor for 2035.

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C.4. Entrained PM Emissions

This section presents the methodology used to estimate the entrained PM emissions for paved roadways in the SCAB, AOI, and the I-710 freeway for the 2008 baseline and 2035 alternatives. The primary source of entrained PM emissions during operation on the roadways is the re-suspension of loose particulate material from the surface of the road as a result of vehicle movement.

Emission inventories for traffic entrained PM emissions were generated using Equation C.4. The primary drivers for the total entrained PM emissions include vehicle miles travelled (see Equation C.4) and the fraction of heavy-duty vehicles on the roadway, which affects the average vehicle weight on the traffic link (see Equation C.5). As in the case of the other criteria pollutants, entrained PM emission inventories for SCAB, AOI, and the I-710 freeway were developed using the I-710 Traffic Model data. Entrained PM emissions for the I-710 freeway were also calculated using the post-processed traffic data, which were then used to estimate the ambient air quality impacts.

$$\text{Total Entrained PM} = \sum_i E_i \times \text{VMT}_i$$

.....Equation C.4

Where,

- i = A particular traffic link as defined in the I-710 Traffic Model
- E_i = Entrained Particulate Matter (PM) emission factor in lb/VMT for the i^{th} traffic link calculated using Equation C.5
- VMT_i = Total vehicle miles travelled in the i^{th} traffic link. This is calculated as a sum of the vehicle miles travelled by the individual vehicle classes in the i^{th} traffic link. Vehicle miles travelled by an individual vehicle class in a particular traffic link can be estimated by multiplying the length of that traffic link with the traffic flow of the individual vehicle class through that traffic link.

The entrained PM emission factor required to develop the entrained PM emissions inventory was calculated using EPA's AP-42 equation³ as shown below (Equation C.5).

$$E_i = k \times sL^{0.91} \times W_i^{1.02} \times \left(1 - \frac{P}{4 \times N}\right)$$

.....Equation C.5

Where,

- E = Entrained Particulate Matter (PM) emission factor in lb/VMT (VMT refers to Vehicle Miles Travelled)

³ <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf> (dated January 2011)

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- k = Particle size multiplier. This is equal to 0.0054 lb/VMT for entrained PM₁₀ and 0.0022 lb/VMT for entrained PM_{2.5}
- sL = Road surface silt loading factor
- W_i = Average weight in tons of the vehicles travelling on the ith traffic link calculated using Equation C.6
- P = Number of wet days of precipitation with at least 0.1 inch of precipitation in the averaging period N.
- N = Number of days in the averaging period

Input parameters needed to calculate the entrained PM emission factor are discussed below.

Silt Loading: CARB⁴ and SCAQMD's 2007 AQMP provide average silt loading factors based on road type. Using this data, silt loading factors were assigned to each traffic link based on the road type specified in the I-710 Traffic Model as shown in Table 3.

Table 3: Silt Loading Values	
Road Types in the I-710 Traffic Model	Silt Loading sL (g/m²)
Freeway, HOV, Expressway/Parkway, Ramps, Truck Lanes	0.022
Principal Arterial, Minor Arterial, Major Collector, Centroid Connector	0.035
Minor Collector	0.32

Average Vehicle Weight: The average vehicle weight on each link was calculated using a weighted average method (Equation C.4) following the procedure stated in EPA's AP-42 methodology for calculation of entrained PM emissions from paved roads.

$$W_i = \frac{\sum_j W_j \times VMT_{i,j}}{VMT_i}$$

.....Equation C.6

Where,

- i = A particular traffic link as defined in the I-710 Traffic Model
- W_i = Average Vehicle Weight on the ith traffic link
- j = A particular vehicle class as defined in the I-710 Traffic Model
- W_j = Median Vehicle Weight for the jth vehicle class (see Table 4)

⁴ <http://www.arb.ca.gov/ei/areasrc/PMSJVPavedRoadMethod2003.pdf>

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- $VM_{T_{ij}}$ = Vehicle miles travelled by the j^{th} vehicle class in the i^{th} traffic link. This is calculated as a product of the length of j^{th} traffic link and traffic volume of the i^{th} vehicle class passing through the j^{th} traffic link
- VM_{T_i} = Total vehicle miles travelled in the i^{th} traffic link. This is calculated as a sum of the vehicle miles travelled by individual vehicle classes in the i^{th} traffic link.

The average weight for any I-710 Traffic Model vehicle class was determined from EMFAC2007. EMFAC2007 provides a weight range (see Table 2) for the various vehicle classes. The average weight for the range for a given vehicle class was used as the weight for that particular vehicle class as shown in Table 4 below.

Table 4: Median Vehicle Weight for I-710 Traffic Model Vehicle Classes	
Vehicle Class in the I-710 Traffic Model	Average Weight from the EMFAC2007 model (tons)
Automobiles	2.13
Light-Heavy Duty Trucks	5.63
Medium-Heavy Duty Trucks	11.75
Heavy-Heavy Duty Trucks	23.25
Port Trucks	23.25

Precipitation: Figure 13.2.1-2 in EPA's AP-42 methodology for calculation of entrained PM emissions from paved roads provides annual precipitation data for United States. Using this figure the number of wet days in a year with at least 0.01 inches of precipitation was found to be 40 for the South Coast Air Basin.

Table C.1.1C. 2008 EMFAC Emission Factors for PM2.5

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	0.00	0.00	0.00	0.00	0.14	0.40	0.20	0.76	1.89	0.00
1	0.06	0.07	0.13	0.13	0.06	0.09	0.07	0.60	2.93	0.09
2	0.06	0.07	0.13	0.13	0.06	0.09	0.07	0.60	2.93	0.09
3	0.06	0.07	0.12	0.12	0.06	0.09	0.07	0.60	2.93	0.08
4	0.06	0.07	0.11	0.11	0.06	0.09	0.07	0.60	2.93	0.08
5	0.05	0.06	0.11	0.10	0.06	0.09	0.07	0.60	2.93	0.07
6	0.05	0.06	0.10	0.09	0.06	0.09	0.07	0.57	2.74	0.07
7	0.05	0.05	0.09	0.09	0.06	0.09	0.06	0.55	2.55	0.06
8	0.04	0.05	0.08	0.08	0.05	0.08	0.06	0.52	2.37	0.06
9	0.04	0.05	0.08	0.08	0.05	0.08	0.06	0.50	2.18	0.05
10	0.04	0.04	0.07	0.07	0.05	0.07	0.05	0.47	1.99	0.05
11	0.03	0.04	0.07	0.07	0.04	0.07	0.05	0.45	1.86	0.05
12	0.03	0.04	0.06	0.06	0.04	0.07	0.05	0.43	1.72	0.04
13	0.03	0.04	0.06	0.06	0.04	0.06	0.05	0.41	1.58	0.04
14	0.03	0.03	0.06	0.05	0.04	0.06	0.04	0.40	1.45	0.04
15	0.03	0.03	0.05	0.05	0.04	0.06	0.04	0.38	1.31	0.04
16	0.03	0.03	0.05	0.05	0.03	0.06	0.04	0.36	1.23	0.03
17	0.03	0.03	0.05	0.05	0.03	0.05	0.04	0.35	1.15	0.03
18	0.02	0.03	0.04	0.04	0.03	0.05	0.04	0.34	1.08	0.03
19	0.02	0.03	0.04	0.04	0.03	0.05	0.03	0.32	1.00	0.03
20	0.02	0.03	0.04	0.04	0.03	0.05	0.03	0.31	0.92	0.03
21	0.02	0.02	0.04	0.04	0.03	0.05	0.03	0.30	0.89	0.03
22	0.02	0.02	0.04	0.04	0.03	0.04	0.03	0.29	0.86	0.03
23	0.02	0.02	0.03	0.03	0.03	0.04	0.03	0.28	0.83	0.03
24	0.02	0.02	0.03	0.03	0.03	0.04	0.03	0.27	0.80	0.02
25	0.02	0.02	0.03	0.03	0.03	0.04	0.03	0.26	0.77	0.02
26	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.25	0.75	0.02
27	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.25	0.73	0.02
28	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.24	0.71	0.02
29	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.23	0.69	0.02
30	0.02	0.02	0.03	0.03	0.02	0.04	0.03	0.23	0.66	0.02
31	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.22	0.65	0.02
32	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.22	0.63	0.02
33	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.21	0.62	0.02
34	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.20	0.60	0.02
35	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.20	0.59	0.02
36	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.20	0.58	0.02
37	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.19	0.57	0.02
38	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.19	0.56	0.02
39	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.18	0.56	0.02
40	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.18	0.55	0.02
41	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.18	0.55	0.02
42	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.17	0.55	0.02
43	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.17	0.55	0.02
44	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.17	0.54	0.02
45	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.16	0.54	0.02
46	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.16	0.55	0.02
47	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.16	0.56	0.02
48	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.16	0.56	0.02
49	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.16	0.57	0.02
50	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.58	0.02
51	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.59	0.02
52	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.60	0.02
53	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.62	0.02
54	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.63	0.02
55	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.64	0.02

Table C.1.1C. 2008 EMFAC Emission Factors for PM_{2.5}

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
56	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.66	0.02
57	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.68	0.02
58	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.70	0.02
59	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.72	0.02
60	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.74	0.02
61	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.77	0.02
62	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.80	0.02
63	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.83	0.02
64	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.15	0.85	0.02
65	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	0.88	0.02
66	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	0.92	0.02
67	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	0.95	0.02
68	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	0.99	0.02
69	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.02	0.02
70	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.05	0.02
71	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.10	0.02
72	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.14	0.02
73	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.18	0.02
74	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.22	0.02
75	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.15	1.26	0.02
76	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.16	1.31	0.02
77	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.16	1.36	0.02
78	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.16	1.41	0.02
79	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.16	1.46	0.02
80	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.16	1.51	0.02

1. Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

2. EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

3. LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

4. HHD emission factors are also applied to port trucks.

5. Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1.1D. 2008 EMFAC Emission Factors for PM10

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
0	0.00	0.00	0.00	0.00	0.15	0.44	0.22	0.83	2.06	0.00
1	0.08	0.09	0.15	0.15	0.08	0.12	0.09	0.67	3.22	0.11
2	0.08	0.09	0.15	0.15	0.08	0.12	0.09	0.67	3.22	0.11
3	0.08	0.09	0.15	0.14	0.08	0.12	0.09	0.67	3.22	0.10
4	0.07	0.08	0.14	0.13	0.08	0.12	0.09	0.67	3.22	0.10
5	0.07	0.08	0.13	0.12	0.08	0.12	0.09	0.67	3.22	0.09
6	0.07	0.08	0.12	0.12	0.08	0.11	0.09	0.64	3.02	0.09
7	0.06	0.07	0.11	0.11	0.08	0.11	0.08	0.61	2.82	0.08
8	0.06	0.07	0.10	0.10	0.07	0.10	0.08	0.58	2.61	0.08
9	0.06	0.06	0.10	0.10	0.07	0.10	0.08	0.55	2.41	0.07
10	0.05	0.06	0.09	0.09	0.07	0.10	0.07	0.53	2.21	0.07
11	0.05	0.06	0.09	0.08	0.06	0.09	0.07	0.51	2.06	0.06
12	0.05	0.05	0.08	0.08	0.06	0.09	0.07	0.49	1.91	0.06
13	0.05	0.05	0.08	0.08	0.06	0.09	0.07	0.47	1.76	0.06
14	0.05	0.05	0.07	0.07	0.06	0.08	0.06	0.45	1.61	0.06
15	0.04	0.05	0.07	0.07	0.06	0.08	0.06	0.43	1.46	0.05
16	0.04	0.05	0.07	0.06	0.05	0.08	0.06	0.41	1.38	0.05
17	0.04	0.05	0.06	0.06	0.05	0.07	0.06	0.40	1.29	0.05
18	0.04	0.04	0.06	0.06	0.05	0.07	0.06	0.38	1.21	0.05
19	0.04	0.04	0.06	0.06	0.05	0.07	0.05	0.37	1.12	0.05
20	0.04	0.04	0.06	0.06	0.05	0.07	0.05	0.35	1.04	0.04
21	0.04	0.04	0.05	0.05	0.05	0.07	0.05	0.34	1.01	0.04
22	0.04	0.04	0.05	0.05	0.05	0.06	0.05	0.33	0.98	0.04
23	0.03	0.04	0.05	0.05	0.05	0.06	0.05	0.32	0.94	0.04
24	0.03	0.04	0.05	0.05	0.04	0.06	0.05	0.31	0.91	0.04
25	0.03	0.04	0.05	0.05	0.04	0.06	0.05	0.30	0.88	0.04
26	0.03	0.04	0.05	0.05	0.04	0.06	0.05	0.29	0.86	0.04
27	0.03	0.04	0.05	0.05	0.04	0.06	0.05	0.29	0.83	0.04
28	0.03	0.04	0.05	0.04	0.04	0.06	0.04	0.28	0.81	0.04
29	0.03	0.03	0.04	0.04	0.04	0.06	0.04	0.27	0.78	0.04
30	0.03	0.03	0.04	0.04	0.04	0.06	0.04	0.26	0.76	0.04
31	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.26	0.74	0.04
32	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.25	0.73	0.03
33	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.24	0.71	0.03
34	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.24	0.70	0.03
35	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.23	0.68	0.03
36	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.23	0.67	0.03
37	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.22	0.66	0.03
38	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.22	0.65	0.03
39	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.21	0.64	0.03
40	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.21	0.64	0.03
41	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.21	0.64	0.03
42	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.20	0.63	0.03
43	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.20	0.63	0.03
44	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.20	0.63	0.03
45	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.20	0.63	0.03
46	0.03	0.03	0.04	0.04	0.03	0.05	0.04	0.19	0.64	0.03
47	0.03	0.03	0.04	0.04	0.03	0.05	0.04	0.19	0.65	0.03
48	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.19	0.65	0.03
49	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.19	0.66	0.03
50	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.67	0.03
51	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.68	0.03
52	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.69	0.03
53	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.71	0.03
54	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.72	0.03
55	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.74	0.03

Table C.1.1D. 2008 EMFAC Emission Factors for PM10

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²									
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD ⁴	Autos ⁵
56	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.76	0.03
57	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.78	0.03
58	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	0.80	0.03
59	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.83	0.03
60	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.85	0.03
61	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.88	0.03
62	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.91	0.03
63	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.94	0.03
64	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	0.97	0.03
65	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	1.00	0.03
66	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.17	1.04	0.03
67	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.07	0.03
68	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.11	0.03
69	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.15	0.03
70	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.19	0.03
71	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.23	0.03
72	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.28	0.03
73	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.32	0.03
74	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.18	1.37	0.03
75	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.18	1.41	0.03
76	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.19	1.47	0.03
77	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.19	1.52	0.03
78	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.19	1.57	0.04
79	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.19	1.62	0.04
80	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.20	1.68	0.04

1. Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.

2. EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.

3. LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.

4. HHD emission factors are also applied to port trucks.

5. Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin

Table C.1.2C. 2035 EMFAC Emission Factors for PM2.5

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
0	0.00	0.00	0.00	0.00	0.14	0.31	0.18	0.60	0.12	0.00	0.10
1	0.08	0.09	0.18	0.18	0.06	0.06	0.06	0.28	0.11	0.12	0.14
2	0.08	0.09	0.18	0.18	0.06	0.06	0.06	0.28	0.11	0.12	0.14
3	0.07	0.08	0.17	0.18	0.06	0.06	0.06	0.28	0.11	0.11	0.14
4	0.07	0.08	0.16	0.16	0.06	0.06	0.06	0.28	0.11	0.10	0.14
5	0.06	0.07	0.15	0.15	0.06	0.06	0.06	0.28	0.11	0.09	0.14
6	0.06	0.07	0.14	0.14	0.06	0.05	0.06	0.26	0.11	0.09	0.14
7	0.05	0.06	0.13	0.13	0.05	0.05	0.05	0.25	0.11	0.08	0.14
8	0.05	0.06	0.12	0.12	0.05	0.05	0.05	0.24	0.10	0.08	0.14
9	0.05	0.05	0.11	0.11	0.05	0.05	0.05	0.23	0.10	0.07	0.13
10	0.04	0.05	0.10	0.10	0.04	0.04	0.04	0.22	0.10	0.06	0.13
11	0.04	0.05	0.09	0.09	0.04	0.04	0.04	0.21	0.10	0.06	0.13
12	0.04	0.04	0.08	0.09	0.04	0.04	0.04	0.20	0.10	0.06	0.13
13	0.04	0.04	0.08	0.08	0.04	0.04	0.04	0.19	0.10	0.05	0.13
14	0.03	0.04	0.07	0.07	0.04	0.04	0.04	0.18	0.09	0.05	0.12
15	0.03	0.04	0.07	0.07	0.03	0.03	0.03	0.18	0.09	0.05	0.12
16	0.03	0.03	0.06	0.06	0.03	0.03	0.03	0.17	0.09	0.04	0.12
17	0.03	0.03	0.06	0.06	0.03	0.03	0.03	0.16	0.09	0.04	0.12
18	0.03	0.03	0.06	0.06	0.03	0.03	0.03	0.16	0.09	0.04	0.12
19	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.15	0.09	0.04	0.11
20	0.02	0.03	0.05	0.05	0.03	0.03	0.03	0.14	0.09	0.03	0.11
21	0.02	0.03	0.05	0.05	0.03	0.03	0.03	0.14	0.09	0.03	0.11
22	0.02	0.03	0.05	0.05	0.02	0.03	0.02	0.14	0.09	0.03	0.11
23	0.02	0.02	0.04	0.05	0.02	0.03	0.02	0.13	0.08	0.03	0.11
24	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.13	0.08	0.03	0.11
25	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.12	0.08	0.03	0.11
26	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.12	0.08	0.03	0.11
27	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.12	0.08	0.03	0.11
28	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.11	0.08	0.03	0.11
29	0.02	0.02	0.04	0.04	0.02	0.02	0.02	0.11	0.08	0.02	0.11
30	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.11	0.09	0.02	0.11
31	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.10	0.09	0.02	0.11
32	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.10	0.09	0.02	0.11
33	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.10	0.09	0.02	0.11
34	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.10	0.09	0.02	0.12
35	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.09	0.09	0.02	0.12
36	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.09	0.09	0.02	0.12
37	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.09	0.09	0.02	0.12
38	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.09	0.09	0.02	0.12
39	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.09	0.09	0.02	0.12
40	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.09	0.02	0.13
41	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.13
42	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.13
43	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.13
44	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.14
45	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.14
46	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.10	0.02	0.14
47	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.11	0.02	0.14
48	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.11	0.02	0.15
49	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.11	0.02	0.15
50	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.11	0.02	0.15
51	0.01	0.02	0.03	0.03	0.01	0.02	0.02	0.07	0.12	0.02	0.16
52	0.01	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.12	0.02	0.16
53	0.01	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.12	0.02	0.17
54	0.01	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.12	0.02	0.17
55	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.13	0.02	0.17
56	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.13	0.02	0.18
57	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.13	0.02	0.18
58	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.14	0.02	0.19
59	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.14	0.02	0.19
60	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.14	0.02	0.20
61	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.15	0.02	0.20
62	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.15	0.02	0.21
63	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.15	0.02	0.21
64	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.16	0.02	0.22

Table C.1.2C. 2035 EMFAC Emission Factors for PM2.5

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
65	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.16	0.02	0.22
66	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.17	0.02	0.23
67	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.17	0.02	0.24
68	0.02	0.02	0.03	0.03	0.01	0.02	0.01	0.07	0.18	0.02	0.24
69	0.02	0.02	0.03	0.03	0.01	0.02	0.02	0.07	0.18	0.02	0.25
70	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.18	0.02	0.25
71	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.19	0.02	0.26
72	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.19	0.02	0.27
73	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.20	0.02	0.27
74	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.20	0.02	0.28
75	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.21	0.02	0.29
76	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.07	0.21	0.02	0.30
77	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.22	0.02	0.30
78	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.22	0.02	0.31
79	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.23	0.02	0.32
80	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.08	0.24	0.02	0.33

1. Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.
2. EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.
3. LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.
4. Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin
5. Port Truck emissions are HHD emission factors adjusted by the projected fleet mix due to the Ports Clean Truck Program enacted in 2008 which bans certain model year engines from operating within the Ports. EMFAC2007 does not account for this rule.

Table C.1.2D. 2035 EMFAC Emission Factors for PM10

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
0	0.00	0.00	0.00	0.00	0.15	0.34	0.19	0.34	0.12	0.00	0.11
1	0.09	0.11	0.21	0.21	0.08	0.08	0.08	0.17	0.16	0.14	0.20
2	0.09	0.11	0.21	0.21	0.08	0.08	0.08	0.17	0.16	0.14	0.20
3	0.09	0.10	0.20	0.20	0.08	0.08	0.08	0.17	0.16	0.13	0.20
4	0.08	0.10	0.19	0.19	0.08	0.08	0.08	0.17	0.16	0.12	0.20
5	0.08	0.09	0.17	0.17	0.08	0.08	0.08	0.17	0.16	0.12	0.20
6	0.07	0.08	0.16	0.16	0.08	0.08	0.08	0.17	0.15	0.11	0.19
7	0.07	0.08	0.15	0.15	0.07	0.07	0.07	0.16	0.15	0.10	0.19
8	0.07	0.07	0.14	0.14	0.07	0.07	0.07	0.16	0.15	0.10	0.19
9	0.06	0.07	0.13	0.13	0.07	0.07	0.07	0.15	0.15	0.09	0.19
10	0.06	0.07	0.12	0.12	0.06	0.06	0.06	0.14	0.15	0.08	0.18
11	0.06	0.06	0.11	0.11	0.06	0.06	0.06	0.14	0.15	0.08	0.18
12	0.05	0.06	0.11	0.11	0.06	0.06	0.06	0.13	0.14	0.07	0.18
13	0.05	0.06	0.10	0.10	0.06	0.06	0.06	0.13	0.14	0.07	0.18
14	0.05	0.05	0.09	0.09	0.05	0.06	0.05	0.12	0.14	0.07	0.18
15	0.05	0.05	0.09	0.09	0.05	0.05	0.05	0.12	0.14	0.06	0.17
16	0.04	0.05	0.08	0.08	0.05	0.05	0.05	0.12	0.14	0.06	0.17
17	0.04	0.05	0.08	0.08	0.05	0.05	0.05	0.11	0.14	0.06	0.17
18	0.04	0.05	0.08	0.08	0.05	0.05	0.05	0.11	0.14	0.06	0.17
19	0.04	0.04	0.07	0.07	0.05	0.05	0.05	0.10	0.13	0.05	0.17
20	0.04	0.04	0.07	0.07	0.05	0.05	0.05	0.10	0.13	0.05	0.16
21	0.04	0.04	0.07	0.07	0.04	0.05	0.04	0.10	0.13	0.05	0.16
22	0.04	0.04	0.06	0.06	0.04	0.05	0.04	0.10	0.13	0.05	0.16
23	0.04	0.04	0.06	0.06	0.04	0.04	0.04	0.09	0.13	0.05	0.16
24	0.04	0.04	0.06	0.06	0.04	0.04	0.04	0.09	0.13	0.05	0.16
25	0.04	0.04	0.06	0.06	0.04	0.04	0.04	0.09	0.13	0.04	0.16
26	0.03	0.04	0.06	0.06	0.04	0.04	0.04	0.09	0.13	0.04	0.16
27	0.03	0.04	0.05	0.05	0.04	0.04	0.04	0.09	0.13	0.04	0.16
28	0.03	0.04	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.16
29	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.16
30	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.16
31	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.16
32	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.16
33	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.08	0.13	0.04	0.17
34	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.07	0.13	0.04	0.17
35	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.07	0.13	0.04	0.17
36	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.07	0.14	0.04	0.17
37	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.07	0.14	0.04	0.17
38	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.14	0.04	0.17
39	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.14	0.03	0.18
40	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.14	0.03	0.18
41	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.14	0.03	0.18
42	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.14	0.03	0.18
43	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.15	0.03	0.19
44	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.07	0.15	0.03	0.19
45	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.06	0.15	0.03	0.19
46	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.15	0.03	0.19
47	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.15	0.03	0.20
48	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.16	0.03	0.20
49	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.16	0.03	0.20
50	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.16	0.03	0.21
51	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.16	0.03	0.21
52	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.17	0.03	0.22
53	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.17	0.03	0.22
54	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.17	0.03	0.23
55	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.18	0.03	0.23
56	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.18	0.03	0.23
57	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.18	0.03	0.24
58	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.19	0.04	0.24
59	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.19	0.04	0.25
60	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.19	0.04	0.25
61	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.06	0.20	0.04	0.26
62	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.20	0.04	0.27

Table C.1.2D. 2035 EMFAC Emission Factors for PM10

Speed (mph) ¹	EMFAC2007 Emission Factor per Vehicle Class (g/mi) ²										
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	LHDT ³	MHD	HHD	Autos ⁴	Port Truck ⁵
63	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.20	0.04	0.27
64	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.21	0.04	0.28
65	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.21	0.04	0.28
66	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.22	0.04	0.29
67	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.22	0.04	0.30
68	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.23	0.04	0.30
69	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.23	0.04	0.31
70	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.23	0.04	0.32
71	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.24	0.04	0.32
72	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.24	0.04	0.33
73	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.25	0.04	0.34
74	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.26	0.04	0.35
75	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.26	0.04	0.35
76	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.27	0.04	0.36
77	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.27	0.04	0.37
78	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.28	0.04	0.38
79	0.03	0.03	0.05	0.05	0.03	0.03	0.03	0.06	0.28	0.04	0.39
80	0.03	0.03	0.05	0.05	0.03	0.04	0.03	0.06	0.29	0.04	0.40

1. Emission factors for speeds greater than 5 mph and that are not multiples of 5 mph are interpolated between the closest increments of 5 mph.
2. EMFAC2007 vehicle class area based on gross vehicular weights. Class abbreviations and corresponding gross vehicle weights are presented in the EMFAC2007 version 6.3.1 users guide.
3. LHDT emission factors are averaged from LHD1 and LHD2 which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin.
4. Auto emission factors are averaged from LDA, LDT1, LDT2 and MDV EMFAC2007 vehicle classes which are weighted by the fraction of vehicle miles traveled within the South Coast Air Basin
5. Port Truck emissions are HHD emission factors adjusted by the projected fleet mix due to the Ports Clean Truck Program enacted in 2008 which bans certain model year engines from operating within the Ports. EMFAC2007 does not account for this rule.

Table C.2.1A. EMFAC2007 Burden Run for the 2035 Calendar Year for MHD and HHD Vehicle Classes.

Title : SCAB Avg Annual CYr 2035 (HHD and MHD)
 # Version : Emfac2007 V2.3 Nov 1 2006
 # Run Date : 6/9/2009 16:46
 # Scen Year: 2035 -- All model years in the range 1995 to 2035 selected
 # Season : Annual
 # Area : South Coast
 # I/M Stat : Enhanced Interim (2005)
 # Emissions: Tons Per Period

RecType	ScenNum	Calendar Year	Area	Vehicle Class	Model Year	Vehicle Technology	Period	Pop	Vehicle Miles Traveled	Trips
Vh	1	2035	South Coast Air Basin	MHD	AllMYr	GAS	Day	28,396	1.38E+06	1,296,794
Vh	1	2035	South Coast Air Basin	MHD	AllMYr	DSL	Day	108,326	6.37E+06	3,037,450
Vh	1	2035	South Coast Air Basin	MHD	AllMYr	TOT	Day	136,722	7.76E+06	4,334,244
Vh	1	2035	South Coast Air Basin	HHD	AllMYr	GAS	Day	1,443	1.55E+05	65,896
Vh	1	2035	South Coast Air Basin	HHD	AllMYr	DSL	Day	72,317	1.53E+07	365,959
Vh	1	2035	South Coast Air Basin	HHD	AllMYr	TOT	Day	73,760	1.55E+07	431,855

Table C.2.1B. NOX and PM10 Emission Factors for HHD and MHD in 2035

Pollutant	Vehicle Class	Mass Emissions (ton/day) ¹	Mass Emission (g/day)	Vehicle Miles Traveled (mi/day)	Emission Factor (g/mi) ²
NOX	HHD	58.09	52,698,086	1.5E+07	3.44
	MHD	10.62	9,634,252	6.4E+06	1.51
PM10	HHD	1.96	1,778,073	1.5E+07	0.12
	MHD	0.8	725,744	6.4E+06	0.11

1. Reflects the summation of running and idle mass emissions
2. Emission factor is based on the burden performed for the 2035 calendar year and is a default emission factor based on vehicular activity and mass emissions within the South Coast Air Basin

Table C.2.1C. CARBs Statewide Public Fleet and Bus Rule Target
Emission Factors per Compliance Year ^{1,2}

Compliance Deadline (as of Jan 1)	Fleet NOX Targets (g/mi)		Fleet PM10 Targets (g/mi)	
	MHD	HHD	MHD	HHD
2013	8.5	14.4	0.38	0.71
2014	5.8	9.8	0.29	0.53
2015	5.8	9.8	0.17	0.32
2016	4.6	7.8	0.06	0.11
2017	4	6	0.06	0.11
2018	4	6	0.06	0.11
2019	4	6	0.06	0.11
2020	3.2	4.4	0.06	0.11
2021	3.2	4.4	0.06	0.11
2022	1.6	3	0.06	0.11
2023	0.8	1.6	0.06	0.11
2035	0.8	1.6	0.06	0.11

Table C.2.1D. Control Factors Used to Adjust EMFAC2007 2035 Emission Factors.

Vehicle Class	2035 Control Factors					
	NOx			PM10		
	EMFAC Default (g/mi)	Target (g/mi)	NOX Control Factor	EMFAC Default (g/mi)	Target (g/mi)	PM10 Control Factor
HHD	3.44	1.6	0.47	0.11	0.11	0.97
MHD	1.51	0.8	0.53	0.12	0.06	0.52

Table C.2.2A. 2035 Fleet Age Distribution

Model Year	Fraction of Model Year in 2035 ¹
2035	0.00462
2034	0.00479
2033	0.00570
2032	0.00615
2031	0.00886
2030	0.01622
2029	0.02584
2028	0.03591
2027	0.04590
2026	0.05637
2025	0.06577
2024	0.07173
2023	0.07324
2022	0.06870
2021	0.06440
2020	0.06046
2019	0.05756
2018	0.05263
2017	0.04815
2016	0.04411
2015	0.04101
2014	0.03734
2013	0.03202
2012	0.02801
2011	0.02262
2010	0.01909
2009	0.00000
2008	0.00000
2007	0.00000
2006	0.00000
2005	0.00000
2004	0.00000
2003	0.00000
2002	0.00000
2001	0.00000
2000	0.00000
1999	0.00000
1998	0.00000
1997	0.00000
1996	0.00000
1995	0.00000

1. Distribution is based on a survey conducted by Starcrest in 2007 in which engine model years were recorded. Based on accrual rates the 2035 heavy-heavy duty fleet age distribution was projected.

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
1995	0	1.85	49.53	110.27	6.30E-02	1.85	1.70	12.41	14.13	0	0	0	0	0	0	0	0
1995	1	6.53	43.05	70.19	3.70E-02	6.59	6.03	29.47	33.55	0	0	0	0	0	0	0	0
1995	2	6.53	43.05	70.19	3.70E-02	6.59	6.03	29.47	33.55	0	0	0	0	0	0	0	0
1995	3	6.53	43.05	70.19	3.70E-02	6.59	6.03	29.47	33.55	0	0	0	0	0	0	0	0
1995	4	6.53	43.05	70.19	3.70E-02	6.59	6.03	29.47	33.55	0	0	0	0	0	0	0	0
1995	5	6.53	43.05	70.19	3.70E-02	6.59	6.03	29.47	33.55	0	0	0	0	0	0	0	0
1995	10	4.19	32.28	45.79	3.00E-02	4.25	3.87	16.18	18.42	0	0	0	0	0	0	0	0
1995	15	2.50	23.60	31.68	2.50E-02	2.56	2.32	7.54	8.58	0	0	0	0	0	0	0	0
1995	20	1.55	17.44	27.70	2.10E-02	1.62	1.45	3.88	4.42	0	0	0	0	0	0	0	0
1995	25	1.21	14.36	27.45	2.00E-02	1.27	1.13	3.00	3.42	0	0	0	0	0	0	0	0
1995	30	0.95	11.75	27.32	1.80E-02	1.01	0.89	2.32	2.64	0	0	0	0	0	0	0	0
1995	35	0.76	9.61	27.33	1.70E-02	0.83	0.72	1.84	2.09	0	0	0	0	0	0	0	0
1995	40	0.67	7.95	27.46	1.70E-02	0.73	0.63	1.56	1.77	0	0	0	0	0	0	0	0
1995	45	0.65	6.76	27.73	1.60E-02	0.71	0.62	1.47	1.68	0	0	0	0	0	0	0	0
1995	50	0.71	6.04	28.12	1.60E-02	0.78	0.68	1.59	1.81	0	0	0	0	0	0	0	0
1995	55	0.86	5.80	28.64	1.60E-02	0.93	0.81	1.91	2.17	0	0	0	0	0	0	0	0
1995	60	1.09	6.03	29.30	1.60E-02	1.15	1.02	2.42	2.76	0	0	0	0	0	0	0	0
1995	65	1.40	6.73	30.08	1.60E-02	1.47	1.31	3.14	3.57	0	0	0	0	0	0	0	0
1995	70	1.79	7.90	30.99	1.70E-02	1.86	1.67	4.05	4.61	0	0	0	0	0	0	0	0
1995	75	2.27	9.55	32.03	1.80E-02	2.33	2.11	5.17	5.88	0	0	0	0	0	0	0	0
1995	80	2.83	11.67	33.19	1.90E-02	2.89	2.62	6.48	7.38	0	0	0	0	0	0	0	0
1996	0	1.85	49.53	110.27	6.30E-02	1.85	1.70	12.41	14.13	0	0	0	0	0	0	0	0
1996	1	6.52	42.94	70.14	3.70E-02	6.58	6.02	29.40	33.47	0	0	0	0	0	0	0	0
1996	2	6.52	42.94	70.14	3.70E-02	6.58	6.02	29.40	33.47	0	0	0	0	0	0	0	0
1996	3	6.52	42.94	70.14	3.70E-02	6.58	6.02	29.40	33.47	0	0	0	0	0	0	0	0
1996	4	6.52	42.94	70.14	3.70E-02	6.58	6.02	29.40	33.47	0	0	0	0	0	0	0	0
1996	5	6.52	42.94	70.14	3.70E-02	6.58	6.02	29.40	33.47	0	0	0	0	0	0	0	0
1996	10	4.18	32.20	45.76	3.00E-02	4.24	3.86	16.14	18.37	0	0	0	0	0	0	0	0
1996	15	2.49	23.54	31.66	2.50E-02	2.56	2.31	7.52	8.56	0	0	0	0	0	0	0	0
1996	20	1.55	17.40	27.68	2.10E-02	1.61	1.45	3.87	4.41	0	0	0	0	0	0	0	0
1996	25	1.21	14.32	27.42	2.00E-02	1.27	1.13	2.99	3.41	0	0	0	0	0	0	0	0
1996	30	0.94	11.72	27.30	1.80E-02	1.01	0.89	2.31	2.63	0	0	0	0	0	0	0	0
1996	35	0.76	9.59	27.31	1.70E-02	0.83	0.72	1.83	2.09	0	0	0	0	0	0	0	0
1996	40	0.66	7.93	27.44	1.70E-02	0.73	0.63	1.55	1.77	0	0	0	0	0	0	0	0
1996	45	0.65	6.74	27.71	1.60E-02	0.71	0.62	1.47	1.67	0	0	0	0	0	0	0	0
1996	50	0.71	6.03	28.10	1.60E-02	0.78	0.68	1.59	1.81	0	0	0	0	0	0	0	0
1996	55	0.86	5.78	28.62	1.60E-02	0.92	0.81	1.90	2.17	0	0	0	0	0	0	0	0
1996	60	1.09	6.01	29.27	1.60E-02	1.15	1.02	2.42	2.75	0	0	0	0	0	0	0	0
1996	65	1.40	6.71	30.05	1.60E-02	1.46	1.31	3.13	3.56	0	0	0	0	0	0	0	0
1996	70	1.79	7.88	30.96	1.70E-02	1.85	1.67	4.04	4.60	0	0	0	0	0	0	0	0
1996	75	2.26	9.52	32.00	1.80E-02	2.33	2.10	5.16	5.87	0	0	0	0	0	0	0	0
1996	80	2.82	11.64	33.17	1.90E-02	2.88	2.62	6.47	7.36	0	0	0	0	0	0	0	0
1997	0	1.85	49.53	110.27	6.30E-02	1.85	1.70	12.41	14.13	0	0	0	0	0	0	0	0
1997	1	6.50	42.84	70.09	3.70E-02	6.57	6.00	29.32	33.38	0	0	0	0	0	0	0	0
1997	2	6.50	42.84	70.09	3.70E-02	6.57	6.00	29.32	33.38	0	0	0	0	0	0	0	0

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
1997	3	6.50	42.84	70.09	3.70E-02	6.57	6.00	29.32	33.38	0	0	0	0	0	0	0	0
1997	4	6.50	42.84	70.09	3.70E-02	6.57	6.00	29.32	33.38	0	0	0	0	0	0	0	0
1997	5	6.50	42.84	70.09	3.70E-02	6.57	6.00	29.32	33.38	0	0	0	0	0	0	0	0
1997	10	4.17	32.12	45.72	3.00E-02	4.23	3.86	16.10	18.33	0	0	0	0	0	0	0	0
1997	15	2.49	23.48	31.64	2.50E-02	2.55	2.31	7.50	8.54	0	0	0	0	0	0	0	0
1997	20	1.55	17.36	27.66	2.10E-02	1.61	1.44	3.86	4.40	0	0	0	0	0	0	0	0
1997	25	1.20	14.29	27.40	2.00E-02	1.27	1.13	2.99	3.40	0	0	0	0	0	0	0	0
1997	30	0.94	11.69	27.28	1.80E-02	1.01	0.89	2.31	2.63	0	0	0	0	0	0	0	0
1997	35	0.76	9.57	27.29	1.70E-02	0.83	0.72	1.83	2.08	0	0	0	0	0	0	0	0
1997	40	0.66	7.91	27.42	1.70E-02	0.73	0.63	1.55	1.76	0	0	0	0	0	0	0	0
1997	45	0.65	6.73	27.69	1.60E-02	0.71	0.62	1.47	1.67	0	0	0	0	0	0	0	0
1997	50	0.71	6.01	28.08	1.60E-02	0.78	0.68	1.58	1.80	0	0	0	0	0	0	0	0
1997	55	0.86	5.77	28.60	1.60E-02	0.92	0.81	1.90	2.16	0	0	0	0	0	0	0	0
1997	60	1.09	6.00	29.25	1.60E-02	1.15	1.02	2.41	2.74	0	0	0	0	0	0	0	0
1997	65	1.40	6.69	30.03	1.60E-02	1.46	1.30	3.12	3.56	0	0	0	0	0	0	0	0
1997	70	1.79	7.86	30.94	1.70E-02	1.85	1.66	4.03	4.59	0	0	0	0	0	0	0	0
1997	75	2.26	9.50	31.98	1.80E-02	2.32	2.10	5.14	5.85	0	0	0	0	0	0	0	0
1997	80	2.81	11.61	33.14	1.90E-02	2.88	2.61	6.45	7.34	0	0	0	0	0	0	0	0
1998	0	1.28	44.51	119.08	6.30E-02	1.28	1.18	9.31	10.60	0	0	0	0	0	0	0	0
1998	1	6.18	42.53	71.93	3.70E-02	6.24	5.70	29.10	33.13	0	0	0	0	0	0	0	0
1998	2	6.18	42.53	71.93	3.70E-02	6.24	5.70	29.10	33.13	0	0	0	0	0	0	0	0
1998	3	6.18	42.53	71.93	3.70E-02	6.24	5.70	29.10	33.13	0	0	0	0	0	0	0	0
1998	4	6.18	42.53	71.93	3.70E-02	6.24	5.70	29.10	33.13	0	0	0	0	0	0	0	0
1998	5	6.18	42.53	71.93	3.70E-02	6.24	5.70	29.10	33.13	0	0	0	0	0	0	0	0
1998	10	3.96	31.89	46.92	3.00E-02	4.03	3.67	15.98	18.19	0	0	0	0	0	0	0	0
1998	15	2.36	23.32	32.47	2.50E-02	2.43	2.19	7.45	8.48	0	0	0	0	0	0	0	0
1998	20	1.47	17.23	28.38	2.10E-02	1.53	1.37	3.83	4.36	0	0	0	0	0	0	0	0
1998	25	1.14	14.19	28.12	2.00E-02	1.21	1.07	2.96	3.37	0	0	0	0	0	0	0	0
1998	30	0.89	11.61	28.00	1.80E-02	0.96	0.84	2.29	2.61	0	0	0	0	0	0	0	0
1998	35	0.72	9.50	28.01	1.70E-02	0.79	0.69	1.82	2.07	0	0	0	0	0	0	0	0
1998	40	0.63	7.86	28.14	1.70E-02	0.69	0.60	1.54	1.75	0	0	0	0	0	0	0	0
1998	45	0.61	6.68	28.41	1.60E-02	0.68	0.59	1.46	1.66	0	0	0	0	0	0	0	0
1998	50	0.68	5.97	28.82	1.60E-02	0.74	0.64	1.57	1.79	0	0	0	0	0	0	0	0
1998	55	0.81	5.73	29.35	1.60E-02	0.88	0.77	1.88	2.14	0	0	0	0	0	0	0	0
1998	60	1.03	5.95	30.02	1.60E-02	1.10	0.97	2.39	2.72	0	0	0	0	0	0	0	0
1998	65	1.33	6.65	30.82	1.60E-02	1.39	1.24	3.10	3.53	0	0	0	0	0	0	0	0
1998	70	1.70	7.81	31.75	1.70E-02	1.76	1.58	4.00	4.56	0	0	0	0	0	0	0	0
1998	75	2.15	9.43	32.82	1.80E-02	2.21	2.00	5.10	5.81	0	0	0	0	0	0	0	0
1998	80	2.67	11.53	34.02	1.90E-02	2.74	2.48	6.40	7.29	0	0	0	0	0	0	0	0
1999	0	1.28	44.51	119.08	6.30E-02	1.28	1.18	9.31	10.60	0	0	0	0	0	0	0	0
1999	1	6.17	42.43	71.87	3.70E-02	6.23	5.69	29.03	33.05	0	0	0	0	0	0	0	0
1999	2	6.17	42.43	71.87	3.70E-02	6.23	5.69	29.03	33.05	0	0	0	0	0	0	0	0
1999	3	6.17	42.43	71.87	3.70E-02	6.23	5.69	29.03	33.05	0	0	0	0	0	0	0	0
1999	4	6.17	42.43	71.87	3.70E-02	6.23	5.69	29.03	33.05	0	0	0	0	0	0	0	0
1999	5	6.17	42.43	71.87	3.70E-02	6.23	5.69	29.03	33.05	0	0	0	0	0	0	0	0

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
1999	10	3.95	31.82	46.88	3.00E-02	4.02	3.66	15.94	18.15	0	0	0	0	0	0	0	0
1999	15	2.36	23.26	32.44	2.50E-02	2.42	2.19	7.43	8.46	0	0	0	0	0	0	0	0
1999	20	1.47	17.19	28.36	2.10E-02	1.53	1.37	3.82	4.35	0	0	0	0	0	0	0	0
1999	25	1.14	14.15	28.10	2.00E-02	1.21	1.07	2.96	3.36	0	0	0	0	0	0	0	0
1999	30	0.89	11.58	27.98	1.80E-02	0.96	0.84	2.28	2.60	0	0	0	0	0	0	0	0
1999	35	0.72	9.48	27.98	1.70E-02	0.79	0.69	1.81	2.06	0	0	0	0	0	0	0	0
1999	40	0.63	7.84	28.12	1.70E-02	0.69	0.60	1.53	1.75	0	0	0	0	0	0	0	0
1999	45	0.61	6.66	28.39	1.60E-02	0.68	0.59	1.45	1.65	0	0	0	0	0	0	0	0
1999	50	0.67	5.96	28.79	1.60E-02	0.74	0.64	1.57	1.78	0	0	0	0	0	0	0	0
1999	55	0.81	5.71	29.33	1.60E-02	0.88	0.77	1.88	2.14	0	0	0	0	0	0	0	0
1999	60	1.03	5.94	30.00	1.60E-02	1.09	0.97	2.39	2.72	0	0	0	0	0	0	0	0
1999	65	1.32	6.63	30.80	1.60E-02	1.39	1.24	3.09	3.52	0	0	0	0	0	0	0	0
1999	70	1.69	7.79	31.73	1.70E-02	1.76	1.58	3.99	4.55	0	0	0	0	0	0	0	0
1999	75	2.14	9.41	32.79	1.80E-02	2.21	1.99	5.09	5.80	0	0	0	0	0	0	0	0
1999	80	2.67	11.50	33.99	1.90E-02	2.73	2.48	6.39	7.27	0	0	0	0	0	0	0	0
2000	0	1.28	44.51	119.08	6.30E-02	1.28	1.18	9.31	10.60	0	0	0	0	0	0	0	0
2000	1	6.15	42.32	71.81	3.70E-02	6.22	5.68	28.96	32.97	0	0	0	0	0	0	0	0
2000	2	6.15	42.32	71.81	3.70E-02	6.22	5.68	28.96	32.97	0	0	0	0	0	0	0	0
2000	3	6.15	42.32	71.81	3.70E-02	6.22	5.68	28.96	32.97	0	0	0	0	0	0	0	0
2000	4	6.15	42.32	71.81	3.70E-02	6.22	5.68	28.96	32.97	0	0	0	0	0	0	0	0
2000	5	6.15	42.32	71.81	3.70E-02	6.22	5.68	28.96	32.97	0	0	0	0	0	0	0	0
2000	10	3.95	31.74	46.84	3.00E-02	4.01	3.65	15.90	18.10	0	0	0	0	0	0	0	0
2000	15	2.35	23.20	32.41	2.50E-02	2.42	2.19	7.41	8.43	0	0	0	0	0	0	0	0
2000	20	1.46	17.15	28.33	2.10E-02	1.53	1.37	3.81	4.34	0	0	0	0	0	0	0	0
2000	25	1.14	14.12	28.08	2.10E-02	1.20	1.07	2.95	3.36	0	0	0	0	0	0	0	0
2000	30	0.89	11.55	27.95	1.80E-02	0.96	0.84	2.28	2.59	0	0	0	0	0	0	0	0
2000	35	0.72	9.45	27.96	1.70E-02	0.78	0.68	1.81	2.06	0	0	0	0	0	0	0	0
2000	40	0.63	7.82	28.10	1.70E-02	0.69	0.60	1.53	1.74	0	0	0	0	0	0	0	0
2000	45	0.61	6.65	28.37	1.60E-02	0.68	0.58	1.45	1.65	0	0	0	0	0	0	0	0
2000	50	0.67	5.94	28.77	1.60E-02	0.74	0.64	1.56	1.78	0	0	0	0	0	0	0	0
2000	55	0.81	5.70	29.30	1.60E-02	0.88	0.77	1.87	2.13	0	0	0	0	0	0	0	0
2000	60	1.03	5.92	29.97	1.60E-02	1.09	0.97	2.38	2.71	0	0	0	0	0	0	0	0
2000	65	1.32	6.61	30.77	1.60E-02	1.38	1.24	3.08	3.51	0	0	0	0	0	0	0	0
2000	70	1.69	7.77	31.70	1.70E-02	1.75	1.58	3.98	4.53	0	0	0	0	0	0	0	0
2000	75	2.14	9.39	32.76	1.80E-02	2.20	1.99	5.08	5.78	0	0	0	0	0	0	0	0
2000	80	2.66	11.47	33.96	1.90E-02	2.73	2.47	6.37	7.25	0	0	0	0	0	0	0	0
2001	0	1.28	44.51	119.08	6.30E-02	1.28	1.18	9.31	10.60	0	0	0	0	0	0	0	0
2001	1	6.14	42.22	71.75	3.70E-02	6.20	5.67	28.89	32.89	0	0	0	0	0	0	0	0
2001	2	6.14	42.22	71.75	3.70E-02	6.20	5.67	28.89	32.89	0	0	0	0	0	0	0	0
2001	3	6.14	42.22	71.75	3.70E-02	6.20	5.67	28.89	32.89	0	0	0	0	0	0	0	0
2001	4	6.14	42.22	71.75	3.70E-02	6.20	5.67	28.89	32.89	0	0	0	0	0	0	0	0
2001	5	6.14	42.22	71.75	3.70E-02	6.20	5.67	28.89	32.89	0	0	0	0	0	0	0	0
2001	10	3.94	31.66	46.81	3.00E-02	4.00	3.64	15.86	18.06	0	0	0	0	0	0	0	0
2001	15	2.35	23.15	32.39	2.50E-02	2.41	2.18	7.39	8.41	0	0	0	0	0	0	0	0
2001	20	1.46	17.11	28.31	2.10E-02	1.52	1.36	3.80	4.33	0	0	0	0	0	0	0	0

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2001	25	1.14	14.08	28.05	2.00E-02	1.20	1.07	2.94	3.35	0	0	0	0	0	0	0	0
2001	30	0.89	11.52	27.93	1.80E-02	0.95	0.84	2.27	2.59	0	0	0	0	0	0	0	0
2001	35	0.72	9.43	27.93	1.70E-02	0.78	0.68	1.80	2.05	0	0	0	0	0	0	0	0
2001	40	0.63	7.80	28.07	1.70E-02	0.69	0.60	1.53	1.74	0	0	0	0	0	0	0	0
2001	45	0.61	6.63	28.34	1.60E-02	0.67	0.58	1.44	1.64	0	0	0	0	0	0	0	0
2001	50	0.67	5.93	28.75	1.60E-02	0.74	0.64	1.56	1.78	0	0	0	0	0	0	0	0
2001	55	0.81	5.69	29.28	1.60E-02	0.87	0.77	1.87	2.13	0	0	0	0	0	0	0	0
2001	60	1.03	5.91	29.95	1.60E-02	1.09	0.96	2.38	2.70	0	0	0	0	0	0	0	0
2001	65	1.32	6.60	30.74	1.60E-02	1.38	1.23	3.08	3.50	0	0	0	0	0	0	0	0
2001	70	1.69	7.75	31.67	1.70E-02	1.75	1.57	3.97	4.52	0	0	0	0	0	0	0	0
2001	75	2.13	9.36	32.74	1.80E-02	2.20	1.98	5.07	5.77	0	0	0	0	0	0	0	0
2001	80	2.66	11.44	33.93	1.90E-02	2.72	2.47	6.35	7.23	0	0	0	0	0	0	0	0
2002	0	1.28	44.51	119.08	6.30E-02	1.28	1.18	9.31	10.60	0	0	0	0	0	0	0	0
2002	1	6.13	42.12	71.69	3.70E-02	6.19	5.66	28.82	32.81	0	0	0	0	0	0	0	0
2002	2	6.13	42.12	71.69	3.70E-02	6.19	5.66	28.82	32.81	0	0	0	0	0	0	0	0
2002	3	6.13	42.12	71.69	3.70E-02	6.19	5.66	28.82	32.81	0	0	0	0	0	0	0	0
2002	4	6.13	42.12	71.69	3.70E-02	6.19	5.66	28.82	32.81	0	0	0	0	0	0	0	0
2002	5	6.13	42.12	71.69	3.70E-02	6.19	5.66	28.82	32.81	0	0	0	0	0	0	0	0
2002	10	3.93	31.58	46.77	3.00E-02	3.99	3.64	15.82	18.01	0	0	0	0	0	0	0	0
2002	15	2.34	23.09	32.36	2.50E-02	2.41	2.18	7.37	8.39	0	0	0	0	0	0	0	0
2002	20	1.46	17.06	28.29	2.10E-02	1.52	1.36	3.79	4.32	0	0	0	0	0	0	0	0
2002	25	1.13	14.05	28.03	2.00E-02	1.20	1.06	2.93	3.34	0	0	0	0	0	0	0	0
2002	30	0.89	11.50	27.90	1.80E-02	0.95	0.84	2.27	2.58	0	0	0	0	0	0	0	0
2002	35	0.72	9.41	27.91	1.70E-02	0.78	0.68	1.80	2.05	0	0	0	0	0	0	0	0
2002	40	0.63	7.78	28.05	1.70E-02	0.69	0.60	1.52	1.73	0	0	0	0	0	0	0	0
2002	45	0.61	6.61	28.32	1.60E-02	0.67	0.58	1.44	1.64	0	0	0	0	0	0	0	0
2002	50	0.67	5.91	28.72	1.60E-02	0.73	0.64	1.56	1.77	0	0	0	0	0	0	0	0
2002	55	0.81	5.67	29.25	1.60E-02	0.87	0.76	1.86	2.12	0	0	0	0	0	0	0	0
2002	60	1.02	5.90	29.92	1.60E-02	1.09	0.96	2.37	2.70	0	0	0	0	0	0	0	0
2002	65	1.32	6.58	30.72	1.60E-02	1.38	1.23	3.07	3.49	0	0	0	0	0	0	0	0
2002	70	1.68	7.73	31.65	1.70E-02	1.75	1.57	3.96	4.51	0	0	0	0	0	0	0	0
2002	75	2.13	9.34	32.71	1.80E-02	2.19	1.98	5.05	5.75	0	0	0	0	0	0	0	0
2002	80	2.65	11.41	33.90	1.90E-02	2.72	2.46	6.34	7.22	0	0	0	0	0	0	0	0
2003	0	0.99	41.43	123.52	6.30E-02	0.99	0.91	7.65	8.71	0	0	0	0	0	0	0	0
2003	1	1.14	23.38	44.71	3.70E-02	1.21	1.07	11.89	13.54	0	0	0	0	0	0	0	0
2003	2	1.14	23.38	44.71	3.70E-02	1.21	1.07	11.89	13.54	0	0	0	0	0	0	0	0
2003	3	1.14	23.38	44.71	3.70E-02	1.21	1.07	11.89	13.54	0	0	0	0	0	0	0	0
2003	4	1.14	23.38	44.71	3.70E-02	1.21	1.07	11.89	13.54	0	0	0	0	0	0	0	0
2003	5	1.14	23.38	44.71	3.70E-02	1.21	1.07	11.89	13.54	0	0	0	0	0	0	0	0
2003	10	1.05	14.01	33.53	3.00E-02	1.11	0.98	6.48	7.38	0	0	0	0	0	0	0	0
2003	15	0.95	8.03	25.54	2.50E-02	1.02	0.90	3.10	3.53	0	0	0	0	0	0	0	0
2003	20	0.87	5.58	20.84	2.10E-02	0.94	0.82	1.83	2.08	0	0	0	0	0	0	0	0
2003	25	0.85	5.30	18.73	2.00E-02	0.91	0.80	1.59	1.81	0	0	0	0	0	0	0	0
2003	30	0.86	5.12	16.96	1.80E-02	0.92	0.81	1.39	1.58	0	0	0	0	0	0	0	0
2003	35	0.91	5.04	15.52	1.70E-02	0.97	0.86	1.21	1.38	0	0	0	0	0	0	0	0

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2003	40	0.99	5.06	14.42	1.70E-02	1.05	0.93	1.07	1.21	0	0	0	0	0	0	0	0
2003	45	1.10	5.17	13.66	1.60E-02	1.17	1.04	0.95	1.08	0	0	0	0	0	0	0	0
2003	50	1.26	5.38	13.23	1.60E-02	1.32	1.18	0.85	0.97	0	0	0	0	0	0	0	0
2003	55	1.44	5.69	13.14	1.60E-02	1.51	1.35	0.79	0.90	0	0	0	0	0	0	0	0
2003	60	1.66	6.09	13.39	1.60E-02	1.73	1.55	0.76	0.86	0	0	0	0	0	0	0	0
2003	65	1.92	6.59	13.97	1.60E-02	1.98	1.79	0.75	0.85	0	0	0	0	0	0	0	0
2003	70	2.21	7.19	14.89	1.70E-02	2.27	2.05	0.77	0.88	0	0	0	0	0	0	0	0
2003	75	2.53	7.88	16.15	1.80E-02	2.60	2.35	0.82	0.94	0	0	0	0	0	0	0	0
2003	80	2.89	8.67	17.75	1.90E-02	2.96	2.68	0.90	1.03	0	0	0	0	0	0	0	0
2004	0	0.99	41.43	123.52	6.30E-02	0.99	0.91	7.65	8.71	0	0	0	0	0	0	0	0
2004	1	1.14	23.30	44.64	3.70E-02	1.20	1.07	11.85	13.49	0	0	0	0	0	0	0	0
2004	2	1.14	23.30	44.64	3.70E-02	1.20	1.07	11.85	13.49	0	0	0	0	0	0	0	0
2004	3	1.14	23.30	44.64	3.70E-02	1.20	1.07	11.85	13.49	0	0	0	0	0	0	0	0
2004	4	1.14	23.30	44.64	3.70E-02	1.20	1.07	11.85	13.49	0	0	0	0	0	0	0	0
2004	5	1.14	23.30	44.64	3.70E-02	1.20	1.07	11.85	13.49	0	0	0	0	0	0	0	0
2004	10	1.04	13.97	33.47	3.00E-02	1.11	0.98	6.46	7.35	0	0	0	0	0	0	0	0
2004	15	0.95	8.01	25.49	2.50E-02	1.01	0.89	3.09	3.52	0	0	0	0	0	0	0	0
2004	20	0.87	5.56	20.81	2.10E-02	0.93	0.82	1.82	2.07	0	0	0	0	0	0	0	0
2004	25	0.85	5.28	18.70	2.00E-02	0.91	0.80	1.59	1.81	0	0	0	0	0	0	0	0
2004	30	0.86	5.11	16.93	1.80E-02	0.92	0.81	1.38	1.58	0	0	0	0	0	0	0	0
2004	35	0.90	5.03	15.50	1.70E-02	0.97	0.85	1.21	1.38	0	0	0	0	0	0	0	0
2004	40	0.99	5.04	14.40	1.70E-02	1.05	0.93	1.06	1.21	0	0	0	0	0	0	0	0
2004	45	1.10	5.16	13.64	1.60E-02	1.17	1.03	0.94	1.07	0	0	0	0	0	0	0	0
2004	50	1.25	5.36	13.21	1.60E-02	1.32	1.17	0.85	0.97	0	0	0	0	0	0	0	0
2004	55	1.44	5.67	13.12	1.60E-02	1.50	1.34	0.79	0.90	0	0	0	0	0	0	0	0
2004	60	1.66	6.07	13.37	1.60E-02	1.72	1.55	0.75	0.86	0	0	0	0	0	0	0	0
2004	65	1.91	6.57	13.95	1.60E-02	1.98	1.78	0.75	0.85	0	0	0	0	0	0	0	0
2004	70	2.20	7.16	14.87	1.70E-02	2.27	2.05	0.77	0.88	0	0	0	0	0	0	0	0
2004	75	2.53	7.85	16.13	1.80E-02	2.59	2.34	0.82	0.93	0	0	0	0	0	0	0	0
2004	80	2.88	8.64	17.72	1.90E-02	2.95	2.67	0.90	1.02	0	0	0	0	0	0	0	0
2005	0	0.99	41.43	123.52	6.30E-02	0.99	0.91	7.65	8.71	0	0	0	0	0	0	0	0
2005	1	1.14	23.20	44.55	3.70E-02	1.20	1.07	11.80	13.43	0	0	0	0	0	0	0	0
2005	2	1.14	23.20	44.55	3.70E-02	1.20	1.07	11.80	13.43	0	0	0	0	0	0	0	0
2005	3	1.14	23.20	44.55	3.70E-02	1.20	1.07	11.80	13.43	0	0	0	0	0	0	0	0
2005	4	1.14	23.20	44.55	3.70E-02	1.20	1.07	11.80	13.43	0	0	0	0	0	0	0	0
2005	5	1.14	23.20	44.55	3.70E-02	1.20	1.07	11.80	13.43	0	0	0	0	0	0	0	0
2005	10	1.04	13.91	33.41	3.00E-02	1.10	0.98	6.43	7.32	0	0	0	0	0	0	0	0
2005	15	0.95	7.97	25.44	2.50E-02	1.01	0.89	3.08	3.51	0	0	0	0	0	0	0	0
2005	20	0.87	5.53	20.76	2.10E-02	0.93	0.82	1.81	2.06	0	0	0	0	0	0	0	0
2005	25	0.84	5.26	18.66	2.00E-02	0.91	0.80	1.58	1.80	0	0	0	0	0	0	0	0
2005	30	0.86	5.09	16.90	1.80E-02	0.92	0.81	1.38	1.57	0	0	0	0	0	0	0	0
2005	35	0.90	5.01	15.46	1.70E-02	0.97	0.85	1.20	1.37	0	0	0	0	0	0	0	0
2005	40	0.98	5.02	14.37	1.70E-02	1.05	0.92	1.06	1.20	0	0	0	0	0	0	0	0
2005	45	1.10	5.13	13.61	1.60E-02	1.16	1.03	0.94	1.07	0	0	0	0	0	0	0	0
2005	50	1.25	5.34	13.18	1.60E-02	1.31	1.17	0.85	0.97	0	0	0	0	0	0	0	0

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2005	55	1.43	5.65	13.10	1.60E-02	1.50	1.34	0.79	0.89	0	0	0	0	0	0	0	0
2005	60	1.65	6.05	13.34	1.60E-02	1.72	1.54	0.75	0.86	0	0	0	0	0	0	0	0
2005	65	1.91	6.54	13.92	1.60E-02	1.97	1.77	0.74	0.85	0	0	0	0	0	0	0	0
2005	70	2.19	7.13	14.84	1.70E-02	2.26	2.04	0.77	0.87	0	0	0	0	0	0	0	0
2005	75	2.52	7.82	16.09	1.80E-02	2.58	2.34	0.82	0.93	0	0	0	0	0	0	0	0
2005	80	2.87	8.60	17.68	1.90E-02	2.94	2.67	0.89	1.02	0	0	0	0	0	0	0	0
2006	0	0.99	41.43	123.52	6.30E-02	0.99	0.91	7.65	8.71	0	0	0	0	0	0	0	0
2006	1	1.13	23.08	44.45	3.70E-02	1.20	1.06	11.74	13.36	0	0	0	0	0	0	0	0
2006	2	1.13	23.08	44.45	3.70E-02	1.20	1.06	11.74	13.36	0	0	0	0	0	0	0	0
2006	3	1.13	23.08	44.45	3.70E-02	1.20	1.06	11.74	13.36	0	0	0	0	0	0	0	0
2006	4	1.13	23.08	44.45	3.70E-02	1.20	1.06	11.74	13.36	0	0	0	0	0	0	0	0
2006	5	1.13	23.08	44.45	3.70E-02	1.20	1.06	11.74	13.36	0	0	0	0	0	0	0	0
2006	10	1.04	13.84	33.33	3.00E-02	1.10	0.97	6.40	7.29	0	0	0	0	0	0	0	0
2006	15	0.94	7.93	25.38	2.50E-02	1.01	0.89	3.06	3.49	0	0	0	0	0	0	0	0
2006	20	0.86	5.50	20.72	2.10E-02	0.93	0.82	1.80	2.05	0	0	0	0	0	0	0	0
2006	25	0.84	5.23	18.62	2.00E-02	0.90	0.79	1.57	1.79	0	0	0	0	0	0	0	0
2006	30	0.85	5.06	16.86	1.80E-02	0.92	0.80	1.37	1.56	0	0	0	0	0	0	0	0
2006	35	0.90	4.98	15.43	1.70E-02	0.96	0.85	1.20	1.36	0	0	0	0	0	0	0	0
2006	40	0.98	5.00	14.34	1.70E-02	1.04	0.92	1.05	1.20	0	0	0	0	0	0	0	0
2006	45	1.09	5.11	13.58	1.60E-02	1.16	1.03	0.93	1.06	0	0	0	0	0	0	0	0
2006	50	1.24	5.31	13.15	1.60E-02	1.31	1.16	0.84	0.96	0	0	0	0	0	0	0	0
2006	55	1.43	5.62	13.06	1.60E-02	1.49	1.33	0.78	0.89	0	0	0	0	0	0	0	0
2006	60	1.64	6.02	13.31	1.60E-02	1.71	1.53	0.75	0.85	0	0	0	0	0	0	0	0
2006	65	1.90	6.51	13.89	1.60E-02	1.96	1.77	0.74	0.84	0	0	0	0	0	0	0	0
2006	70	2.18	7.10	14.81	1.70E-02	2.25	2.03	0.76	0.87	0	0	0	0	0	0	0	0
2006	75	2.51	7.78	16.06	1.80E-02	2.57	2.33	0.81	0.92	0	0	0	0	0	0	0	0
2006	80	2.86	8.56	17.64	1.90E-02	2.93	2.65	0.89	1.01	0	0	0	0	0	0	0	0
2007	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	0	0	0	0	0	0	0	0
2007	1	0.20	16.29	30.12	3.70E-02	0.26	0.20	8.32	9.47	0	0	0	0	0	0	0	0
2007	2	0.20	16.29	30.12	3.70E-02	0.26	0.20	8.32	9.47	0	0	0	0	0	0	0	0
2007	3	0.20	16.29	30.12	3.70E-02	0.26	0.20	8.32	9.47	0	0	0	0	0	0	0	0
2007	4	0.20	16.29	30.12	3.70E-02	0.26	0.20	8.32	9.47	0	0	0	0	0	0	0	0
2007	5	0.20	16.29	30.12	3.70E-02	0.26	0.20	8.32	9.47	0	0	0	0	0	0	0	0
2007	10	0.18	9.77	22.58	3.00E-02	0.25	0.19	4.53	5.16	0	0	0	0	0	0	0	0
2007	15	0.17	5.60	17.20	2.50E-02	0.23	0.17	2.17	2.47	0	0	0	0	0	0	0	0
2007	20	0.15	3.89	14.04	2.10E-02	0.22	0.16	1.28	1.45	0	0	0	0	0	0	0	0
2007	25	0.15	3.69	12.61	2.00E-02	0.21	0.16	1.11	1.27	0	0	0	0	0	0	0	0
2007	30	0.15	3.57	11.42	1.80E-02	0.21	0.16	0.97	1.11	0	0	0	0	0	0	0	0
2007	35	0.16	3.52	10.45	1.70E-02	0.22	0.17	0.85	0.97	0	0	0	0	0	0	0	0
2007	40	0.17	3.53	9.71	1.70E-02	0.24	0.18	0.75	0.85	0	0	0	0	0	0	0	0
2007	45	0.19	3.61	9.20	1.60E-02	0.26	0.20	0.66	0.75	0	0	0	0	0	0	0	0
2007	50	0.22	3.75	8.91	1.60E-02	0.28	0.22	0.60	0.68	0	0	0	0	0	0	0	0
2007	55	0.25	3.97	8.85	1.60E-02	0.32	0.25	0.55	0.63	0	0	0	0	0	0	0	0
2007	60	0.29	4.25	9.02	1.60E-02	0.35	0.29	0.53	0.60	0	0	0	0	0	0	0	0
2007	65	0.33	4.59	9.41	1.60E-02	0.40	0.33	0.53	0.60	0	0	0	0	0	0	0	0

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2007	70	0.38	5.01	10.03	1.70E-02	0.45	0.38	0.54	0.62	0	0	0	0	0	0	0	0
2007	75	0.44	5.49	10.88	1.80E-02	0.51	0.43	0.58	0.66	0	0	0	0	0	0	0	0
2007	80	0.50	6.04	11.95	1.90E-02	0.57	0.48	0.63	0.72	0	0	0	0	0	0	0	0
2008	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	0	0	0	0	0	0	0	0
2008	1	0.20	16.18	29.99	3.70E-02	0.26	0.20	8.26	9.40	0	0	0	0	0	0	0	0
2008	2	0.20	16.18	29.99	3.70E-02	0.26	0.20	8.26	9.40	0	0	0	0	0	0	0	0
2008	3	0.20	16.18	29.99	3.70E-02	0.26	0.20	8.26	9.40	0	0	0	0	0	0	0	0
2008	4	0.20	16.18	29.99	3.70E-02	0.26	0.20	8.26	9.40	0	0	0	0	0	0	0	0
2008	5	0.20	16.18	29.99	3.70E-02	0.26	0.20	8.26	9.40	0	0	0	0	0	0	0	0
2008	10	0.18	9.70	22.49	3.00E-02	0.25	0.19	4.50	5.13	0	0	0	0	0	0	0	0
2008	15	0.17	5.56	17.13	2.50E-02	0.23	0.17	2.16	2.45	0	0	0	0	0	0	0	0
2008	20	0.15	3.86	13.98	2.10E-02	0.22	0.16	1.27	1.44	0	0	0	0	0	0	0	0
2008	25	0.15	3.67	12.56	2.00E-02	0.21	0.16	1.11	1.26	0	0	0	0	0	0	0	0
2008	30	0.15	3.55	11.37	1.80E-02	0.21	0.16	0.97	1.10	0	0	0	0	0	0	0	0
2008	35	0.16	3.49	10.41	1.70E-02	0.22	0.17	0.84	0.96	0	0	0	0	0	0	0	0
2008	40	0.17	3.50	9.67	1.70E-02	0.24	0.18	0.74	0.84	0	0	0	0	0	0	0	0
2008	45	0.19	3.58	9.16	1.60E-02	0.26	0.20	0.66	0.75	0	0	0	0	0	0	0	0
2008	50	0.22	3.73	8.87	1.60E-02	0.28	0.22	0.59	0.68	0	0	0	0	0	0	0	0
2008	55	0.25	3.94	8.81	1.60E-02	0.31	0.25	0.55	0.63	0	0	0	0	0	0	0	0
2008	60	0.29	4.22	8.98	1.60E-02	0.35	0.29	0.53	0.60	0	0	0	0	0	0	0	0
2008	65	0.33	4.56	9.37	1.60E-02	0.40	0.33	0.52	0.59	0	0	0	0	0	0	0	0
2008	70	0.38	4.98	9.99	1.70E-02	0.45	0.37	0.54	0.61	0	0	0	0	0	0	0	0
2008	75	0.44	5.46	10.83	1.80E-02	0.50	0.42	0.57	0.65	0	0	0	0	0	0	0	0
2008	80	0.50	6.00	11.90	1.90E-02	0.56	0.48	0.63	0.71	0	0	0	0	0	0	0	0
2009	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	0	0	0	0	0	0	0	0
2009	1	0.20	16.06	29.84	3.70E-02	0.26	0.20	8.20	9.33	0	0	0	0	0	0	0	0
2009	2	0.20	16.06	29.84	3.70E-02	0.26	0.20	8.20	9.33	0	0	0	0	0	0	0	0
2009	3	0.20	16.06	29.84	3.70E-02	0.26	0.20	8.20	9.33	0	0	0	0	0	0	0	0
2009	4	0.20	16.06	29.84	3.70E-02	0.26	0.20	8.20	9.33	0	0	0	0	0	0	0	0
2009	5	0.20	16.06	29.84	3.70E-02	0.26	0.20	8.20	9.33	0	0	0	0	0	0	0	0
2009	10	0.18	9.62	22.38	3.00E-02	0.24	0.19	4.47	5.09	0	0	0	0	0	0	0	0
2009	15	0.16	5.52	17.04	2.50E-02	0.23	0.17	2.14	2.44	0	0	0	0	0	0	0	0
2009	20	0.15	3.83	13.91	2.10E-02	0.21	0.16	1.26	1.43	0	0	0	0	0	0	0	0
2009	25	0.15	3.64	12.50	2.00E-02	0.21	0.16	1.10	1.25	0	0	0	0	0	0	0	0
2009	30	0.15	3.52	11.32	1.80E-02	0.21	0.16	0.96	1.09	0	0	0	0	0	0	0	0
2009	35	0.16	3.46	10.36	1.70E-02	0.22	0.16	0.84	0.95	0	0	0	0	0	0	0	0
2009	40	0.17	3.48	9.62	1.70E-02	0.23	0.18	0.73	0.84	0	0	0	0	0	0	0	0
2009	45	0.19	3.55	9.12	1.60E-02	0.25	0.20	0.65	0.74	0	0	0	0	0	0	0	0
2009	50	0.22	3.70	8.83	1.60E-02	0.28	0.22	0.59	0.67	0	0	0	0	0	0	0	0
2009	55	0.25	3.91	8.77	1.60E-02	0.31	0.25	0.55	0.62	0	0	0	0	0	0	0	0
2009	60	0.29	4.18	8.94	1.60E-02	0.35	0.28	0.52	0.59	0	0	0	0	0	0	0	0
2009	65	0.33	4.53	9.33	1.60E-02	0.39	0.32	0.52	0.59	0	0	0	0	0	0	0	0
2009	70	0.38	4.94	9.94	1.70E-02	0.44	0.37	0.53	0.61	0	0	0	0	0	0	0	0
2009	75	0.44	5.41	10.78	1.80E-02	0.50	0.42	0.57	0.65	0	0	0	0	0	0	0	0
2009	80	0.50	5.95	11.84	1.90E-02	0.56	0.48	0.62	0.71	0	0	0	0	0	0	0	0

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2010	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	2.10E-03	7.91E-01	2.36E+00	1.20E-03	2.10E-03	1.93E-03	1.46E-01	1.66E-01
2010	1	0.19	9.40	15.38	3.70E-02	0.26	0.20	4.73	5.38	3.68E-03	1.79E-01	2.94E-01	7.06E-04	4.90E-03	3.78E-03	9.02E-02	1.03E-01
2010	2	0.19	9.40	15.38	3.70E-02	0.26	0.20	4.73	5.38	3.68E-03	1.79E-01	2.94E-01	7.06E-04	4.90E-03	3.78E-03	9.02E-02	1.03E-01
2010	3	0.19	9.40	15.38	3.70E-02	0.26	0.20	4.73	5.38	3.68E-03	1.79E-01	2.94E-01	7.06E-04	4.90E-03	3.78E-03	9.02E-02	1.03E-01
2010	4	0.19	9.40	15.38	3.70E-02	0.26	0.20	4.73	5.38	3.68E-03	1.79E-01	2.94E-01	7.06E-04	4.90E-03	3.78E-03	9.02E-02	1.03E-01
2010	5	0.19	9.40	15.38	3.70E-02	0.26	0.20	4.73	5.38	3.68E-03	1.79E-01	2.94E-01	7.06E-04	4.90E-03	3.78E-03	9.02E-02	1.03E-01
2010	10	0.18	5.64	11.53	3.00E-02	0.24	0.18	2.58	2.93	3.36E-03	1.08E-01	2.20E-01	5.73E-04	4.58E-03	3.49E-03	4.92E-02	5.60E-02
2010	15	0.16	3.23	8.78	2.50E-02	0.22	0.17	1.23	1.40	3.05E-03	6.17E-02	1.68E-01	4.77E-04	4.28E-03	3.23E-03	2.35E-02	2.68E-02
2010	20	0.15	2.24	7.17	2.10E-02	0.21	0.16	0.73	0.83	2.81E-03	4.28E-02	1.37E-01	4.01E-04	4.03E-03	2.98E-03	1.38E-02	1.58E-02
2010	25	0.14	2.13	6.44	2.00E-02	0.21	0.15	0.63	0.72	2.73E-03	4.07E-02	1.23E-01	3.82E-04	3.95E-03	2.92E-03	1.21E-02	1.38E-02
2010	30	0.15	2.06	5.83	1.80E-02	0.21	0.15	0.55	0.63	2.77E-03	3.93E-02	1.11E-01	3.44E-04	3.99E-03	2.94E-03	1.05E-02	1.20E-02
2010	35	0.15	2.03	5.34	1.70E-02	0.22	0.16	0.48	0.55	2.92E-03	3.87E-02	1.02E-01	3.24E-04	4.14E-03	3.09E-03	9.20E-03	1.05E-02
2010	40	0.17	2.04	4.96	1.70E-02	0.23	0.17	0.42	0.48	3.19E-03	3.88E-02	9.47E-02	3.24E-04	4.41E-03	3.32E-03	8.07E-03	9.20E-03
2010	45	0.19	2.08	4.70	1.60E-02	0.25	0.19	0.38	0.43	3.55E-03	3.97E-02	8.96E-02	3.05E-04	4.77E-03	3.66E-03	7.18E-03	8.17E-03
2010	50	0.21	2.17	4.55	1.60E-02	0.28	0.22	0.34	0.39	4.05E-03	4.13E-02	8.69E-02	3.05E-04	5.27E-03	4.12E-03	6.49E-03	7.39E-03
2010	55	0.24	2.29	4.52	1.60E-02	0.31	0.24	0.32	0.36	4.64E-03	4.37E-02	8.63E-02	3.05E-04	5.86E-03	4.66E-03	6.01E-03	6.83E-03
2010	60	0.28	2.45	4.61	1.60E-02	0.34	0.28	0.30	0.34	5.34E-03	4.68E-02	8.79E-02	3.05E-04	6.57E-03	5.32E-03	5.74E-03	6.53E-03
2010	65	0.32	2.65	4.81	1.60E-02	0.39	0.32	0.30	0.34	6.16E-03	5.06E-02	9.17E-02	3.05E-04	7.39E-03	6.07E-03	5.69E-03	6.49E-03
2010	70	0.37	2.89	5.12	1.70E-02	0.44	0.36	0.31	0.35	7.10E-03	5.52E-02	9.78E-02	3.24E-04	8.32E-03	6.93E-03	5.86E-03	6.66E-03
2010	75	0.43	3.17	5.56	1.80E-02	0.49	0.41	0.33	0.37	8.15E-03	6.05E-02	1.06E-01	3.44E-04	9.37E-03	7.90E-03	6.24E-03	7.10E-03
2010	80	0.49	3.49	6.10	1.90E-02	0.55	0.47	0.36	0.41	9.29E-03	6.66E-02	1.16E-01	3.63E-04	1.05E-02	8.95E-03	6.83E-03	7.77E-03
2011	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	2.49E-03	9.37E-01	2.79E+00	1.43E-03	2.49E-03	2.28E-03	1.73E-01	1.97E-01
2011	1	0.19	9.32	15.22	3.70E-02	0.26	0.20	4.68	5.33	4.32E-03	2.11E-01	3.44E-01	8.37E-04	5.77E-03	4.46E-03	1.06E-01	1.21E-01
2011	2	0.19	9.32	15.22	3.70E-02	0.26	0.20	4.68	5.33	4.32E-03	2.11E-01	3.44E-01	8.37E-04	5.77E-03	4.46E-03	1.06E-01	1.21E-01
2011	3	0.19	9.32	15.22	3.70E-02	0.26	0.20	4.68	5.33	4.32E-03	2.11E-01	3.44E-01	8.37E-04	5.77E-03	4.46E-03	1.06E-01	1.21E-01
2011	4	0.19	9.32	15.22	3.70E-02	0.26	0.20	4.68	5.33	4.32E-03	2.11E-01	3.44E-01	8.37E-04	5.77E-03	4.46E-03	1.06E-01	1.21E-01
2011	5	0.19	9.32	15.22	3.70E-02	0.26	0.20	4.68	5.33	4.32E-03	2.11E-01	3.44E-01	8.37E-04	5.77E-03	4.46E-03	1.06E-01	1.21E-01
2011	10	0.18	5.59	11.41	3.00E-02	0.24	0.18	2.55	2.91	3.96E-03	1.26E-01	2.58E-01	6.79E-04	5.41E-03	4.12E-03	5.78E-02	6.58E-02
2011	15	0.16	3.20	8.69	2.50E-02	0.22	0.17	1.22	1.39	3.60E-03	7.24E-02	1.97E-01	5.66E-04	5.04E-03	3.78E-03	2.76E-02	3.15E-02
2011	20	0.15	2.22	7.09	2.10E-02	0.21	0.16	0.72	0.82	3.30E-03	5.03E-02	1.60E-01	4.75E-04	4.75E-03	3.51E-03	1.63E-02	1.85E-02
2011	25	0.14	2.11	6.38	2.00E-02	0.21	0.15	0.63	0.71	3.21E-03	4.78E-02	1.44E-01	4.52E-04	4.66E-03	3.42E-03	1.42E-02	1.62E-02
2011	30	0.14	2.04	5.77	1.80E-02	0.21	0.15	0.55	0.62	3.26E-03	4.62E-02	1.31E-01	4.07E-04	4.71E-03	3.46E-03	1.24E-02	1.41E-02
2011	35	0.15	2.01	5.28	1.70E-02	0.22	0.16	0.48	0.54	3.42E-03	4.55E-02	1.20E-01	3.85E-04	4.86E-03	3.62E-03	1.08E-02	1.23E-02
2011	40	0.17	2.02	4.91	1.70E-02	0.23	0.17	0.42	0.48	3.73E-03	4.56E-02	1.11E-01	3.85E-04	5.18E-03	3.91E-03	9.50E-03	1.08E-02
2011	45	0.18	2.06	4.65	1.60E-02	0.25	0.19	0.37	0.42	4.16E-03	4.66E-02	1.05E-01	3.62E-04	5.61E-03	4.32E-03	8.44E-03	9.59E-03
2011	50	0.21	2.15	4.50	1.60E-02	0.27	0.21	0.34	0.38	4.73E-03	4.85E-02	1.02E-01	3.62E-04	6.18E-03	4.84E-03	7.62E-03	8.66E-03
2011	55	0.24	2.27	4.47	1.60E-02	0.30	0.24	0.31	0.36	5.43E-03	5.13E-02	1.01E-01	3.62E-04	6.88E-03	5.47E-03	7.06E-03	8.03E-03
2011	60	0.28	2.43	4.56	1.60E-02	0.34	0.28	0.30	0.34	6.27E-03	5.49E-02	1.03E-01	3.62E-04	7.71E-03	6.24E-03	6.74E-03	7.67E-03
2011	65	0.32	2.63	4.76	1.60E-02	0.38	0.32	0.30	0.34	7.24E-03	5.94E-02	1.08E-01	3.62E-04	8.69E-03	7.13E-03	6.70E-03	7.60E-03
2011	70	0.37	2.87	5.07	1.70E-02	0.43	0.36	0.30	0.35	8.32E-03	6.48E-02	1.15E-01	3.85E-04	9.77E-03	8.14E-03	6.88E-03	7.83E-03
2011	75	0.42	3.14	5.50	1.80E-02	0.49	0.41	0.32	0.37	9.57E-03	7.11E-02	1.24E-01	4.07E-04	1.10E-02	9.27E-03	7.33E-03	8.35E-03
2011	80	0.48	3.46	6.04	1.90E-02	0.55	0.47	0.36	0.40	1.09E-02	7.82E-02	1.37E-01	4.30E-04	1.24E-02	1.05E-02	8.03E-03	9.14E-03
2012	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	3.08E-03	1.16E+00	3.46E+00	1.76E-03	3.08E-03	2.83E-03	2.14E-01	2.44E-01
2012	1	0.19	9.23	15.05	3.70E-02	0.25	0.20	4.64	5.28	5.29E-03	2.58E-01	4.22E-01	1.04E-03	7.09E-03	5.46E-03	1.30E-01	1.48E-01
2012	2	0.19	9.23	15.05	3.70E-02	0.25	0.20	4.64	5.28	5.29E-03	2.58E-01	4.22E-01	1.04E-03	7.09E-03	5.46E-03	1.30E-01	1.48E-01

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2012	3	0.19	9.23	15.05	3.70E-02	0.25	0.20	4.64	5.28	5.29E-03	2.58E-01	4.22E-01	1.04E-03	7.09E-03	5.46E-03	1.30E-01	1.48E-01
2012	4	0.19	9.23	15.05	3.70E-02	0.25	0.20	4.64	5.28	5.29E-03	2.58E-01	4.22E-01	1.04E-03	7.09E-03	5.46E-03	1.30E-01	1.48E-01
2012	5	0.19	9.23	15.05	3.70E-02	0.25	0.20	4.64	5.28	5.29E-03	2.58E-01	4.22E-01	1.04E-03	7.09E-03	5.46E-03	1.30E-01	1.48E-01
2012	10	0.17	5.53	11.28	3.00E-02	0.24	0.18	2.53	2.88	4.85E-03	1.55E-01	3.16E-01	8.40E-04	6.64E-03	5.04E-03	7.08E-02	8.06E-02
2012	15	0.16	3.17	8.59	2.50E-02	0.22	0.17	1.21	1.38	4.40E-03	8.88E-02	2.41E-01	7.00E-04	6.19E-03	4.65E-03	3.39E-02	3.86E-02
2012	20	0.14	2.20	7.01	2.10E-02	0.21	0.15	0.71	0.81	4.03E-03	6.16E-02	1.96E-01	5.88E-04	5.83E-03	4.29E-03	1.99E-02	2.27E-02
2012	25	0.14	2.09	6.30	2.00E-02	0.20	0.15	0.62	0.71	3.92E-03	5.86E-02	1.77E-01	5.60E-04	5.71E-03	4.20E-03	1.74E-02	1.98E-02
2012	30	0.14	2.02	5.71	1.80E-02	0.21	0.15	0.54	0.62	3.98E-03	5.66E-02	1.60E-01	5.04E-04	5.77E-03	4.26E-03	1.52E-02	1.73E-02
2012	35	0.15	1.99	5.22	1.70E-02	0.21	0.16	0.47	0.54	4.20E-03	5.57E-02	1.46E-01	4.76E-04	5.99E-03	4.45E-03	1.32E-02	1.51E-02
2012	40	0.16	2.00	4.85	1.70E-02	0.23	0.17	0.42	0.47	4.57E-03	5.59E-02	1.36E-01	4.76E-04	6.36E-03	4.79E-03	1.16E-02	1.32E-02
2012	45	0.18	2.04	4.60	1.60E-02	0.25	0.19	0.37	0.42	5.10E-03	5.72E-02	1.29E-01	4.48E-04	6.89E-03	5.29E-03	1.03E-02	1.18E-02
2012	50	0.21	2.12	4.45	1.60E-02	0.27	0.21	0.33	0.38	5.10E-03	5.95E-02	1.25E-01	4.48E-04	7.59E-03	5.94E-03	9.33E-03	1.06E-02
2012	55	0.24	2.25	4.42	1.60E-02	0.30	0.24	0.31	0.35	6.67E-03	6.29E-02	1.24E-01	4.48E-04	8.46E-03	6.72E-03	8.66E-03	9.83E-03
2012	60	0.27	2.40	4.51	1.60E-02	0.34	0.27	0.30	0.34	7.68E-03	6.73E-02	1.26E-01	4.48E-04	9.47E-03	7.65E-03	8.26E-03	9.41E-03
2012	65	0.32	2.60	4.70	1.60E-02	0.38	0.31	0.29	0.33	8.85E-03	7.29E-02	1.32E-01	4.48E-04	1.06E-02	8.74E-03	8.21E-03	9.33E-03
2012	70	0.36	2.84	5.01	1.70E-02	0.43	0.36	0.30	0.34	1.02E-02	7.94E-02	1.40E-01	4.76E-04	1.20E-02	9.97E-03	8.43E-03	9.61E-03
2012	75	0.42	3.11	5.44	1.80E-02	0.48	0.41	0.32	0.37	1.17E-02	8.71E-02	1.52E-01	5.04E-04	1.35E-02	1.14E-02	8.99E-03	1.02E-02
2012	80	0.48	3.42	5.97	1.90E-02	0.54	0.46	0.35	0.40	1.34E-02	9.58E-02	1.67E-01	5.32E-04	1.52E-02	1.29E-02	9.83E-03	1.12E-02
2013	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	3.52E-03	1.33E+00	3.96E+00	2.02E-03	3.52E-03	3.23E-03	2.45E-01	2.79E-01
2013	1	0.15	7.43	12.84	3.70E-02	0.22	0.16	3.74	4.26	4.93E-03	2.38E-01	4.11E-01	1.18E-03	6.98E-03	5.22E-03	1.20E-01	1.36E-01
2013	2	0.15	7.43	12.84	3.70E-02	0.22	0.16	3.74	4.26	4.93E-03	2.38E-01	4.11E-01	1.18E-03	6.98E-03	5.22E-03	1.20E-01	1.36E-01
2013	3	0.15	7.43	12.84	3.70E-02	0.22	0.16	3.74	4.26	4.93E-03	2.38E-01	4.11E-01	1.18E-03	6.98E-03	5.22E-03	1.20E-01	1.36E-01
2013	4	0.15	7.43	12.84	3.70E-02	0.22	0.16	3.74	4.26	4.93E-03	2.38E-01	4.11E-01	1.18E-03	6.98E-03	5.22E-03	1.20E-01	1.36E-01
2013	5	0.15	7.43	12.84	3.70E-02	0.22	0.16	3.74	4.26	4.93E-03	2.38E-01	4.11E-01	1.18E-03	6.98E-03	5.22E-03	1.20E-01	1.36E-01
2013	10	0.14	4.45	9.62	3.00E-02	0.21	0.15	2.04	2.32	4.52E-03	1.43E-01	3.08E-01	9.61E-04	6.56E-03	4.84E-03	6.53E-02	7.43E-02
2013	15	0.13	2.55	7.33	2.50E-02	0.19	0.14	0.98	1.11	4.10E-03	8.18E-02	2.35E-01	8.01E-04	6.15E-03	4.45E-03	3.13E-02	3.56E-02
2013	20	0.12	1.77	5.98	2.10E-02	0.18	0.13	0.57	0.65	3.78E-03	5.67E-02	1.92E-01	6.72E-04	5.83E-03	4.13E-03	1.84E-02	2.09E-02
2013	25	0.11	1.69	5.38	2.00E-02	0.18	0.13	0.50	0.57	3.65E-03	5.40E-02	1.72E-01	6.40E-04	5.70E-03	4.03E-03	1.60E-02	1.83E-02
2013	30	0.12	1.63	4.87	1.80E-02	0.18	0.13	0.44	0.50	3.71E-03	5.22E-02	1.56E-01	5.76E-04	5.76E-03	4.10E-03	1.40E-02	1.59E-02
2013	35	0.12	1.60	4.46	1.70E-02	0.19	0.13	0.38	0.43	3.91E-03	5.13E-02	1.43E-01	5.44E-04	5.96E-03	4.26E-03	1.22E-02	1.39E-02
2013	40	0.13	1.61	4.14	1.70E-02	0.20	0.14	0.34	0.38	4.26E-03	5.15E-02	1.33E-01	5.44E-04	6.31E-03	4.58E-03	1.07E-02	1.22E-02
2013	45	0.15	1.64	3.92	1.60E-02	0.21	0.16	0.30	0.34	4.77E-03	5.26E-02	1.26E-01	5.12E-04	6.82E-03	5.06E-03	9.51E-03	1.09E-02
2013	50	0.17	1.71	3.80	1.60E-02	0.23	0.18	0.27	0.31	5.41E-03	5.48E-02	1.22E-01	5.12E-04	7.46E-03	5.67E-03	8.61E-03	9.80E-03
2013	55	0.19	1.81	3.77	1.60E-02	0.26	0.20	0.25	0.28	6.21E-03	5.79E-02	1.21E-01	5.12E-04	8.26E-03	6.40E-03	7.97E-03	9.06E-03
2013	60	0.22	1.94	3.84	1.60E-02	0.29	0.23	0.24	0.27	7.17E-03	6.20E-02	1.23E-01	5.12E-04	9.22E-03	7.27E-03	7.62E-03	8.68E-03
2013	65	0.26	2.10	4.01	1.60E-02	0.32	0.26	0.24	0.27	8.26E-03	6.71E-02	1.28E-01	5.12E-04	1.03E-02	8.29E-03	7.56E-03	8.61E-03
2013	70	0.30	2.29	4.28	1.70E-02	0.36	0.30	0.24	0.28	9.51E-03	7.32E-02	1.37E-01	5.44E-04	1.16E-02	9.45E-03	7.78E-03	8.84E-03
2013	75	0.34	2.51	4.64	1.80E-02	0.41	0.34	0.26	0.29	1.09E-02	8.02E-02	1.48E-01	5.76E-04	1.30E-02	1.07E-02	8.26E-03	9.41E-03
2013	80	0.39	2.76	5.09	1.90E-02	0.45	0.38	0.28	0.32	1.25E-02	8.83E-02	1.63E-01	6.08E-04	1.45E-02	1.22E-02	9.06E-03	1.03E-02
2014	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	4.11E-03	1.55E+00	4.61E+00	2.35E-03	4.11E-03	3.77E-03	2.86E-01	3.25E-01
2014	1	0.15	7.35	12.66	3.70E-02	0.22	0.16	3.70	4.21	5.68E-03	2.74E-01	4.73E-01	1.38E-03	8.07E-03	6.01E-03	1.38E-01	1.57E-01
2014	2	0.15	7.35	12.66	3.70E-02	0.22	0.16	3.70	4.21	5.68E-03	2.74E-01	4.73E-01	1.38E-03	8.07E-03	6.01E-03	1.38E-01	1.57E-01
2014	3	0.15	7.35	12.66	3.70E-02	0.22	0.16	3.70	4.21	5.68E-03	2.74E-01	4.73E-01	1.38E-03	8.07E-03	6.01E-03	1.38E-01	1.57E-01
2014	4	0.15	7.35	12.66	3.70E-02	0.22	0.16	3.70	4.21	5.68E-03	2.74E-01	4.73E-01	1.38E-03	8.07E-03	6.01E-03	1.38E-01	1.57E-01
2014	5	0.15	7.35	12.66	3.70E-02	0.22	0.16	3.70	4.21	5.68E-03	2.74E-01	4.73E-01	1.38E-03	8.07E-03	6.01E-03	1.38E-01	1.57E-01

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2014	10	0.14	4.41	9.50	3.00E-02	0.20	0.15	2.02	2.30	5.19E-03	1.64E-01	3.55E-01	1.12E-03	7.58E-03	5.56E-03	7.53E-02	8.57E-02
2014	15	0.13	2.53	7.23	2.50E-02	0.19	0.14	0.97	1.10	4.74E-03	9.43E-02	2.70E-01	9.34E-04	7.13E-03	5.15E-03	3.60E-02	4.10E-02
2014	20	0.12	1.75	5.90	2.10E-02	0.18	0.13	0.57	0.65	4.33E-03	6.54E-02	2.20E-01	7.84E-04	6.72E-03	4.78E-03	2.12E-02	2.41E-02
2014	25	0.11	1.67	5.31	2.00E-02	0.18	0.13	0.50	0.56	4.22E-03	6.22E-02	1.98E-01	7.47E-04	6.61E-03	4.67E-03	1.85E-02	2.11E-02
2014	30	0.11	1.61	4.80	1.80E-02	0.18	0.13	0.43	0.49	4.26E-03	6.02E-02	1.79E-01	6.72E-04	6.65E-03	4.70E-03	1.61E-02	1.84E-02
2014	35	0.12	1.59	4.40	1.70E-02	0.19	0.13	0.38	0.43	4.52E-03	5.92E-02	1.64E-01	6.35E-04	6.91E-03	4.93E-03	1.41E-02	1.60E-02
2014	40	0.13	1.59	4.08	1.70E-02	0.20	0.14	0.33	0.38	4.89E-03	5.94E-02	1.52E-01	6.35E-04	7.28E-03	5.30E-03	1.24E-02	1.41E-02
2014	45	0.15	1.63	3.87	1.60E-02	0.21	0.16	0.29	0.34	5.49E-03	6.07E-02	1.44E-01	5.97E-04	7.88E-03	5.83E-03	1.10E-02	1.25E-02
2014	50	0.17	1.69	3.75	1.60E-02	0.23	0.18	0.27	0.30	6.24E-03	6.32E-02	1.40E-01	5.97E-04	8.63E-03	6.53E-03	9.93E-03	1.13E-02
2014	55	0.19	1.79	3.72	1.60E-02	0.26	0.20	0.25	0.28	7.17E-03	6.68E-02	1.39E-01	5.97E-04	9.56E-03	7.36E-03	9.19E-03	1.05E-02
2014	60	0.22	1.92	3.79	1.60E-02	0.29	0.22	0.24	0.27	8.25E-03	7.15E-02	1.42E-01	5.97E-04	1.06E-02	8.36E-03	8.78E-03	1.00E-02
2014	65	0.26	2.07	3.96	1.60E-02	0.32	0.26	0.23	0.27	9.52E-03	7.74E-02	1.48E-01	5.97E-04	1.19E-02	9.56E-03	8.70E-03	9.93E-03
2014	70	0.29	2.26	4.22	1.70E-02	0.36	0.29	0.24	0.27	1.10E-02	8.44E-02	1.58E-01	6.35E-04	1.34E-02	1.09E-02	8.96E-03	1.02E-02
2014	75	0.34	2.48	4.58	1.80E-02	0.40	0.33	0.26	0.29	1.26E-02	9.25E-02	1.71E-01	6.72E-04	1.50E-02	1.24E-02	9.56E-03	1.09E-02
2014	80	0.39	2.73	5.03	1.90E-02	0.45	0.38	0.28	0.32	1.44E-02	1.02E-01	1.88E-01	7.09E-04	1.68E-02	1.40E-02	1.05E-02	1.19E-02
2015	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	4.51E-03	1.70E+00	5.07E+00	2.58E-03	4.51E-03	4.14E-03	3.14E-01	3.57E-01
2015	1	0.15	7.26	12.48	3.70E-02	0.21	0.16	3.65	4.16	6.15E-03	2.98E-01	5.12E-01	1.52E-03	8.78E-03	6.52E-03	1.50E-01	1.71E-01
2015	2	0.15	7.26	12.48	3.70E-02	0.21	0.16	3.65	4.16	6.15E-03	2.98E-01	5.12E-01	1.52E-03	8.78E-03	6.52E-03	1.50E-01	1.71E-01
2015	3	0.15	7.26	12.48	3.70E-02	0.21	0.16	3.65	4.16	6.15E-03	2.98E-01	5.12E-01	1.52E-03	8.78E-03	6.52E-03	1.50E-01	1.71E-01
2015	4	0.15	7.26	12.48	3.70E-02	0.21	0.16	3.65	4.16	6.15E-03	2.98E-01	5.12E-01	1.52E-03	8.78E-03	6.52E-03	1.50E-01	1.71E-01
2015	5	0.15	7.26	12.48	3.70E-02	0.21	0.16	3.65	4.16	6.15E-03	2.98E-01	5.12E-01	1.52E-03	8.78E-03	6.52E-03	1.50E-01	1.71E-01
2015	10	0.14	4.35	9.36	3.00E-02	0.20	0.15	1.99	2.27	5.62E-03	1.78E-01	3.84E-01	1.23E-03	8.24E-03	6.03E-03	8.17E-02	9.30E-02
2015	15	0.13	2.50	7.13	2.50E-02	0.19	0.14	0.95	1.09	5.13E-03	1.02E-01	2.92E-01	1.03E-03	7.75E-03	5.58E-03	3.91E-02	4.45E-02
2015	20	0.11	1.73	5.82	2.10E-02	0.18	0.13	0.56	0.64	4.68E-03	7.10E-02	2.39E-01	8.61E-04	7.30E-03	5.17E-03	2.30E-02	2.62E-02
2015	25	0.11	1.65	5.23	2.00E-02	0.18	0.12	0.49	0.56	4.55E-03	6.75E-02	2.14E-01	8.20E-04	7.18E-03	5.04E-03	2.01E-02	2.28E-02
2015	30	0.11	1.59	4.73	1.80E-02	0.18	0.13	0.43	0.49	4.63E-03	6.53E-02	1.94E-01	7.38E-04	7.26E-03	5.13E-03	1.75E-02	1.99E-02
2015	35	0.12	1.57	4.33	1.70E-02	0.18	0.13	0.37	0.42	4.88E-03	6.42E-02	1.78E-01	6.97E-04	7.51E-03	5.33E-03	1.53E-02	1.74E-02
2015	40	0.13	1.57	4.03	1.70E-02	0.19	0.14	0.33	0.37	5.33E-03	6.45E-02	1.65E-01	6.97E-04	7.96E-03	5.74E-03	1.34E-02	1.53E-02
2015	45	0.15	1.61	3.81	1.60E-02	0.21	0.15	0.29	0.33	5.95E-03	6.59E-02	1.56E-01	6.56E-04	8.57E-03	6.32E-03	1.19E-02	1.36E-02
2015	50	0.17	1.67	3.69	1.60E-02	0.23	0.17	0.26	0.30	6.77E-03	6.86E-02	1.51E-01	6.56E-04	9.39E-03	7.10E-03	1.08E-02	1.23E-02
2015	55	0.19	1.77	3.67	1.60E-02	0.25	0.20	0.24	0.28	7.75E-03	7.25E-02	1.50E-01	6.56E-04	1.04E-02	8.00E-03	9.97E-03	1.14E-02
2015	60	0.22	1.89	3.74	1.60E-02	0.28	0.22	0.23	0.27	8.94E-03	7.76E-02	1.53E-01	6.56E-04	1.16E-02	9.10E-03	9.56E-03	1.09E-02
2015	65	0.25	2.05	3.90	1.60E-02	0.32	0.25	0.23	0.26	1.03E-02	8.40E-02	1.60E-01	6.56E-04	1.30E-02	1.03E-02	9.47E-03	1.07E-02
2015	70	0.29	2.23	4.16	1.70E-02	0.35	0.29	0.24	0.27	1.19E-02	9.15E-02	1.70E-01	6.97E-04	1.45E-02	1.18E-02	9.72E-03	1.11E-02
2015	75	0.33	2.45	4.51	1.80E-02	0.40	0.33	0.25	0.29	1.36E-02	1.00E-01	1.85E-01	7.38E-04	1.62E-02	1.34E-02	1.04E-02	1.18E-02
2015	80	0.38	2.69	4.95	1.90E-02	0.44	0.37	0.28	0.32	1.56E-02	1.10E-01	2.03E-01	7.79E-04	1.82E-02	1.52E-02	1.14E-02	1.29E-02
2016	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	4.85E-03	1.83E+00	5.45E+00	2.78E-03	4.85E-03	4.45E-03	3.38E-01	3.84E-01
2016	1	0.15	7.17	12.28	3.70E-02	0.21	0.16	3.61	4.11	6.53E-03	3.16E-01	5.42E-01	1.63E-03	9.35E-03	6.93E-03	1.59E-01	1.81E-01
2016	2	0.15	7.17	12.28	3.70E-02	0.21	0.16	3.61	4.11	6.53E-03	3.16E-01	5.42E-01	1.63E-03	9.35E-03	6.93E-03	1.59E-01	1.81E-01
2016	3	0.15	7.17	12.28	3.70E-02	0.21	0.16	3.61	4.11	6.53E-03	3.16E-01	5.42E-01	1.63E-03	9.35E-03	6.93E-03	1.59E-01	1.81E-01
2016	4	0.15	7.17	12.28	3.70E-02	0.21	0.16	3.61	4.11	6.53E-03	3.16E-01	5.42E-01	1.63E-03	9.35E-03	6.93E-03	1.59E-01	1.81E-01
2016	5	0.15	7.17	12.28	3.70E-02	0.21	0.16	3.61	4.11	6.53E-03	3.16E-01	5.42E-01	1.63E-03	9.35E-03	6.93E-03	1.59E-01	1.81E-01
2016	10	0.14	4.30	9.21	3.00E-02	0.20	0.15	1.97	2.24	5.95E-03	1.89E-01	4.06E-01	1.32E-03	8.78E-03	6.40E-03	8.67E-02	9.87E-02
2016	15	0.12	2.46	7.01	2.50E-02	0.19	0.13	0.94	1.07	5.43E-03	1.09E-01	3.09E-01	1.10E-03	8.25E-03	5.91E-03	4.15E-02	4.72E-02
2016	20	0.11	1.71	5.72	2.10E-02	0.18	0.13	0.55	0.63	4.98E-03	7.54E-02	2.52E-01	9.26E-04	7.81E-03	5.51E-03	2.44E-02	2.78E-02

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2016	25	0.11	1.63	5.15	2.00E-02	0.17	0.12	0.48	0.55	4.85E-03	7.17E-02	2.27E-01	8.82E-04	7.67E-03	5.38E-03	2.13E-02	2.43E-02
2016	30	0.11	1.57	4.66	1.80E-02	0.18	0.12	0.42	0.48	4.90E-03	6.93E-02	2.05E-01	7.94E-04	7.72E-03	5.43E-03	1.86E-02	2.11E-02
2016	35	0.12	1.55	4.26	1.70E-02	0.18	0.13	0.37	0.42	5.16E-03	6.82E-02	1.88E-01	7.50E-04	7.98E-03	5.69E-03	1.62E-02	1.85E-02
2016	40	0.13	1.55	3.96	1.70E-02	0.19	0.14	0.32	0.37	5.65E-03	6.84E-02	1.75E-01	7.50E-04	8.47E-03	6.13E-03	1.42E-02	1.62E-02
2016	45	0.14	1.59	3.75	1.60E-02	0.21	0.15	0.29	0.33	6.31E-03	7.00E-02	1.65E-01	7.06E-04	9.13E-03	6.70E-03	1.27E-02	1.44E-02
2016	50	0.16	1.65	3.63	1.60E-02	0.23	0.17	0.26	0.30	7.15E-03	7.28E-02	1.60E-01	7.06E-04	9.97E-03	7.50E-03	1.14E-02	1.30E-02
2016	55	0.19	1.74	3.61	1.60E-02	0.25	0.19	0.24	0.27	8.20E-03	7.69E-02	1.59E-01	7.06E-04	1.10E-02	8.47E-03	1.06E-02	1.20E-02
2016	60	0.22	1.87	3.68	1.60E-02	0.28	0.22	0.23	0.26	9.48E-03	8.24E-02	1.62E-01	7.06E-04	1.23E-02	9.66E-03	1.01E-02	1.15E-02
2016	65	0.25	2.02	3.84	1.60E-02	0.31	0.25	0.23	0.26	1.09E-02	8.91E-02	1.69E-01	7.06E-04	1.38E-02	1.10E-02	1.01E-02	1.14E-02
2016	70	0.29	2.20	4.09	1.70E-02	0.35	0.28	0.23	0.27	1.26E-02	9.72E-02	1.80E-01	7.50E-04	1.54E-02	1.25E-02	1.03E-02	1.18E-02
2016	75	0.33	2.42	4.44	1.80E-02	0.39	0.32	0.25	0.28	1.44E-02	1.07E-01	1.96E-01	7.94E-04	1.72E-02	1.42E-02	1.10E-02	1.25E-02
2016	80	0.37	2.66	4.88	1.90E-02	0.44	0.37	0.27	0.31	1.65E-02	1.17E-01	2.15E-01	8.38E-04	1.93E-02	1.61E-02	1.20E-02	1.37E-02
2017	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	5.30E-03	1.99E+00	5.95E+00	3.03E-03	5.30E-03	4.86E-03	3.68E-01	4.19E-01
2017	1	0.15	7.06	12.07	3.70E-02	0.21	0.16	3.56	4.05	6.98E-03	3.40E-01	5.81E-01	1.78E-03	1.01E-02	7.46E-03	1.71E-01	1.95E-01
2017	2	0.15	7.06	12.07	3.70E-02	0.21	0.16	3.56	4.05	6.98E-03	3.40E-01	5.81E-01	1.78E-03	1.01E-02	7.46E-03	1.71E-01	1.95E-01
2017	3	0.15	7.06	12.07	3.70E-02	0.21	0.16	3.56	4.05	6.98E-03	3.40E-01	5.81E-01	1.78E-03	1.01E-02	7.46E-03	1.71E-01	1.95E-01
2017	4	0.15	7.06	12.07	3.70E-02	0.21	0.16	3.56	4.05	6.98E-03	3.40E-01	5.81E-01	1.78E-03	1.01E-02	7.46E-03	1.71E-01	1.95E-01
2017	5	0.15	7.06	12.07	3.70E-02	0.21	0.16	3.56	4.05	6.98E-03	3.40E-01	5.81E-01	1.78E-03	1.01E-02	7.46E-03	1.71E-01	1.95E-01
2017	10	0.13	4.23	9.05	3.00E-02	0.20	0.14	1.94	2.21	6.40E-03	2.04E-01	4.36E-01	1.44E-03	9.49E-03	6.89E-03	9.33E-02	1.06E-01
2017	15	0.12	2.43	6.89	2.50E-02	0.19	0.13	0.93	1.06	5.83E-03	1.17E-01	3.32E-01	1.20E-03	8.91E-03	6.36E-03	4.47E-02	5.08E-02
2017	20	0.11	1.68	5.63	2.10E-02	0.18	0.12	0.55	0.62	5.34E-03	8.11E-02	2.71E-01	1.01E-03	8.43E-03	5.92E-03	2.63E-02	2.99E-02
2017	25	0.11	1.60	5.06	2.00E-02	0.17	0.12	0.48	0.54	5.20E-03	7.71E-02	2.43E-01	9.63E-04	8.28E-03	5.78E-03	2.29E-02	2.61E-02
2017	30	0.11	1.55	4.58	1.80E-02	0.17	0.12	0.42	0.47	5.25E-03	7.45E-02	2.20E-01	8.67E-04	8.33E-03	5.87E-03	2.00E-02	2.28E-02
2017	35	0.12	1.52	4.19	1.70E-02	0.18	0.13	0.36	0.41	5.54E-03	7.34E-02	2.02E-01	8.19E-04	8.62E-03	6.12E-03	1.75E-02	1.99E-02
2017	40	0.13	1.53	3.89	1.70E-02	0.19	0.14	0.32	0.36	6.07E-03	7.36E-02	1.87E-01	8.19E-04	9.15E-03	6.60E-03	1.53E-02	1.75E-02
2017	45	0.14	1.56	3.69	1.60E-02	0.20	0.15	0.28	0.32	6.74E-03	7.53E-02	1.77E-01	7.70E-04	9.82E-03	7.22E-03	1.36E-02	1.55E-02
2017	50	0.16	1.63	3.57	1.60E-02	0.22	0.17	0.26	0.29	7.70E-03	7.83E-02	1.72E-01	7.70E-04	1.08E-02	8.09E-03	1.23E-02	1.40E-02
2017	55	0.18	1.72	3.55	1.60E-02	0.25	0.19	0.24	0.27	8.81E-03	8.28E-02	1.71E-01	7.70E-04	1.19E-02	9.15E-03	1.14E-02	1.30E-02
2017	60	0.21	1.84	3.61	1.60E-02	0.28	0.22	0.23	0.26	1.02E-02	8.86E-02	1.74E-01	7.70E-04	1.32E-02	1.04E-02	1.09E-02	1.24E-02
2017	65	0.24	1.99	3.77	1.60E-02	0.31	0.25	0.22	0.26	1.17E-02	9.59E-02	1.82E-01	7.70E-04	1.48E-02	1.18E-02	1.08E-02	1.23E-02
2017	70	0.28	2.17	4.02	1.70E-02	0.35	0.28	0.23	0.26	1.35E-02	1.05E-01	1.94E-01	8.19E-04	1.66E-02	1.34E-02	1.11E-02	1.27E-02
2017	75	0.32	2.38	4.36	1.80E-02	0.39	0.32	0.25	0.28	1.55E-02	1.15E-01	2.10E-01	8.67E-04	1.86E-02	1.53E-02	1.18E-02	1.35E-02
2017	80	0.37	2.62	4.79	1.90E-02	0.43	0.36	0.27	0.31	1.77E-02	1.26E-01	2.31E-01	9.15E-04	2.08E-02	1.73E-02	1.30E-02	1.47E-02
2018	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	5.79E-03	2.18E+00	6.50E+00	3.32E-03	5.79E-03	5.32E-03	4.03E-01	4.58E-01
2018	1	0.14	6.95	11.84	3.70E-02	0.21	0.15	3.50	3.99	7.53E-03	3.66E-01	6.23E-01	1.95E-03	1.09E-02	8.00E-03	1.84E-01	2.10E-01
2018	2	0.14	6.95	11.84	3.70E-02	0.21	0.15	3.50	3.99	7.53E-03	3.66E-01	6.23E-01	1.95E-03	1.09E-02	8.00E-03	1.84E-01	2.10E-01
2018	3	0.14	6.95	11.84	3.70E-02	0.21	0.15	3.50	3.99	7.53E-03	3.66E-01	6.23E-01	1.95E-03	1.09E-02	8.00E-03	1.84E-01	2.10E-01
2018	4	0.14	6.95	11.84	3.70E-02	0.21	0.15	3.50	3.99	7.53E-03	3.66E-01	6.23E-01	1.95E-03	1.09E-02	8.00E-03	1.84E-01	2.10E-01
2018	5	0.14	6.95	11.84	3.70E-02	0.21	0.15	3.50	3.99	7.53E-03	3.66E-01	6.23E-01	1.95E-03	1.09E-02	8.00E-03	1.84E-01	2.10E-01
2018	10	0.13	4.17	8.88	3.00E-02	0.20	0.14	1.91	2.17	6.89E-03	2.19E-01	4.67E-01	1.58E-03	1.03E-02	7.42E-03	1.00E-01	1.14E-01
2018	15	0.12	2.39	6.76	2.50E-02	0.18	0.13	0.91	1.04	6.26E-03	1.26E-01	3.56E-01	1.32E-03	9.63E-03	6.84E-03	4.80E-02	5.47E-02
2018	20	0.11	1.66	5.52	2.10E-02	0.17	0.12	0.54	0.61	5.74E-03	8.73E-02	2.90E-01	1.11E-03	9.10E-03	6.37E-03	2.83E-02	3.22E-02
2018	25	0.11	1.58	4.96	2.00E-02	0.17	0.12	0.47	0.53	5.58E-03	8.30E-02	2.61E-01	1.05E-03	8.95E-03	6.26E-03	2.47E-02	2.81E-02
2018	30	0.11	1.52	4.49	1.80E-02	0.17	0.12	0.41	0.47	5.68E-03	8.02E-02	2.36E-01	9.47E-04	9.05E-03	6.32E-03	2.15E-02	2.45E-02
2018	35	0.11	1.50	4.11	1.70E-02	0.18	0.13	0.36	0.41	5.95E-03	7.89E-02	2.16E-01	8.95E-04	9.31E-03	6.58E-03	1.88E-02	2.14E-02

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2018	40	0.12	1.51	3.82	1.70E-02	0.19	0.14	0.31	0.36	6.47E-03	7.92E-02	2.01E-01	8.95E-04	9.84E-03	7.10E-03	1.65E-02	1.88E-02
2018	45	0.14	1.54	3.62	1.60E-02	0.20	0.15	0.28	0.32	7.26E-03	8.10E-02	1.90E-01	8.42E-04	1.06E-02	7.79E-03	1.46E-02	1.67E-02
2018	50	0.16	1.60	3.50	1.60E-02	0.22	0.17	0.25	0.29	8.26E-03	8.43E-02	1.84E-01	8.42E-04	1.16E-02	8.68E-03	1.33E-02	1.51E-02
2018	55	0.18	1.69	3.48	1.60E-02	0.24	0.19	0.23	0.27	9.47E-03	8.90E-02	1.83E-01	8.42E-04	1.28E-02	9.84E-03	1.23E-02	1.39E-02
2018	60	0.21	1.81	3.55	1.60E-02	0.27	0.21	0.22	0.25	1.09E-02	9.54E-02	1.87E-01	8.42E-04	1.43E-02	1.12E-02	1.17E-02	1.34E-02
2018	65	0.24	1.96	3.70	1.60E-02	0.30	0.24	0.22	0.25	1.26E-02	1.03E-01	1.95E-01	8.42E-04	1.60E-02	1.27E-02	1.16E-02	1.32E-02
2018	70	0.28	2.14	3.94	1.70E-02	0.34	0.28	0.23	0.26	1.45E-02	1.13E-01	2.08E-01	8.95E-04	1.79E-02	1.45E-02	1.19E-02	1.36E-02
2018	75	0.32	2.34	4.28	1.80E-02	0.38	0.31	0.24	0.28	1.66E-02	1.23E-01	2.25E-01	9.47E-04	2.00E-02	1.64E-02	1.27E-02	1.45E-02
2018	80	0.36	2.58	4.70	1.90E-02	0.43	0.35	0.27	0.30	1.90E-02	1.36E-01	2.47E-01	1.00E-03	2.24E-02	1.86E-02	1.39E-02	1.59E-02
2019	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	6.33E-03	2.38E+00	7.11E+00	3.63E-03	6.33E-03	5.81E-03	4.40E-01	5.01E-01
2019	1	0.14	6.84	11.59	3.70E-02	0.20	0.15	3.44	3.92	8.06E-03	3.93E-01	6.67E-01	2.13E-03	1.17E-02	8.63E-03	1.98E-01	2.25E-01
2019	2	0.14	6.84	11.59	3.70E-02	0.20	0.15	3.44	3.92	8.06E-03	3.93E-01	6.67E-01	2.13E-03	1.17E-02	8.63E-03	1.98E-01	2.25E-01
2019	3	0.14	6.84	11.59	3.70E-02	0.20	0.15	3.44	3.92	8.06E-03	3.93E-01	6.67E-01	2.13E-03	1.17E-02	8.63E-03	1.98E-01	2.25E-01
2019	4	0.14	6.84	11.59	3.70E-02	0.20	0.15	3.44	3.92	8.06E-03	3.93E-01	6.67E-01	2.13E-03	1.17E-02	8.63E-03	1.98E-01	2.25E-01
2019	5	0.14	6.84	11.59	3.70E-02	0.20	0.15	3.44	3.92	8.06E-03	3.93E-01	6.67E-01	2.13E-03	1.17E-02	8.63E-03	1.98E-01	2.25E-01
2019	10	0.13	4.10	8.69	3.00E-02	0.19	0.14	1.88	2.14	7.37E-03	2.36E-01	5.00E-01	1.73E-03	1.11E-02	8.00E-03	1.08E-01	1.23E-01
2019	15	0.12	2.35	6.62	2.50E-02	0.18	0.13	0.90	1.02	6.73E-03	1.35E-01	3.81E-01	1.44E-03	1.04E-02	7.37E-03	5.17E-02	5.88E-02
2019	20	0.11	1.63	5.40	2.10E-02	0.17	0.12	0.53	0.60	6.16E-03	9.38E-02	3.11E-01	1.21E-03	9.84E-03	6.85E-03	3.04E-02	3.46E-02
2019	25	0.10	1.55	4.86	2.00E-02	0.17	0.12	0.46	0.53	5.99E-03	8.92E-02	2.80E-01	1.15E-03	9.67E-03	6.73E-03	2.65E-02	3.02E-02
2019	30	0.11	1.50	4.40	1.80E-02	0.17	0.12	0.40	0.46	6.04E-03	8.62E-02	2.53E-01	1.04E-03	9.73E-03	6.79E-03	2.31E-02	2.63E-02
2019	35	0.11	1.48	4.02	1.70E-02	0.18	0.12	0.35	0.40	6.39E-03	8.49E-02	2.32E-01	9.79E-04	1.01E-02	7.08E-03	2.02E-02	2.30E-02
2019	40	0.12	1.48	3.74	1.70E-02	0.19	0.13	0.31	0.35	6.96E-03	8.52E-02	2.15E-01	9.79E-04	1.06E-02	7.60E-03	1.77E-02	2.02E-02
2019	45	0.14	1.51	3.54	1.60E-02	0.20	0.15	0.27	0.31	7.77E-03	8.71E-02	2.04E-01	9.21E-04	1.15E-02	8.35E-03	1.58E-02	1.80E-02
2019	50	0.15	1.57	3.43	1.60E-02	0.22	0.16	0.25	0.28	8.86E-03	9.06E-02	1.97E-01	9.21E-04	1.25E-02	9.32E-03	1.42E-02	1.62E-02
2019	55	0.18	1.66	3.41	1.60E-02	0.24	0.18	0.23	0.26	1.02E-02	9.57E-02	1.96E-01	9.21E-04	1.39E-02	1.05E-02	1.32E-02	1.50E-02
2019	60	0.20	1.78	3.47	1.60E-02	0.27	0.21	0.22	0.25	1.17E-02	1.03E-01	2.00E-01	9.21E-04	1.54E-02	1.20E-02	1.26E-02	1.43E-02
2019	65	0.24	1.93	3.62	1.60E-02	0.30	0.24	0.22	0.25	1.35E-02	1.11E-01	2.09E-01	9.21E-04	1.72E-02	1.36E-02	1.25E-02	1.42E-02
2019	70	0.27	2.10	3.86	1.70E-02	0.33	0.27	0.22	0.25	1.55E-02	1.21E-01	2.22E-01	9.79E-04	1.92E-02	1.55E-02	1.28E-02	1.46E-02
2019	75	0.31	2.30	4.19	1.80E-02	0.37	0.31	0.24	0.27	1.78E-02	1.33E-01	2.41E-01	1.04E-03	2.15E-02	1.76E-02	1.37E-02	1.56E-02
2019	80	0.35	2.54	4.60	1.90E-02	0.42	0.35	0.26	0.30	2.04E-02	1.46E-01	2.65E-01	1.09E-03	2.41E-02	2.00E-02	1.50E-02	1.71E-02
2020	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	6.65E-03	2.50E+00	7.47E+00	3.81E-03	6.65E-03	6.11E-03	4.63E-01	5.27E-01
2020	1	0.14	6.71	11.32	3.70E-02	0.20	0.15	3.38	3.84	8.28E-03	4.06E-01	6.85E-01	2.24E-03	1.22E-02	8.89E-03	2.04E-01	2.32E-01
2020	2	0.14	6.71	11.32	3.70E-02	0.20	0.15	3.38	3.84	8.28E-03	4.06E-01	6.85E-01	2.24E-03	1.22E-02	8.89E-03	2.04E-01	2.32E-01
2020	3	0.14	6.71	11.32	3.70E-02	0.20	0.15	3.38	3.84	8.28E-03	4.06E-01	6.85E-01	2.24E-03	1.22E-02	8.89E-03	2.04E-01	2.32E-01
2020	4	0.14	6.71	11.32	3.70E-02	0.20	0.15	3.38	3.84	8.28E-03	4.06E-01	6.85E-01	2.24E-03	1.22E-02	8.89E-03	2.04E-01	2.32E-01
2020	5	0.14	6.71	11.32	3.70E-02	0.20	0.15	3.38	3.84	8.28E-03	4.06E-01	6.85E-01	2.24E-03	1.22E-02	8.89E-03	2.04E-01	2.32E-01
2020	10	0.13	4.02	8.49	3.00E-02	0.19	0.14	1.84	2.10	7.56E-03	2.43E-01	5.13E-01	1.81E-03	1.14E-02	8.22E-03	1.11E-01	1.27E-01
2020	15	0.11	2.31	6.47	2.50E-02	0.18	0.13	0.88	1.00	6.89E-03	1.39E-01	3.91E-01	1.51E-03	1.08E-02	7.62E-03	5.33E-02	6.06E-02
2020	20	0.11	1.60	5.28	2.10E-02	0.17	0.12	0.52	0.59	6.35E-03	9.67E-02	3.19E-01	1.27E-03	1.02E-02	7.07E-03	3.13E-02	3.57E-02
2020	25	0.10	1.52	4.74	2.00E-02	0.17	0.12	0.45	0.52	6.17E-03	9.20E-02	2.87E-01	1.21E-03	1.00E-02	6.95E-03	2.73E-02	3.11E-02
2020	30	0.10	1.47	4.29	1.80E-02	0.17	0.12	0.39	0.45	6.23E-03	8.89E-02	2.60E-01	1.09E-03	1.01E-02	7.01E-03	2.38E-02	2.71E-02
2020	35	0.11	1.45	3.93	1.70E-02	0.17	0.12	0.34	0.39	6.59E-03	8.75E-02	2.38E-01	1.03E-03	1.05E-02	7.32E-03	2.08E-02	2.37E-02
2020	40	0.12	1.45	3.65	1.70E-02	0.18	0.13	0.30	0.34	7.13E-03	8.78E-02	2.21E-01	1.03E-03	1.10E-02	7.86E-03	1.83E-02	2.08E-02
2020	45	0.13	1.48	3.46	1.60E-02	0.20	0.14	0.27	0.31	7.98E-03	8.97E-02	2.09E-01	9.67E-04	1.19E-02	8.65E-03	1.63E-02	1.85E-02
2020	50	0.15	1.54	3.35	1.60E-02	0.21	0.16	0.24	0.28	9.07E-03	9.34E-02	2.03E-01	9.67E-04	1.29E-02	9.61E-03	1.47E-02	1.67E-02

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2020	55	0.17	1.63	3.33	1.60E-02	0.24	0.18	0.23	0.26	1.05E-02	9.87E-02	2.01E-01	9.67E-04	1.43E-02	1.09E-02	1.36E-02	1.55E-02
2020	60	0.20	1.75	3.39	1.60E-02	0.26	0.20	0.22	0.25	1.20E-02	1.06E-01	2.05E-01	9.67E-04	1.59E-02	1.23E-02	1.30E-02	1.48E-02
2020	65	0.23	1.89	3.54	1.60E-02	0.29	0.23	0.21	0.24	1.39E-02	1.14E-01	2.14E-01	9.67E-04	1.78E-02	1.40E-02	1.29E-02	1.47E-02
2020	70	0.27	2.06	3.77	1.70E-02	0.33	0.26	0.22	0.25	1.60E-02	1.25E-01	2.28E-01	1.03E-03	1.99E-02	1.60E-02	1.32E-02	1.51E-02
2020	75	0.30	2.26	4.09	1.80E-02	0.37	0.30	0.23	0.27	1.84E-02	1.37E-01	2.47E-01	1.09E-03	2.23E-02	1.81E-02	1.41E-02	1.61E-02
2020	80	0.35	2.49	4.50	1.90E-02	0.41	0.34	0.26	0.29	2.10E-02	1.50E-01	2.72E-01	1.15E-03	2.49E-02	2.06E-02	1.55E-02	1.76E-02
2021	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	7.08E-03	2.67E+00	7.95E+00	4.06E-03	7.08E-03	6.50E-03	4.93E-01	5.61E-01
2021	1	0.13	6.57	11.03	3.70E-02	0.20	0.14	3.31	3.77	8.63E-03	4.23E-01	7.11E-01	2.38E-03	1.28E-02	9.27E-03	2.13E-01	2.42E-01
2021	2	0.13	6.57	11.03	3.70E-02	0.20	0.14	3.31	3.77	8.63E-03	4.23E-01	7.11E-01	2.38E-03	1.28E-02	9.27E-03	2.13E-01	2.42E-01
2021	3	0.13	6.57	11.03	3.70E-02	0.20	0.14	3.31	3.77	8.63E-03	4.23E-01	7.11E-01	2.38E-03	1.28E-02	9.27E-03	2.13E-01	2.42E-01
2021	4	0.13	6.57	11.03	3.70E-02	0.20	0.14	3.31	3.77	8.63E-03	4.23E-01	7.11E-01	2.38E-03	1.28E-02	9.27E-03	2.13E-01	2.42E-01
2021	5	0.13	6.57	11.03	3.70E-02	0.20	0.14	3.31	3.77	8.63E-03	4.23E-01	7.11E-01	2.38E-03	1.28E-02	9.27E-03	2.13E-01	2.42E-01
2021	10	0.12	3.94	8.27	3.00E-02	0.19	0.13	1.80	2.05	7.86E-03	2.54E-01	5.33E-01	1.93E-03	1.20E-02	8.63E-03	1.16E-01	1.32E-01
2021	15	0.11	2.26	6.30	2.50E-02	0.18	0.12	0.86	0.98	7.15E-03	1.45E-01	4.06E-01	1.61E-03	1.13E-02	7.99E-03	5.56E-02	6.32E-02
2021	20	0.10	1.57	5.14	2.10E-02	0.17	0.12	0.51	0.58	6.57E-03	1.01E-01	3.31E-01	1.35E-03	1.07E-02	7.41E-03	3.27E-02	3.72E-02
2021	25	0.10	1.49	4.62	2.00E-02	0.16	0.11	0.44	0.50	6.38E-03	9.59E-02	2.98E-01	1.29E-03	1.05E-02	7.21E-03	2.85E-02	3.25E-02
2021	30	0.10	1.44	4.18	1.80E-02	0.17	0.11	0.39	0.44	6.50E-03	9.27E-02	2.69E-01	1.16E-03	1.06E-02	7.34E-03	2.49E-02	2.83E-02
2021	35	0.11	1.42	3.83	1.70E-02	0.17	0.12	0.34	0.38	6.83E-03	9.13E-02	2.47E-01	1.09E-03	1.09E-02	7.66E-03	2.17E-02	2.47E-02
2021	40	0.12	1.42	3.56	1.70E-02	0.18	0.13	0.30	0.34	7.47E-03	9.16E-02	2.29E-01	1.09E-03	1.16E-02	8.18E-03	1.91E-02	2.17E-02
2021	45	0.13	1.45	3.37	1.60E-02	0.19	0.14	0.26	0.30	8.31E-03	9.36E-02	2.17E-01	1.03E-03	1.24E-02	9.02E-03	1.69E-02	1.93E-02
2021	50	0.15	1.51	3.27	1.60E-02	0.21	0.16	0.24	0.27	9.47E-03	9.74E-02	2.10E-01	1.03E-03	1.36E-02	1.00E-02	1.53E-02	1.75E-02
2021	55	0.17	1.60	3.24	1.60E-02	0.23	0.18	0.22	0.25	1.09E-02	1.03E-01	2.09E-01	1.03E-03	1.50E-02	1.13E-02	1.42E-02	1.62E-02
2021	60	0.19	1.71	3.30	1.60E-02	0.26	0.20	0.21	0.24	1.25E-02	1.10E-01	2.13E-01	1.03E-03	1.66E-02	1.29E-02	1.35E-02	1.55E-02
2021	65	0.22	1.85	3.45	1.60E-02	0.29	0.23	0.21	0.24	1.44E-02	1.19E-01	2.22E-01	1.03E-03	1.85E-02	1.46E-02	1.35E-02	1.53E-02
2021	70	0.26	2.02	3.68	1.70E-02	0.32	0.26	0.22	0.24	1.66E-02	1.30E-01	2.37E-01	1.09E-03	2.07E-02	1.67E-02	1.38E-02	1.57E-02
2021	75	0.30	2.21	3.99	1.80E-02	0.36	0.29	0.23	0.26	1.91E-02	1.43E-01	2.57E-01	1.16E-03	2.32E-02	1.89E-02	1.47E-02	1.67E-02
2021	80	0.34	2.44	4.38	1.90E-02	0.40	0.33	0.25	0.29	2.18E-02	1.57E-01	2.82E-01	1.22E-03	2.59E-02	2.14E-02	1.61E-02	1.84E-02
2022	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	7.56E-03	2.85E+00	8.49E+00	4.33E-03	7.56E-03	6.94E-03	5.26E-01	5.98E-01
2022	1	0.13	6.42	10.72	3.70E-02	0.19	0.14	3.23	3.68	8.93E-03	4.41E-01	7.36E-01	2.54E-03	1.33E-02	9.69E-03	2.22E-01	2.53E-01
2022	2	0.13	6.42	10.72	3.70E-02	0.19	0.14	3.23	3.68	8.93E-03	4.41E-01	7.36E-01	2.54E-03	1.33E-02	9.69E-03	2.22E-01	2.53E-01
2022	3	0.13	6.42	10.72	3.70E-02	0.19	0.14	3.23	3.68	8.93E-03	4.41E-01	7.36E-01	2.54E-03	1.33E-02	9.69E-03	2.22E-01	2.53E-01
2022	4	0.13	6.42	10.72	3.70E-02	0.19	0.14	3.23	3.68	8.93E-03	4.41E-01	7.36E-01	2.54E-03	1.33E-02	9.69E-03	2.22E-01	2.53E-01
2022	5	0.13	6.42	10.72	3.70E-02	0.19	0.14	3.23	3.68	8.93E-03	4.41E-01	7.36E-01	2.54E-03	1.33E-02	9.69E-03	2.22E-01	2.53E-01
2022	10	0.12	3.85	8.04	3.00E-02	0.18	0.13	1.76	2.01	8.18E-03	2.64E-01	5.52E-01	2.06E-03	1.26E-02	9.00E-03	1.21E-01	1.38E-01
2022	15	0.11	2.21	6.12	2.50E-02	0.17	0.12	0.84	0.96	7.42E-03	1.51E-01	4.20E-01	1.72E-03	1.18E-02	8.31E-03	5.79E-02	6.60E-02
2022	20	0.10	1.53	4.99	2.10E-02	0.16	0.11	0.50	0.56	6.80E-03	1.05E-01	3.43E-01	1.44E-03	1.12E-02	7.69E-03	3.41E-02	3.87E-02
2022	25	0.10	1.46	4.49	2.00E-02	0.16	0.11	0.43	0.49	6.66E-03	1.00E-01	3.08E-01	1.37E-03	1.11E-02	7.56E-03	2.97E-02	3.39E-02
2022	30	0.10	1.41	4.06	1.80E-02	0.16	0.11	0.38	0.43	6.73E-03	9.66E-02	2.79E-01	1.24E-03	1.11E-02	7.63E-03	2.59E-02	2.95E-02
2022	35	0.10	1.38	3.72	1.70E-02	0.17	0.12	0.33	0.38	7.08E-03	9.51E-02	2.56E-01	1.17E-03	1.15E-02	7.97E-03	2.26E-02	2.58E-02
2022	40	0.11	1.39	3.46	1.70E-02	0.18	0.13	0.29	0.33	7.76E-03	9.54E-02	2.37E-01	1.17E-03	1.22E-02	8.59E-03	1.99E-02	2.26E-02
2022	45	0.13	1.42	3.27	1.60E-02	0.19	0.14	0.26	0.29	8.66E-03	9.76E-02	2.25E-01	1.10E-03	1.31E-02	9.41E-03	1.77E-02	2.01E-02
2022	50	0.14	1.48	3.17	1.60E-02	0.21	0.15	0.23	0.26	9.82E-03	1.01E-01	2.18E-01	1.10E-03	1.42E-02	1.04E-02	1.59E-02	1.81E-02
2022	55	0.16	1.56	3.15	1.60E-02	0.23	0.17	0.22	0.25	1.13E-02	1.07E-01	2.16E-01	1.10E-03	1.57E-02	1.18E-02	1.48E-02	1.68E-02
2022	60	0.19	1.67	3.21	1.60E-02	0.25	0.20	0.21	0.23	1.30E-02	1.15E-01	2.20E-01	1.10E-03	1.74E-02	1.34E-02	1.42E-02	1.61E-02
2022	65	0.22	1.81	3.35	1.60E-02	0.28	0.22	0.20	0.23	1.50E-02	1.24E-01	2.30E-01	1.10E-03	1.94E-02	1.53E-02	1.40E-02	1.59E-02

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2022	70	0.25	1.97	3.57	1.70E-02	0.32	0.25	0.21	0.24	1.72E-02	1.36E-01	2.45E-01	1.17E-03	2.16E-02	1.73E-02	1.44E-02	1.64E-02
2022	75	0.29	2.16	3.87	1.80E-02	0.35	0.29	0.22	0.25	1.98E-02	1.49E-01	2.66E-01	1.24E-03	2.42E-02	1.96E-02	1.53E-02	1.75E-02
2022	80	0.33	2.38	4.25	1.90E-02	0.39	0.32	0.25	0.28	2.26E-02	1.63E-01	2.92E-01	1.31E-03	2.70E-02	2.23E-02	1.68E-02	1.91E-02
2023	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	8.06E-03	3.03E+00	9.05E+00	4.61E-03	8.06E-03	7.40E-03	5.60E-01	6.38E-01
2023	1	0.13	6.25	10.37	3.70E-02	0.19	0.14	3.15	3.58	9.23E-03	4.58E-01	7.59E-01	2.71E-03	1.39E-02	1.00E-02	2.30E-01	2.62E-01
2023	2	0.13	6.25	10.37	3.70E-02	0.19	0.14	3.15	3.58	9.23E-03	4.58E-01	7.59E-01	2.71E-03	1.39E-02	1.00E-02	2.30E-01	2.62E-01
2023	3	0.13	6.25	10.37	3.70E-02	0.19	0.14	3.15	3.58	9.23E-03	4.58E-01	7.59E-01	2.71E-03	1.39E-02	1.00E-02	2.30E-01	2.62E-01
2023	4	0.13	6.25	10.37	3.70E-02	0.19	0.14	3.15	3.58	9.23E-03	4.58E-01	7.59E-01	2.71E-03	1.39E-02	1.00E-02	2.30E-01	2.62E-01
2023	5	0.13	6.25	10.37	3.70E-02	0.19	0.14	3.15	3.58	9.23E-03	4.58E-01	7.59E-01	2.71E-03	1.39E-02	1.00E-02	2.30E-01	2.62E-01
2023	10	0.12	3.75	7.77	3.00E-02	0.18	0.13	1.72	1.95	8.50E-03	2.74E-01	5.69E-01	2.20E-03	1.32E-02	9.30E-03	1.26E-01	1.43E-01
2023	15	0.11	2.15	5.92	2.50E-02	0.17	0.12	0.82	0.94	7.69E-03	1.57E-01	4.34E-01	1.83E-03	1.24E-02	8.64E-03	6.01E-02	6.85E-02
2023	20	0.10	1.49	4.83	2.10E-02	0.16	0.11	0.48	0.55	7.93E-03	1.09E-01	3.54E-01	1.54E-03	1.17E-02	8.06E-03	3.54E-02	4.03E-02
2023	25	0.09	1.42	4.34	2.00E-02	0.16	0.11	0.42	0.48	6.88E-03	1.04E-01	3.18E-01	1.46E-03	1.16E-02	7.84E-03	3.08E-02	3.52E-02
2023	30	0.10	1.37	3.93	1.80E-02	0.16	0.11	0.37	0.42	6.96E-03	1.00E-01	2.88E-01	1.32E-03	1.16E-02	7.91E-03	2.69E-02	3.06E-02
2023	35	0.10	1.35	3.60	1.70E-02	0.16	0.11	0.32	0.37	7.32E-03	9.87E-02	2.64E-01	1.25E-03	1.20E-02	8.28E-03	2.35E-02	2.67E-02
2023	40	0.11	1.35	3.34	1.70E-02	0.17	0.12	0.28	0.32	7.98E-03	9.91E-02	2.45E-01	1.25E-03	1.27E-02	8.86E-03	2.07E-02	2.35E-02
2023	45	0.12	1.38	3.17	1.60E-02	0.19	0.13	0.25	0.29	8.94E-03	1.01E-01	2.32E-01	1.17E-03	1.36E-02	9.74E-03	1.83E-02	2.09E-02
2023	50	0.14	1.44	3.07	1.60E-02	0.20	0.15	0.23	0.26	1.02E-02	1.05E-01	2.25E-01	1.17E-03	1.49E-02	1.09E-02	1.66E-02	1.88E-02
2023	55	0.16	1.52	3.05	1.60E-02	0.22	0.17	0.21	0.24	1.16E-02	1.11E-01	2.23E-01	1.17E-03	1.63E-02	1.22E-02	1.53E-02	1.74E-02
2023	60	0.18	1.63	3.10	1.60E-02	0.25	0.19	0.20	0.23	1.35E-02	1.19E-01	2.27E-01	1.17E-03	1.82E-02	1.39E-02	1.46E-02	1.67E-02
2023	65	0.21	1.76	3.24	1.60E-02	0.28	0.22	0.20	0.23	1.55E-02	1.29E-01	2.37E-01	1.17E-03	2.02E-02	1.58E-02	1.46E-02	1.66E-02
2023	70	0.24	1.92	3.45	1.70E-02	0.31	0.25	0.20	0.23	1.79E-02	1.41E-01	2.53E-01	1.25E-03	2.26E-02	1.79E-02	1.49E-02	1.71E-02
2023	75	0.28	2.11	3.75	1.80E-02	0.34	0.28	0.22	0.25	2.05E-02	1.54E-01	2.74E-01	1.32E-03	2.52E-02	2.04E-02	1.60E-02	1.82E-02
2023	80	0.32	2.32	4.12	1.90E-02	0.38	0.32	0.24	0.27	2.34E-02	1.70E-01	3.01E-01	1.39E-03	2.81E-02	2.31E-02	1.74E-02	1.98E-02
2024	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	7.89E-03	2.97E+00	8.86E+00	4.52E-03	7.89E-03	7.24E-03	5.49E-01	6.25E-01
2024	1	0.12	6.07	9.99	3.70E-02	0.19	0.13	3.06	3.48	8.75E-03	4.35E-01	7.16E-01	2.65E-03	1.33E-02	9.54E-03	2.19E-01	2.49E-01
2024	2	0.12	6.07	9.99	3.70E-02	0.19	0.13	3.06	3.48	8.75E-03	4.35E-01	7.16E-01	2.65E-03	1.33E-02	9.54E-03	2.19E-01	2.49E-01
2024	3	0.12	6.07	9.99	3.70E-02	0.19	0.13	3.06	3.48	8.75E-03	4.35E-01	7.16E-01	2.65E-03	1.33E-02	9.54E-03	2.19E-01	2.49E-01
2024	4	0.12	6.07	9.99	3.70E-02	0.19	0.13	3.06	3.48	8.75E-03	4.35E-01	7.16E-01	2.65E-03	1.33E-02	9.54E-03	2.19E-01	2.49E-01
2024	5	0.12	6.07	9.99	3.70E-02	0.19	0.13	3.06	3.48	8.75E-03	4.35E-01	7.16E-01	2.65E-03	1.33E-02	9.54E-03	2.19E-01	2.49E-01
2024	10	0.11	3.64	7.49	3.00E-02	0.18	0.12	1.67	1.90	8.03E-03	2.61E-01	5.37E-01	2.15E-03	1.26E-02	8.89E-03	1.19E-01	1.36E-01
2024	15	0.10	2.09	5.70	2.50E-02	0.17	0.11	0.80	0.91	7.32E-03	1.50E-01	4.09E-01	1.79E-03	1.19E-02	8.18E-03	5.72E-02	6.51E-02
2024	20	0.09	1.45	4.65	2.10E-02	0.16	0.11	0.47	0.53	6.67E-03	1.04E-01	3.34E-01	1.51E-03	1.13E-02	7.67E-03	3.36E-02	3.83E-02
2024	25	0.09	1.38	4.18	2.00E-02	0.16	0.10	0.41	0.47	6.53E-03	9.87E-02	3.00E-01	1.43E-03	1.11E-02	7.46E-03	2.93E-02	3.34E-02
2024	30	0.09	1.33	3.79	1.80E-02	0.16	0.11	0.36	0.41	6.60E-03	9.54E-02	2.72E-01	1.29E-03	1.12E-02	7.53E-03	2.56E-02	2.91E-02
2024	35	0.10	1.31	3.47	1.70E-02	0.16	0.11	0.31	0.36	6.96E-03	9.39E-02	2.49E-01	1.22E-03	1.15E-02	7.89E-03	2.24E-02	2.55E-02
2024	40	0.11	1.31	3.22	1.70E-02	0.17	0.12	0.27	0.31	7.53E-03	9.42E-02	2.31E-01	1.22E-03	1.21E-02	8.46E-03	1.97E-02	2.24E-02
2024	45	0.12	1.34	3.05	1.60E-02	0.18	0.13	0.24	0.28	8.46E-03	9.63E-02	2.19E-01	1.15E-03	1.31E-02	9.25E-03	1.74E-02	1.99E-02
2024	50	0.13	1.40	2.96	1.60E-02	0.20	0.14	0.22	0.25	9.61E-03	1.00E-01	2.12E-01	1.15E-03	1.42E-02	1.03E-02	1.58E-02	1.79E-02
2024	55	0.15	1.48	2.94	1.60E-02	0.22	0.16	0.20	0.23	1.10E-02	1.06E-01	2.11E-01	1.15E-03	1.56E-02	1.16E-02	1.46E-02	1.66E-02
2024	60	0.18	1.58	2.99	1.60E-02	0.24	0.18	0.19	0.22	1.27E-02	1.13E-01	2.14E-01	1.15E-03	1.73E-02	1.32E-02	1.39E-02	1.59E-02
2024	65	0.21	1.71	3.12	1.60E-02	0.27	0.21	0.19	0.22	1.47E-02	1.23E-01	2.24E-01	1.15E-03	1.93E-02	1.50E-02	1.38E-02	1.57E-02
2024	70	0.24	1.87	3.33	1.70E-02	0.30	0.24	0.20	0.23	1.69E-02	1.34E-01	2.39E-01	1.22E-03	2.15E-02	1.71E-02	1.42E-02	1.62E-02
2024	75	0.27	2.05	3.61	1.80E-02	0.33	0.27	0.21	0.24	1.94E-02	1.47E-01	2.59E-01	1.29E-03	2.40E-02	1.94E-02	1.51E-02	1.72E-02
2024	80	0.31	2.25	3.96	1.90E-02	0.37	0.31	0.23	0.26	2.22E-02	1.61E-01	2.84E-01	1.36E-03	2.68E-02	2.19E-02	1.66E-02	1.89E-02

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2025	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	7.23E-03	2.72E+00	8.12E+00	4.14E-03	7.23E-03	6.64E-03	5.03E-01	5.73E-01
2025	1	0.12	5.87	9.57	3.70E-02	0.18	0.13	2.96	3.36	7.69E-03	3.86E-01	6.29E-01	2.43E-03	1.19E-02	8.48E-03	1.94E-01	2.21E-01
2025	2	0.12	5.87	9.57	3.70E-02	0.18	0.13	2.96	3.36	7.69E-03	3.86E-01	6.29E-01	2.43E-03	1.19E-02	8.48E-03	1.94E-01	2.21E-01
2025	3	0.12	5.87	9.57	3.70E-02	0.18	0.13	2.96	3.36	7.69E-03	3.86E-01	6.29E-01	2.43E-03	1.19E-02	8.48E-03	1.94E-01	2.21E-01
2025	4	0.12	5.87	9.57	3.70E-02	0.18	0.13	2.96	3.36	7.69E-03	3.86E-01	6.29E-01	2.43E-03	1.19E-02	8.48E-03	1.94E-01	2.21E-01
2025	5	0.12	5.87	9.57	3.70E-02	0.18	0.13	2.96	3.36	7.69E-03	3.86E-01	6.29E-01	2.43E-03	1.19E-02	8.48E-03	1.94E-01	2.21E-01
2025	10	0.11	3.52	7.17	3.00E-02	0.17	0.12	1.61	1.83	7.04E-03	2.31E-01	4.72E-01	1.97E-03	1.12E-02	7.89E-03	1.06E-01	1.21E-01
2025	15	0.10	2.02	5.46	2.50E-02	0.16	0.11	0.77	0.88	6.45E-03	1.33E-01	3.59E-01	1.64E-03	1.07E-02	7.30E-03	5.07E-02	5.77E-02
2025	20	0.09	1.40	4.46	2.10E-02	0.15	0.10	0.45	0.52	5.85E-03	9.20E-02	2.93E-01	1.38E-03	1.01E-02	6.77E-03	2.98E-02	3.39E-02
2025	25	0.09	1.33	4.01	2.00E-02	0.15	0.10	0.40	0.45	5.72E-03	8.75E-02	2.64E-01	1.32E-03	9.93E-03	6.64E-03	2.60E-02	2.97E-02
2025	30	0.09	1.29	3.63	1.80E-02	0.15	0.10	0.35	0.39	5.79E-03	8.46E-02	2.39E-01	1.18E-03	1.00E-02	6.71E-03	2.27E-02	2.58E-02
2025	35	0.09	1.27	3.32	1.70E-02	0.16	0.11	0.30	0.34	6.12E-03	8.32E-02	2.18E-01	1.12E-03	1.03E-02	7.04E-03	1.98E-02	2.26E-02
2025	40	0.10	1.27	3.09	1.70E-02	0.17	0.11	0.27	0.30	6.64E-03	8.35E-02	2.03E-01	1.12E-03	1.09E-02	7.50E-03	1.74E-02	1.98E-02
2025	45	0.11	1.30	2.92	1.60E-02	0.18	0.13	0.24	0.27	7.43E-03	8.54E-02	1.92E-01	1.05E-03	1.16E-02	8.22E-03	1.55E-02	1.76E-02
2025	50	0.13	1.35	2.83	1.60E-02	0.19	0.14	0.21	0.24	8.48E-03	8.88E-02	1.86E-01	1.05E-03	1.27E-02	9.14E-03	1.39E-02	1.59E-02
2025	55	0.15	1.43	2.81	1.60E-02	0.21	0.16	0.20	0.22	9.73E-03	9.38E-02	1.85E-01	1.05E-03	1.39E-02	1.03E-02	1.30E-02	1.47E-02
2025	60	0.17	1.53	2.87	1.60E-02	0.23	0.18	0.19	0.21	1.12E-02	1.00E-01	1.88E-01	1.05E-03	1.54E-02	1.17E-02	1.24E-02	1.41E-02
2025	65	0.20	1.65	2.99	1.60E-02	0.26	0.20	0.19	0.21	1.30E-02	1.09E-01	1.97E-01	1.05E-03	1.72E-02	1.33E-02	1.22E-02	1.39E-02
2025	70	0.23	1.80	3.19	1.70E-02	0.29	0.23	0.19	0.22	1.49E-02	1.19E-01	2.10E-01	1.12E-03	1.91E-02	1.51E-02	1.26E-02	1.43E-02
2025	75	0.26	1.98	3.46	1.80E-02	0.32	0.26	0.20	0.23	1.71E-02	1.30E-01	2.27E-01	1.18E-03	2.13E-02	1.71E-02	1.34E-02	1.53E-02
2025	80	0.30	2.18	3.80	1.90E-02	0.36	0.29	0.22	0.26	1.95E-02	1.43E-01	2.50E-01	1.25E-03	2.37E-02	1.93E-02	1.47E-02	1.68E-02
2026	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	6.20E-03	2.34E+00	6.96E+00	3.55E-03	6.20E-03	5.69E-03	4.31E-01	4.91E-01
2026	1	0.11	5.65	9.11	3.70E-02	0.18	0.12	2.84	3.24	6.31E-03	3.18E-01	5.13E-01	2.09E-03	9.92E-03	6.99E-03	1.60E-01	1.83E-01
2026	2	0.11	5.65	9.11	3.70E-02	0.18	0.12	2.84	3.24	6.31E-03	3.18E-01	5.13E-01	2.09E-03	9.92E-03	6.99E-03	1.60E-01	1.83E-01
2026	3	0.11	5.65	9.11	3.70E-02	0.18	0.12	2.84	3.24	6.31E-03	3.18E-01	5.13E-01	2.09E-03	9.92E-03	6.99E-03	1.60E-01	1.83E-01
2026	4	0.11	5.65	9.11	3.70E-02	0.18	0.12	2.84	3.24	6.31E-03	3.18E-01	5.13E-01	2.09E-03	9.92E-03	6.99E-03	1.60E-01	1.83E-01
2026	5	0.11	5.65	9.11	3.70E-02	0.18	0.12	2.84	3.24	6.31E-03	3.18E-01	5.13E-01	2.09E-03	9.92E-03	6.99E-03	1.60E-01	1.83E-01
2026	10	0.10	3.38	6.83	3.00E-02	0.17	0.12	1.55	1.77	5.81E-03	1.91E-01	3.85E-01	1.69E-03	9.41E-03	6.48E-03	8.74E-02	9.95E-02
2026	15	0.09	1.94	5.20	2.50E-02	0.16	0.11	0.74	0.85	5.24E-03	1.09E-01	2.93E-01	1.41E-03	8.85E-03	6.03E-03	4.18E-02	4.76E-02
2026	20	0.09	1.35	4.24	2.10E-02	0.15	0.10	0.44	0.50	4.85E-03	7.59E-02	2.39E-01	1.18E-03	8.46E-03	5.64E-03	2.46E-02	2.80E-02
2026	25	0.08	1.28	3.81	2.00E-02	0.15	0.10	0.38	0.43	4.68E-03	7.22E-02	2.15E-01	1.13E-03	8.29E-03	5.52E-03	2.15E-02	2.45E-02
2026	30	0.08	1.24	3.45	1.80E-02	0.15	0.10	0.33	0.38	4.74E-03	6.97E-02	1.95E-01	1.01E-03	8.34E-03	5.58E-03	1.87E-02	2.13E-02
2026	35	0.09	1.22	3.16	1.70E-02	0.15	0.10	0.29	0.33	5.02E-03	6.87E-02	1.78E-01	9.58E-04	8.62E-03	5.81E-03	1.63E-02	1.86E-02
2026	40	0.10	1.22	2.94	1.70E-02	0.16	0.11	0.26	0.29	5.47E-03	6.89E-02	1.66E-01	9.58E-04	9.08E-03	6.20E-03	1.44E-02	1.63E-02
2026	45	0.11	1.25	2.78	1.60E-02	0.17	0.12	0.23	0.26	6.09E-03	7.04E-02	1.57E-01	9.02E-04	9.70E-03	6.82E-03	1.27E-02	1.45E-02
2026	50	0.12	1.30	2.69	1.60E-02	0.19	0.13	0.20	0.23	6.93E-03	7.33E-02	1.52E-01	9.02E-04	1.05E-02	7.55E-03	1.15E-02	1.31E-02
2026	55	0.14	1.37	2.68	1.60E-02	0.21	0.15	0.19	0.22	7.95E-03	7.75E-02	1.51E-01	9.02E-04	1.16E-02	8.51E-03	1.07E-02	1.22E-02
2026	60	0.16	1.47	2.73	1.60E-02	0.23	0.17	0.18	0.21	9.19E-03	8.29E-02	1.54E-01	9.02E-04	1.28E-02	9.64E-03	1.02E-02	1.16E-02
2026	65	0.19	1.59	2.85	1.60E-02	0.25	0.19	0.18	0.20	1.06E-02	8.97E-02	1.60E-01	9.02E-04	1.42E-02	1.09E-02	1.01E-02	1.15E-02
2026	70	0.22	1.74	3.03	1.70E-02	0.28	0.22	0.19	0.21	1.22E-02	9.79E-02	1.71E-01	9.58E-04	1.58E-02	1.24E-02	1.04E-02	1.18E-02
2026	75	0.25	1.90	3.29	1.80E-02	0.31	0.25	0.20	0.22	1.40E-02	1.07E-01	1.85E-01	1.01E-03	1.76E-02	1.40E-02	1.11E-02	1.26E-02
2026	80	0.28	2.09	3.61	1.90E-02	0.35	0.28	0.22	0.25	1.60E-02	1.18E-01	2.04E-01	1.07E-03	1.96E-02	1.59E-02	1.21E-02	1.38E-02
2027	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	5.05E-03	1.90E+00	5.67E+00	2.89E-03	5.05E-03	4.64E-03	3.51E-01	4.00E-01
2027	1	0.11	5.40	8.60	3.70E-02	0.17	0.12	2.72	3.10	4.86E-03	2.48E-01	3.95E-01	1.70E-03	7.80E-03	5.46E-03	1.25E-01	1.42E-01
2027	2	0.11	5.40	8.60	3.70E-02	0.17	0.12	2.72	3.10	4.86E-03	2.48E-01	3.95E-01	1.70E-03	7.80E-03	5.46E-03	1.25E-01	1.42E-01

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2027	3	0.11	5.40	8.60	3.70E-02	0.17	0.12	2.72	3.10	4.86E-03	2.48E-01	3.95E-01	1.70E-03	7.80E-03	5.46E-03	1.25E-01	1.42E-01
2027	4	0.11	5.40	8.60	3.70E-02	0.17	0.12	2.72	3.10	4.86E-03	2.48E-01	3.95E-01	1.70E-03	7.80E-03	5.46E-03	1.25E-01	1.42E-01
2027	5	0.11	5.40	8.60	3.70E-02	0.17	0.12	2.72	3.10	4.86E-03	2.48E-01	3.95E-01	1.70E-03	7.80E-03	5.46E-03	1.25E-01	1.42E-01
2027	10	0.10	3.24	6.45	3.00E-02	0.16	0.11	1.49	1.69	4.45E-03	1.49E-01	2.96E-01	1.38E-03	7.39E-03	5.09E-03	6.82E-02	7.76E-02
2027	15	0.09	1.86	4.91	2.50E-02	0.15	0.10	0.71	0.81	4.08E-03	8.52E-02	2.25E-01	1.15E-03	7.02E-03	4.73E-03	3.26E-02	3.71E-02
2027	20	0.08	1.29	4.01	2.10E-02	0.15	0.10	0.42	0.48	3.72E-03	5.92E-02	1.84E-01	9.64E-04	6.65E-03	4.41E-03	1.92E-02	2.18E-02
2027	25	0.08	1.23	3.60	2.00E-02	0.14	0.09	0.37	0.42	3.63E-03	5.62E-02	1.65E-01	9.18E-04	6.56E-03	4.31E-03	1.68E-02	1.90E-02
2027	30	0.08	1.18	3.26	1.80E-02	0.14	0.10	0.32	0.36	3.67E-03	5.43E-02	1.50E-01	8.26E-04	6.61E-03	4.36E-03	1.46E-02	1.66E-02
2027	35	0.08	1.17	2.99	1.70E-02	0.15	0.10	0.28	0.32	3.86E-03	5.35E-02	1.37E-01	7.80E-04	6.79E-03	4.54E-03	1.28E-02	1.45E-02
2027	40	0.09	1.17	2.77	1.70E-02	0.16	0.11	0.24	0.28	4.22E-03	5.37E-02	1.27E-01	7.80E-04	7.16E-03	4.86E-03	1.12E-02	1.28E-02
2027	45	0.10	1.20	2.63	1.60E-02	0.17	0.12	0.22	0.25	4.73E-03	5.49E-02	1.21E-01	7.34E-04	7.66E-03	5.32E-03	9.96E-03	1.13E-02
2027	50	0.12	1.24	2.55	1.60E-02	0.18	0.13	0.20	0.22	5.37E-03	5.71E-02	1.17E-01	7.34E-04	8.31E-03	5.87E-03	9.00E-03	1.02E-02
2027	55	0.13	1.32	2.53	1.60E-02	0.20	0.14	0.18	0.21	6.15E-03	6.04E-02	1.16E-01	7.34E-04	9.09E-03	6.61E-03	8.31E-03	9.45E-03
2027	60	0.16	1.41	2.58	1.60E-02	0.22	0.16	0.17	0.20	7.11E-03	6.46E-02	1.18E-01	7.34E-04	1.01E-02	7.48E-03	7.94E-03	9.04E-03
2027	65	0.18	1.52	2.69	1.60E-02	0.24	0.19	0.17	0.20	8.17E-03	6.99E-02	1.23E-01	7.34E-04	1.11E-02	8.49E-03	7.89E-03	9.00E-03
2027	70	0.21	1.66	2.87	1.70E-02	0.27	0.21	0.18	0.20	9.41E-03	7.62E-02	1.31E-01	7.80E-04	1.23E-02	9.64E-03	8.12E-03	9.23E-03
2027	75	0.24	1.82	3.11	1.80E-02	0.30	0.24	0.19	0.21	1.08E-02	8.36E-02	1.43E-01	8.26E-04	1.38E-02	1.09E-02	8.63E-03	9.82E-03
2027	80	0.27	2.00	3.41	1.90E-02	0.33	0.27	0.21	0.24	1.23E-02	9.20E-02	1.57E-01	8.72E-04	1.53E-02	1.23E-02	9.45E-03	1.08E-02
2028	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	3.95E-03	1.49E+00	4.44E+00	2.26E-03	3.95E-03	3.63E-03	2.75E-01	3.13E-01
2028	1	0.10	5.14	8.05	3.70E-02	0.16	0.11	2.59	2.95	3.59E-03	1.85E-01	2.89E-01	1.33E-03	5.89E-03	4.06E-03	9.30E-02	1.06E-01
2028	2	0.10	5.14	8.05	3.70E-02	0.16	0.11	2.59	2.95	3.59E-03	1.85E-01	2.89E-01	1.33E-03	5.89E-03	4.06E-03	9.30E-02	1.06E-01
2028	3	0.10	5.14	8.05	3.70E-02	0.16	0.11	2.59	2.95	3.59E-03	1.85E-01	2.89E-01	1.33E-03	5.89E-03	4.06E-03	9.30E-02	1.06E-01
2028	4	0.10	5.14	8.05	3.70E-02	0.16	0.11	2.59	2.95	3.59E-03	1.85E-01	2.89E-01	1.33E-03	5.89E-03	4.06E-03	9.30E-02	1.06E-01
2028	5	0.10	5.14	8.05	3.70E-02	0.16	0.11	2.59	2.95	3.59E-03	1.85E-01	2.89E-01	1.33E-03	5.89E-03	4.06E-03	9.30E-02	1.06E-01
2028	10	0.09	3.08	6.04	3.00E-02	0.16	0.11	1.41	1.61	3.30E-03	1.11E-01	2.17E-01	1.08E-03	5.60E-03	3.77E-03	5.07E-02	5.77E-02
2028	15	0.08	1.77	4.60	2.50E-02	0.15	0.10	0.68	0.77	2.98E-03	6.34E-02	1.65E-01	8.98E-04	5.28E-03	3.52E-03	2.43E-02	2.77E-02
2028	20	0.08	1.23	3.75	2.10E-02	0.14	0.09	0.40	0.45	2.73E-03	4.40E-02	1.35E-01	7.54E-04	5.03E-03	3.27E-03	1.43E-02	1.63E-02
2028	25	0.07	1.17	3.37	2.00E-02	0.14	0.09	0.35	0.40	2.66E-03	4.19E-02	1.21E-01	7.18E-04	4.96E-03	3.20E-03	1.25E-02	1.42E-02
2028	30	0.08	1.13	3.05	1.80E-02	0.14	0.09	0.30	0.34	2.69E-03	4.05E-02	1.10E-01	6.46E-04	4.99E-03	3.23E-03	1.09E-02	1.24E-02
2028	35	0.08	1.11	2.80	1.70E-02	0.14	0.09	0.26	0.30	2.87E-03	3.98E-02	1.00E-01	6.10E-04	5.17E-03	3.38E-03	9.48E-03	1.08E-02
2028	40	0.09	1.11	2.60	1.70E-02	0.15	0.10	0.23	0.26	3.12E-03	4.00E-02	9.33E-02	6.10E-04	5.42E-03	3.63E-03	8.33E-03	9.48E-03
2028	45	0.10	1.14	2.46	1.60E-02	0.16	0.11	0.21	0.24	3.48E-03	4.08E-02	8.83E-02	5.75E-04	5.78E-03	3.95E-03	7.40E-03	8.44E-03
2028	50	0.11	1.18	2.38	1.60E-02	0.17	0.12	0.19	0.21	3.95E-03	4.25E-02	8.55E-02	5.75E-04	6.25E-03	4.38E-03	6.68E-03	7.61E-03
2028	55	0.13	1.25	2.37	1.60E-02	0.19	0.14	0.17	0.20	4.52E-03	4.49E-02	8.50E-02	5.75E-04	6.82E-03	4.92E-03	6.18E-03	7.04E-03
2028	60	0.15	1.34	2.41	1.60E-02	0.21	0.16	0.17	0.19	5.24E-03	4.81E-02	8.66E-02	5.75E-04	7.54E-03	5.57E-03	5.93E-03	6.75E-03
2028	65	0.17	1.45	2.52	1.60E-02	0.23	0.18	0.16	0.19	6.03E-03	5.20E-02	9.04E-02	5.75E-04	8.33E-03	6.32E-03	5.85E-03	6.68E-03
2028	70	0.19	1.58	2.68	1.70E-02	0.26	0.20	0.17	0.19	6.97E-03	5.67E-02	9.63E-02	6.10E-04	9.26E-03	7.15E-03	6.03E-03	6.89E-03
2028	75	0.22	1.73	2.91	1.80E-02	0.29	0.23	0.18	0.20	7.97E-03	6.22E-02	1.04E-01	6.46E-04	1.03E-02	8.08E-03	6.43E-03	7.33E-03
2028	80	0.25	1.91	3.20	1.90E-02	0.32	0.25	0.20	0.22	9.12E-03	6.84E-02	1.15E-01	6.82E-04	1.14E-02	9.12E-03	7.04E-03	8.01E-03
2029	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	2.84E-03	1.07E+00	3.19E+00	1.63E-03	2.84E-03	2.61E-03	1.98E-01	2.25E-01
2029	1	0.09	4.85	7.45	3.70E-02	0.16	0.11	2.45	2.79	2.43E-03	1.25E-01	1.93E-01	9.56E-04	4.08E-03	2.76E-03	6.33E-02	7.20E-02
2029	2	0.09	4.85	7.45	3.70E-02	0.16	0.11	2.45	2.79	2.43E-03	1.25E-01	1.93E-01	9.56E-04	4.08E-03	2.76E-03	6.33E-02	7.20E-02
2029	3	0.09	4.85	7.45	3.70E-02	0.16	0.11	2.45	2.79	2.43E-03	1.25E-01	1.93E-01	9.56E-04	4.08E-03	2.76E-03	6.33E-02	7.20E-02
2029	4	0.09	4.85	7.45	3.70E-02	0.16	0.11	2.45	2.79	2.43E-03	1.25E-01	1.93E-01	9.56E-04	4.08E-03	2.76E-03	6.33E-02	7.20E-02
2029	5	0.09	4.85	7.45	3.70E-02	0.16	0.11	2.45	2.79	2.43E-03	1.25E-01	1.93E-01	9.56E-04	4.08E-03	2.76E-03	6.33E-02	7.20E-02

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2029	10	0.09	2.91	5.59	3.00E-02	0.15	0.10	1.34	1.52	2.22E-03	7.52E-02	1.44E-01	7.75E-04	3.88E-03	2.58E-03	3.45E-02	3.93E-02
2029	15	0.08	1.67	4.26	2.50E-02	0.14	0.09	0.64	0.73	2.02E-03	4.31E-02	1.10E-01	6.46E-04	3.67E-03	2.40E-03	1.65E-02	1.88E-02
2029	20	0.07	1.16	3.47	2.10E-02	0.14	0.09	0.38	0.43	1.83E-03	2.99E-02	8.98E-02	5.43E-04	3.49E-03	2.25E-03	9.72E-03	1.11E-02
2029	25	0.07	1.10	3.12	2.00E-02	0.13	0.09	0.33	0.37	1.78E-03	2.84E-02	8.07E-02	5.17E-04	3.44E-03	2.20E-03	8.48E-03	9.64E-03
2029	30	0.07	1.06	2.83	1.80E-02	0.13	0.09	0.29	0.33	1.81E-03	2.75E-02	7.30E-02	4.65E-04	3.46E-03	2.22E-03	7.39E-03	8.40E-03
2029	35	0.07	1.05	2.59	1.70E-02	0.14	0.09	0.25	0.28	1.91E-03	2.71E-02	6.68E-02	4.39E-04	3.57E-03	2.30E-03	6.46E-03	7.34E-03
2029	40	0.08	1.05	2.40	1.70E-02	0.15	0.10	0.22	0.25	2.09E-03	2.72E-02	6.21E-02	4.39E-04	3.75E-03	2.45E-03	5.66E-03	6.46E-03
2029	45	0.09	1.07	2.28	1.60E-02	0.15	0.10	0.20	0.22	2.33E-03	2.78E-02	5.88E-02	4.13E-04	3.98E-03	2.69E-03	5.04E-03	5.74E-03
2029	50	0.10	1.12	2.21	1.60E-02	0.17	0.12	0.18	0.20	2.66E-03	2.89E-02	5.70E-02	4.13E-04	4.32E-03	2.97E-03	4.55E-03	5.17E-03
2029	55	0.12	1.18	2.19	1.60E-02	0.18	0.13	0.16	0.19	3.05E-03	3.05E-02	5.66E-02	4.13E-04	4.70E-03	3.33E-03	4.21E-03	4.81E-03
2029	60	0.14	1.27	2.23	1.60E-02	0.20	0.15	0.16	0.18	3.51E-03	3.27E-02	5.77E-02	4.13E-04	5.17E-03	3.77E-03	4.03E-03	4.57E-03
2029	65	0.16	1.37	2.33	1.60E-02	0.22	0.17	0.15	0.18	4.06E-03	3.54E-02	6.02E-02	4.13E-04	5.71E-03	4.26E-03	3.98E-03	4.55E-03
2029	70	0.18	1.49	2.48	1.70E-02	0.25	0.19	0.16	0.18	4.68E-03	3.86E-02	6.42E-02	4.39E-04	6.33E-03	4.83E-03	4.11E-03	4.68E-03
2029	75	0.21	1.64	2.69	1.80E-02	0.27	0.21	0.17	0.19	5.35E-03	4.23E-02	6.96E-02	4.65E-04	7.00E-03	5.48E-03	4.37E-03	4.99E-03
2029	80	0.24	1.80	2.96	1.90E-02	0.30	0.24	0.19	0.21	6.12E-03	4.65E-02	7.65E-02	4.91E-04	7.78E-03	6.18E-03	4.78E-03	5.45E-03
2030	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	1.78E-03	6.72E-01	2.00E+00	1.02E-03	1.78E-03	1.64E-03	1.24E-01	1.41E-01
2030	1	0.09	4.55	6.81	3.70E-02	0.15	0.10	2.29	2.61	1.39E-03	7.37E-02	1.10E-01	6.00E-04	2.43E-03	1.62E-03	3.72E-02	4.24E-02
2030	2	0.09	4.55	6.81	3.70E-02	0.15	0.10	2.29	2.61	1.39E-03	7.37E-02	1.10E-01	6.00E-04	2.43E-03	1.62E-03	3.72E-02	4.24E-02
2030	3	0.09	4.55	6.81	3.70E-02	0.15	0.10	2.29	2.61	1.39E-03	7.37E-02	1.10E-01	6.00E-04	2.43E-03	1.62E-03	3.72E-02	4.24E-02
2030	4	0.09	4.55	6.81	3.70E-02	0.15	0.10	2.29	2.61	1.39E-03	7.37E-02	1.10E-01	6.00E-04	2.43E-03	1.62E-03	3.72E-02	4.24E-02
2030	5	0.09	4.55	6.81	3.70E-02	0.15	0.10	2.29	2.61	1.39E-03	7.37E-02	1.10E-01	6.00E-04	2.43E-03	1.62E-03	3.72E-02	4.24E-02
2030	10	0.08	2.73	5.11	3.00E-02	0.14	0.09	1.25	1.42	1.28E-03	4.42E-02	8.28E-02	4.86E-04	2.32E-03	1.52E-03	2.03E-02	2.31E-02
2030	15	0.07	1.56	3.89	2.50E-02	0.14	0.09	0.60	0.68	1.17E-03	2.53E-02	6.31E-02	4.05E-04	2.21E-03	1.41E-03	9.71E-03	1.10E-02
2030	20	0.07	1.08	3.18	2.10E-02	0.13	0.08	0.35	0.40	1.07E-03	1.76E-02	5.15E-02	3.41E-04	2.11E-03	1.33E-03	5.71E-03	6.50E-03
2030	25	0.06	1.03	2.85	2.00E-02	0.13	0.08	0.31	0.35	1.04E-03	1.67E-02	4.63E-02	3.24E-04	2.08E-03	1.30E-03	4.98E-03	5.68E-03
2030	30	0.07	1.00	2.58	1.80E-02	0.13	0.08	0.27	0.31	1.05E-03	1.62E-02	4.19E-02	2.92E-04	2.09E-03	1.31E-03	4.35E-03	4.95E-03
2030	35	0.07	0.98	2.36	1.70E-02	0.13	0.08	0.23	0.27	1.10E-03	1.59E-02	3.83E-02	2.76E-04	2.14E-03	1.36E-03	3.79E-03	4.31E-03
2030	40	0.08	0.98	2.20	1.70E-02	0.14	0.09	0.21	0.23	1.22E-03	1.60E-02	3.56E-02	2.76E-04	2.25E-03	1.46E-03	3.32E-03	3.79E-03
2030	45	0.08	1.01	2.08	1.60E-02	0.15	0.10	0.18	0.21	1.35E-03	1.63E-02	3.37E-02	2.59E-04	2.38E-03	1.59E-03	2.95E-03	3.37E-03
2030	50	0.10	1.05	2.02	1.60E-02	0.16	0.11	0.17	0.19	1.54E-03	1.70E-02	3.27E-02	2.59E-04	2.58E-03	1.75E-03	2.68E-03	3.05E-03
2030	55	0.11	1.11	2.00	1.60E-02	0.17	0.12	0.15	0.17	1.77E-03	1.79E-02	3.25E-02	2.59E-04	2.81E-03	1.96E-03	2.48E-03	2.82E-03
2030	60	0.13	1.19	2.04	1.60E-02	0.19	0.14	0.15	0.17	2.03E-03	1.92E-02	3.31E-02	2.59E-04	3.06E-03	2.21E-03	2.37E-03	2.69E-03
2030	65	0.15	1.28	2.13	1.60E-02	0.21	0.15	0.15	0.17	2.35E-03	2.08E-02	3.45E-02	2.59E-04	3.39E-03	2.50E-03	2.35E-03	2.68E-03
2030	70	0.17	1.40	2.27	1.70E-02	0.23	0.17	0.15	0.17	2.71E-03	2.27E-02	3.68E-02	2.76E-04	3.75E-03	2.82E-03	2.42E-03	2.76E-03
2030	75	0.19	1.53	2.46	1.80E-02	0.26	0.20	0.16	0.18	3.10E-03	2.49E-02	3.99E-02	2.92E-04	4.13E-03	3.19E-03	2.58E-03	2.93E-03
2030	80	0.22	1.69	2.70	1.90E-02	0.28	0.22	0.17	0.20	3.53E-03	2.73E-02	4.38E-02	3.08E-04	4.57E-03	3.60E-03	2.82E-03	3.21E-03
2031	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	9.75E-04	3.67E-01	1.09E+00	5.58E-04	9.75E-04	8.95E-04	6.78E-02	7.72E-02
2031	1	0.08	4.22	6.13	3.70E-02	0.14	0.09	2.13	2.43	7.00E-04	3.74E-02	5.43E-02	3.28E-04	1.27E-03	8.24E-04	1.89E-02	2.15E-02
2031	2	0.08	4.22	6.13	3.70E-02	0.14	0.09	2.13	2.43	7.00E-04	3.74E-02	5.43E-02	3.28E-04	1.27E-03	8.24E-04	1.89E-02	2.15E-02
2031	3	0.08	4.22	6.13	3.70E-02	0.14	0.09	2.13	2.43	7.00E-04	3.74E-02	5.43E-02	3.28E-04	1.27E-03	8.24E-04	1.89E-02	2.15E-02
2031	4	0.08	4.22	6.13	3.70E-02	0.14	0.09	2.13	2.43	7.00E-04	3.74E-02	5.43E-02	3.28E-04	1.27E-03	8.24E-04	1.89E-02	2.15E-02
2031	5	0.08	4.22	6.13	3.70E-02	0.14	0.09	2.13	2.43	7.00E-04	3.74E-02	5.43E-02	3.28E-04	1.27E-03	8.24E-04	1.89E-02	2.15E-02
2031	10	0.07	2.53	4.60	3.00E-02	0.14	0.09	1.16	1.32	6.38E-04	2.24E-02	4.07E-02	2.66E-04	1.21E-03	7.71E-04	1.03E-02	1.17E-02
2031	15	0.07	1.45	3.50	2.50E-02	0.13	0.08	0.56	0.63	5.76E-04	1.28E-02	3.10E-02	2.22E-04	1.14E-03	7.18E-04	4.93E-03	5.61E-03
2031	20	0.06	1.01	2.86	2.10E-02	0.12	0.08	0.33	0.37	5.32E-04	8.97E-03	2.53E-02	1.86E-04	1.10E-03	6.73E-04	2.90E-03	3.30E-03

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2031	25	0.06	0.96	2.57	2.00E-02	0.12	0.08	0.29	0.33	5.14E-04	8.48E-03	2.27E-02	1.77E-04	1.08E-03	6.65E-04	2.53E-03	2.88E-03
2031	30	0.06	0.93	2.32	1.80E-02	0.12	0.08	0.25	0.28	5.23E-04	8.20E-03	2.06E-02	1.60E-04	1.09E-03	6.65E-04	2.21E-03	2.51E-03
2031	35	0.06	0.91	2.13	1.70E-02	0.13	0.08	0.22	0.25	5.49E-04	8.06E-03	1.88E-02	1.51E-04	1.12E-03	6.91E-04	1.92E-03	2.19E-03
2031	40	0.07	0.91	1.98	1.70E-02	0.13	0.08	0.19	0.22	6.03E-04	8.09E-03	1.75E-02	1.51E-04	1.17E-03	7.44E-04	1.69E-03	1.92E-03
2031	45	0.08	0.93	1.87	1.60E-02	0.14	0.09	0.17	0.19	6.73E-04	8.28E-03	1.66E-02	1.42E-04	1.24E-03	8.06E-04	1.50E-03	1.71E-03
2031	50	0.09	0.97	1.81	1.60E-02	0.15	0.10	0.15	0.17	7.62E-04	8.61E-03	1.61E-02	1.42E-04	1.33E-03	8.86E-04	1.36E-03	1.54E-03
2031	55	0.10	1.03	1.80	1.60E-02	0.16	0.11	0.14	0.16	8.77E-04	9.10E-03	1.60E-02	1.42E-04	1.44E-03	9.93E-04	1.26E-03	1.43E-03
2031	60	0.11	1.10	1.84	1.60E-02	0.18	0.13	0.14	0.15	1.01E-03	9.75E-03	1.63E-02	1.42E-04	1.58E-03	1.12E-03	1.21E-03	1.36E-03
2031	65	0.13	1.19	1.92	1.60E-02	0.20	0.14	0.13	0.15	1.17E-03	1.05E-02	1.70E-02	1.42E-04	1.74E-03	1.26E-03	1.19E-03	1.36E-03
2031	70	0.15	1.30	2.04	1.70E-02	0.22	0.16	0.14	0.16	1.35E-03	1.15E-02	1.81E-02	1.51E-04	1.91E-03	1.43E-03	1.22E-03	1.39E-03
2031	75	0.17	1.42	2.21	1.80E-02	0.24	0.18	0.15	0.17	1.54E-03	1.26E-02	1.96E-02	1.60E-04	2.11E-03	1.60E-03	1.30E-03	1.49E-03
2031	80	0.20	1.57	2.43	1.90E-02	0.26	0.20	0.16	0.18	1.76E-03	1.39E-02	2.16E-02	1.68E-04	2.33E-03	1.81E-03	1.43E-03	1.63E-03
2032	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	6.76E-04	2.55E-01	7.60E-01	3.87E-04	6.76E-04	6.21E-04	4.71E-02	5.36E-02
2032	1	0.07	3.88	5.41	3.70E-02	0.14	0.09	1.96	2.23	4.37E-04	2.38E-02	3.33E-02	2.28E-04	8.30E-04	5.29E-04	1.20E-02	1.37E-02
2032	2	0.07	3.88	5.41	3.70E-02	0.14	0.09	1.96	2.23	4.37E-04	2.38E-02	3.33E-02	2.28E-04	8.30E-04	5.29E-04	1.20E-02	1.37E-02
2032	3	0.07	3.88	5.41	3.70E-02	0.14	0.09	1.96	2.23	4.37E-04	2.38E-02	3.33E-02	2.28E-04	8.30E-04	5.29E-04	1.20E-02	1.37E-02
2032	4	0.07	3.88	5.41	3.70E-02	0.14	0.09	1.96	2.23	4.37E-04	2.38E-02	3.33E-02	2.28E-04	8.30E-04	5.29E-04	1.20E-02	1.37E-02
2032	5	0.07	3.88	5.41	3.70E-02	0.14	0.09	1.96	2.23	4.37E-04	2.38E-02	3.33E-02	2.28E-04	8.30E-04	5.29E-04	1.20E-02	1.37E-02
2032	10	0.07	2.32	4.06	3.00E-02	0.13	0.08	1.07	1.22	4.00E-04	1.43E-02	2.49E-02	1.84E-04	7.93E-04	4.92E-04	6.56E-03	7.47E-03
2032	15	0.06	1.33	3.09	2.50E-02	0.12	0.08	0.51	0.58	3.63E-04	8.19E-03	1.90E-02	1.54E-04	7.56E-04	4.61E-04	3.14E-03	3.57E-03
2032	20	0.05	0.92	2.52	2.10E-02	0.12	0.07	0.30	0.34	3.32E-04	5.68E-03	1.55E-02	1.29E-04	7.26E-04	4.37E-04	1.84E-03	2.10E-03
2032	25	0.05	0.88	2.27	2.00E-02	0.12	0.07	0.26	0.30	3.20E-04	5.40E-03	1.39E-02	1.23E-04	7.13E-04	4.24E-04	1.61E-03	1.83E-03
2032	30	0.05	0.85	2.05	1.80E-02	0.12	0.07	0.23	0.26	3.26E-04	5.22E-03	1.26E-02	1.11E-04	7.19E-04	4.30E-04	1.41E-03	1.60E-03
2032	35	0.06	0.84	1.88	1.70E-02	0.12	0.07	0.20	0.23	3.44E-04	5.14E-03	1.15E-02	1.05E-04	7.38E-04	4.43E-04	1.23E-03	1.40E-03
2032	40	0.06	0.84	1.75	1.70E-02	0.13	0.08	0.18	0.20	3.75E-04	5.16E-03	1.07E-02	1.05E-04	7.69E-04	4.73E-04	1.08E-03	1.23E-03
2032	45	0.07	0.86	1.65	1.60E-02	0.13	0.08	0.16	0.18	4.18E-04	5.28E-03	1.02E-02	9.84E-05	8.12E-04	5.17E-04	9.59E-04	1.09E-03
2032	50	0.08	0.89	1.60	1.60E-02	0.14	0.09	0.14	0.16	4.73E-04	5.48E-03	9.84E-03	9.84E-05	8.67E-04	5.66E-04	8.67E-04	9.84E-04
2032	55	0.09	0.94	1.59	1.60E-02	0.15	0.10	0.13	0.15	5.47E-04	5.80E-03	9.78E-03	9.84E-05	9.41E-04	6.33E-04	7.99E-04	9.10E-04
2032	60	0.10	1.01	1.62	1.60E-02	0.17	0.12	0.13	0.14	6.33E-04	6.21E-03	9.96E-03	9.84E-05	1.03E-03	7.07E-04	7.69E-04	8.73E-04
2032	65	0.12	1.09	1.69	1.60E-02	0.18	0.13	0.12	0.14	7.26E-04	6.72E-03	1.04E-02	9.84E-05	1.12E-03	7.99E-04	7.56E-04	8.67E-04
2032	70	0.14	1.19	1.80	1.70E-02	0.20	0.15	0.13	0.15	8.36E-04	7.32E-03	1.11E-02	1.05E-04	1.23E-03	8.98E-04	7.81E-04	8.92E-04
2032	75	0.16	1.31	1.95	1.80E-02	0.22	0.17	0.14	0.15	9.59E-04	8.03E-03	1.20E-02	1.11E-04	1.35E-03	1.01E-03	8.30E-04	9.47E-04
2032	80	0.18	1.44	2.15	1.90E-02	0.24	0.19	0.15	0.17	1.09E-03	8.84E-03	1.32E-02	1.17E-04	1.49E-03	1.14E-03	9.10E-04	1.04E-03
2033	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	6.27E-04	2.36E-01	7.05E-01	3.59E-04	6.27E-04	5.76E-04	4.36E-02	4.97E-02
2033	1	0.06	3.52	4.67	3.70E-02	0.13	0.08	1.78	2.03	3.54E-04	2.01E-02	2.66E-02	2.11E-04	7.19E-04	4.45E-04	1.01E-02	1.16E-02
2033	2	0.06	3.52	4.67	3.70E-02	0.13	0.08	1.78	2.03	3.54E-04	2.01E-02	2.66E-02	2.11E-04	7.19E-04	4.45E-04	1.01E-02	1.16E-02
2033	3	0.06	3.52	4.67	3.70E-02	0.13	0.08	1.78	2.03	3.54E-04	2.01E-02	2.66E-02	2.11E-04	7.19E-04	4.45E-04	1.01E-02	1.16E-02
2033	4	0.06	3.52	4.67	3.70E-02	0.13	0.08	1.78	2.03	3.54E-04	2.01E-02	2.66E-02	2.11E-04	7.19E-04	4.45E-04	1.01E-02	1.16E-02
2033	5	0.06	3.52	4.67	3.70E-02	0.13	0.08	1.78	2.03	3.54E-04	2.01E-02	2.66E-02	2.11E-04	7.19E-04	4.45E-04	1.01E-02	1.16E-02
2033	10	0.06	2.11	3.50	3.00E-02	0.12	0.07	0.97	1.10	3.25E-04	1.20E-02	2.00E-02	1.71E-04	6.90E-04	4.16E-04	5.53E-03	6.30E-03
2033	15	0.05	1.21	2.67	2.50E-02	0.12	0.07	0.46	0.53	2.97E-04	6.90E-03	1.52E-02	1.43E-04	6.62E-04	3.94E-04	2.65E-03	3.01E-03
2033	20	0.05	0.84	2.18	2.10E-02	0.11	0.07	0.27	0.31	2.68E-04	4.79E-03	1.24E-02	1.20E-04	6.33E-04	3.71E-04	1.56E-03	1.77E-03
2033	25	0.05	0.80	1.96	2.00E-02	0.11	0.06	0.24	0.27	2.62E-04	4.55E-03	1.12E-02	1.14E-04	6.27E-04	3.59E-04	1.36E-03	1.55E-03
2033	30	0.05	0.77	1.77	1.80E-02	0.11	0.06	0.21	0.24	2.68E-04	4.40E-03	1.01E-02	1.03E-04	6.33E-04	3.65E-04	1.19E-03	1.35E-03
2033	35	0.05	0.76	1.62	1.70E-02	0.11	0.07	0.18	0.21	2.79E-04	4.33E-03	9.24E-03	9.70E-05	6.45E-04	3.76E-04	1.03E-03	1.18E-03

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2033	40	0.05	0.76	1.51	1.70E-02	0.12	0.07	0.16	0.18	3.08E-04	4.35E-03	8.58E-03	9.70E-05	6.73E-04	3.99E-04	9.07E-04	1.03E-03
2033	45	0.06	0.78	1.43	1.60E-02	0.12	0.08	0.14	0.16	3.42E-04	4.44E-03	8.13E-03	9.13E-05	7.07E-04	4.33E-04	8.04E-04	9.18E-04
2033	50	0.07	0.81	1.38	1.60E-02	0.13	0.08	0.13	0.15	3.88E-04	4.62E-03	7.88E-03	9.13E-05	7.53E-04	4.79E-04	7.30E-04	8.33E-04
2033	55	0.08	0.86	1.37	1.60E-02	0.14	0.09	0.12	0.14	4.45E-04	4.88E-03	7.82E-03	9.13E-05	8.10E-04	5.30E-04	6.73E-04	7.70E-04
2033	60	0.09	0.92	1.40	1.60E-02	0.15	0.10	0.11	0.13	5.13E-04	5.23E-03	7.97E-03	9.13E-05	8.78E-04	5.93E-04	6.45E-04	7.36E-04
2033	65	0.10	0.99	1.46	1.60E-02	0.17	0.12	0.11	0.13	5.93E-04	5.66E-03	8.32E-03	9.13E-05	9.58E-04	6.67E-04	6.39E-04	7.30E-04
2033	70	0.12	1.08	1.55	1.70E-02	0.18	0.13	0.12	0.13	6.84E-04	6.17E-03	8.86E-03	9.70E-05	1.05E-03	7.47E-04	6.56E-04	7.47E-04
2033	75	0.14	1.19	1.69	1.80E-02	0.20	0.15	0.12	0.14	7.87E-04	6.76E-03	9.62E-03	1.03E-04	1.15E-03	8.44E-04	7.02E-04	7.99E-04
2033	80	0.16	1.31	1.85	1.90E-02	0.22	0.17	0.14	0.15	8.96E-04	7.44E-03	1.06E-02	1.08E-04	1.26E-03	9.47E-04	7.70E-04	8.73E-04
2034	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	5.27E-04	1.98E-01	5.91E-01	3.02E-04	5.27E-04	4.83E-04	3.66E-02	4.17E-02
2034	1	0.05	3.16	3.91	3.70E-02	0.12	0.07	1.60	1.82	2.58E-04	1.51E-02	1.87E-02	1.77E-04	5.65E-04	3.35E-04	7.65E-03	8.71E-03
2034	2	0.05	3.16	3.91	3.70E-02	0.12	0.07	1.60	1.82	2.58E-04	1.51E-02	1.87E-02	1.77E-04	5.65E-04	3.35E-04	7.65E-03	8.71E-03
2034	3	0.05	3.16	3.91	3.70E-02	0.12	0.07	1.60	1.82	2.58E-04	1.51E-02	1.87E-02	1.77E-04	5.65E-04	3.35E-04	7.65E-03	8.71E-03
2034	4	0.05	3.16	3.91	3.70E-02	0.12	0.07	1.60	1.82	2.58E-04	1.51E-02	1.87E-02	1.77E-04	5.65E-04	3.35E-04	7.65E-03	8.71E-03
2034	5	0.05	3.16	3.91	3.70E-02	0.12	0.07	1.60	1.82	2.58E-04	1.51E-02	1.87E-02	1.77E-04	5.65E-04	3.35E-04	7.65E-03	8.71E-03
2034	10	0.05	1.89	2.93	3.00E-02	0.11	0.07	0.87	0.99	2.35E-04	9.07E-03	1.40E-02	1.44E-04	5.41E-04	3.16E-04	4.17E-03	4.75E-03
2034	15	0.05	1.09	2.24	2.50E-02	0.11	0.06	0.42	0.48	2.15E-04	5.20E-03	1.07E-02	1.20E-04	5.22E-04	2.97E-04	2.00E-03	2.27E-03
2034	20	0.04	0.75	1.82	2.10E-02	0.11	0.06	0.25	0.28	1.96E-04	3.60E-03	8.73E-03	1.01E-04	5.03E-04	2.82E-04	1.17E-03	1.34E-03
2034	25	0.04	0.72	1.64	2.00E-02	0.10	0.06	0.21	0.24	1.91E-04	3.43E-03	7.85E-03	9.57E-05	4.98E-04	2.78E-04	1.02E-03	1.17E-03
2034	30	0.04	0.69	1.48	1.80E-02	0.10	0.06	0.19	0.21	1.91E-04	3.31E-03	7.10E-03	8.62E-05	4.98E-04	2.78E-04	8.95E-04	1.01E-03
2034	35	0.04	0.68	1.36	1.70E-02	0.11	0.06	0.16	0.19	2.06E-04	3.26E-03	6.50E-03	8.14E-05	5.12E-04	2.87E-04	7.80E-04	8.90E-04
2034	40	0.05	0.68	1.26	1.70E-02	0.11	0.06	0.14	0.16	2.20E-04	3.27E-03	6.04E-03	8.14E-05	5.27E-04	3.06E-04	6.85E-04	7.80E-04
2034	45	0.05	0.70	1.20	1.60E-02	0.12	0.07	0.13	0.15	2.49E-04	3.35E-03	5.72E-03	7.66E-05	5.55E-04	3.30E-04	6.08E-04	6.94E-04
2034	50	0.06	0.73	1.16	1.60E-02	0.12	0.08	0.12	0.13	2.82E-04	3.48E-03	5.54E-03	7.66E-05	5.89E-04	3.59E-04	5.51E-04	6.27E-04
2034	55	0.07	0.77	1.15	1.60E-02	0.13	0.08	0.11	0.12	3.26E-04	3.68E-03	5.51E-03	7.66E-05	6.32E-04	3.97E-04	5.07E-04	5.79E-04
2034	60	0.08	0.82	1.17	1.60E-02	0.14	0.09	0.10	0.12	3.73E-04	3.94E-03	5.61E-03	7.66E-05	6.80E-04	4.45E-04	4.88E-04	5.55E-04
2034	65	0.09	0.89	1.22	1.60E-02	0.15	0.10	0.10	0.12	4.31E-04	4.27E-03	5.85E-03	7.66E-05	7.37E-04	4.98E-04	4.83E-04	5.51E-04
2034	70	0.10	0.97	1.30	1.70E-02	0.17	0.12	0.10	0.12	4.98E-04	4.65E-03	6.24E-03	8.14E-05	8.04E-04	5.55E-04	4.98E-04	5.65E-04
2034	75	0.12	1.07	1.41	1.80E-02	0.18	0.13	0.11	0.13	5.70E-04	5.10E-03	6.77E-03	8.62E-05	8.76E-04	6.22E-04	5.27E-04	6.03E-04
2034	80	0.14	1.17	1.55	1.90E-02	0.20	0.15	0.12	0.14	6.51E-04	5.61E-03	7.43E-03	9.10E-05	9.57E-04	6.99E-04	5.79E-04	6.61E-04
2035	0	0.11	41.43	123.52	6.30E-02	0.11	0.10	7.65	8.71	5.09E-04	1.92E-01	5.71E-01	2.91E-04	5.09E-04	4.67E-04	3.54E-02	4.03E-02
2035	1	0.05	2.80	3.17	3.70E-02	0.11	0.06	1.42	1.62	2.08E-04	1.30E-02	1.47E-02	1.71E-04	5.04E-04	2.91E-04	6.56E-03	7.48E-03
2035	2	0.05	2.80	3.17	3.70E-02	0.11	0.06	1.42	1.62	2.08E-04	1.30E-02	1.47E-02	1.71E-04	5.04E-04	2.91E-04	6.56E-03	7.48E-03
2035	3	0.05	2.80	3.17	3.70E-02	0.11	0.06	1.42	1.62	2.08E-04	1.30E-02	1.47E-02	1.71E-04	5.04E-04	2.91E-04	6.56E-03	7.48E-03
2035	4	0.05	2.80	3.17	3.70E-02	0.11	0.06	1.42	1.62	2.08E-04	1.30E-02	1.47E-02	1.71E-04	5.04E-04	2.91E-04	6.56E-03	7.48E-03
2035	5	0.05	2.80	3.17	3.70E-02	0.11	0.06	1.42	1.62	2.08E-04	1.30E-02	1.47E-02	1.71E-04	5.04E-04	2.91E-04	6.56E-03	7.48E-03
2035	10	0.04	1.68	2.38	3.00E-02	0.11	0.06	0.77	0.88	1.94E-04	7.77E-03	1.10E-02	1.39E-04	4.90E-04	2.73E-04	3.58E-03	4.07E-03
2035	15	0.04	0.96	1.81	2.50E-02	0.10	0.06	0.37	0.42	1.76E-04	4.46E-03	8.38E-03	1.16E-04	4.72E-04	2.59E-04	1.72E-03	1.95E-03
2035	20	0.04	0.67	1.48	2.10E-02	0.10	0.05	0.22	0.25	1.62E-04	3.09E-03	6.83E-03	9.71E-05	4.58E-04	2.45E-04	1.01E-03	1.15E-03
2035	25	0.03	0.64	1.33	2.00E-02	0.10	0.05	0.19	0.22	1.57E-04	2.94E-03	6.14E-03	9.25E-05	4.53E-04	2.40E-04	8.78E-04	1.00E-03
2035	30	0.03	0.62	1.20	1.80E-02	0.10	0.05	0.17	0.19	1.57E-04	2.84E-03	5.56E-03	8.32E-05	4.53E-04	2.40E-04	7.67E-04	8.74E-04
2035	35	0.04	0.61	1.10	1.70E-02	0.10	0.05	0.15	0.17	1.66E-04	2.80E-03	5.09E-03	7.86E-05	4.62E-04	2.50E-04	6.70E-04	7.63E-04
2035	40	0.04	0.61	1.02	1.70E-02	0.10	0.06	0.13	0.15	1.80E-04	2.81E-03	4.73E-03	7.86E-05	4.76E-04	2.64E-04	5.87E-04	6.70E-04
2035	45	0.04	0.62	0.97	1.60E-02	0.11	0.06	0.11	0.13	2.03E-04	2.87E-03	4.48E-03	7.40E-05	4.99E-04	2.82E-04	5.22E-04	5.96E-04
2035	50	0.05	0.65	0.94	1.60E-02	0.11	0.07	0.10	0.12	2.31E-04	2.99E-03	4.34E-03	7.40E-05	5.27E-04	3.10E-04	4.72E-04	5.36E-04

Table C.2.2B. Summary of Weighted Emission Factors for Heavy-Duty Truck (Diesel Based Engines)

Engine Model Year	Speed (mph)	Default EMFAC Emission Factor (g/mi)								Weighted Emission Factors per Model Year and Speed (g/mi)							
		DPM	CO	NOX	SOX	PM10	PM25	ROG (Running Exhaust)	TOG	DPM	CO	NOX	SOX	PM10	PM25	ROG	TOG
2035	55	0.06	0.68	0.93	1.60E-02	0.12	0.07	0.10	0.11	2.64E-04	3.15E-03	4.31E-03	7.40E-05	5.59E-04	3.42E-04	4.39E-04	4.99E-04
2035	60	0.07	0.73	0.95	1.60E-02	0.13	0.08	0.09	0.10	3.05E-04	3.38E-03	4.39E-03	7.40E-05	6.01E-04	3.79E-04	4.16E-04	4.76E-04
2035	65	0.08	0.79	0.99	1.60E-02	0.14	0.09	0.09	0.10	3.51E-04	3.66E-03	4.58E-03	7.40E-05	6.47E-04	4.21E-04	4.16E-04	4.72E-04
2035	70	0.09	0.86	1.06	1.70E-02	0.15	0.10	0.09	0.11	4.07E-04	3.98E-03	4.89E-03	7.86E-05	7.03E-04	4.72E-04	4.25E-04	4.85E-04
2035	75	0.10	0.95	1.15	1.80E-02	0.17	0.11	0.10	0.11	4.67E-04	4.37E-03	5.30E-03	8.32E-05	7.63E-04	5.22E-04	4.53E-04	5.18E-04
2035	80	0.12	1.04	1.26	1.90E-02	0.18	0.13	0.11	0.12	5.32E-04	4.81E-03	5.82E-03	8.78E-05	8.28E-04	5.87E-04	4.99E-04	5.64E-04

Table C.2.2C. Adjusted EMFAC Emission Factors for Port Trucks in 2035

Speed (mph)	Emission Factors (g/mile)							
	DPM	CO	NOx	SOX	PM10	PM25	ROG	TOG
0	0.11	41.31	123.17	0.06	0.11	0.10	7.63	8.69
1	0.13	6.48	10.75	0.04	0.20	0.14	3.26	3.72
2	0.13	6.48	10.75	0.04	0.20	0.14	3.26	3.72
3	0.13	6.48	10.75	0.04	0.20	0.14	3.26	3.72
4	0.13	6.48	10.75	0.04	0.20	0.14	3.26	3.72
5	0.13	6.48	10.75	0.04	0.20	0.14	3.26	3.72
6	0.13	5.96	10.21	0.04	0.19	0.14	2.97	3.38
7	0.13	5.44	9.68	0.03	0.19	0.14	2.67	3.04
8	0.12	4.92	9.14	0.03	0.19	0.14	2.37	2.70
9	0.12	4.40	8.60	0.03	0.19	0.13	2.08	2.36
10	0.12	3.89	8.06	0.03	0.18	0.13	1.78	2.03
11	0.12	3.55	7.68	0.03	0.18	0.13	1.59	1.81
12	0.12	3.22	7.29	0.03	0.18	0.13	1.41	1.60
13	0.11	2.89	6.91	0.03	0.18	0.13	1.22	1.39
14	0.11	2.56	6.52	0.03	0.18	0.12	1.04	1.18
15	0.11	2.23	6.14	0.02	0.17	0.12	0.85	0.97
16	0.11	2.09	5.91	0.02	0.17	0.12	0.78	0.89
17	0.11	1.95	5.69	0.02	0.17	0.12	0.71	0.81
18	0.10	1.82	5.46	0.02	0.17	0.12	0.64	0.73
19	0.10	1.68	5.24	0.02	0.17	0.11	0.57	0.65
20	0.10	1.55	5.01	0.02	0.16	0.11	0.50	0.57
21	0.10	1.53	4.91	0.02	0.16	0.11	0.49	0.56
22	0.10	1.52	4.81	0.02	0.16	0.11	0.48	0.54
23	0.10	1.50	4.71	0.02	0.16	0.11	0.46	0.53
24	0.10	1.48	4.61	0.02	0.16	0.11	0.45	0.51
25	0.10	1.47	4.50	0.02	0.16	0.11	0.44	0.50
26	0.10	1.46	4.42	0.02	0.16	0.11	0.43	0.48
27	0.10	1.45	4.33	0.02	0.16	0.11	0.41	0.47
28	0.10	1.44	4.25	0.02	0.16	0.11	0.40	0.46
29	0.10	1.43	4.16	0.02	0.16	0.11	0.39	0.45
30	0.10	1.42	4.08	0.02	0.16	0.11	0.38	0.43
31	0.10	1.42	4.01	0.02	0.16	0.11	0.37	0.42
32	0.10	1.41	3.94	0.02	0.16	0.11	0.36	0.41
33	0.10	1.41	3.87	0.02	0.17	0.11	0.35	0.40
34	0.10	1.40	3.80	0.02	0.17	0.12	0.34	0.39
35	0.10	1.40	3.73	0.02	0.17	0.12	0.33	0.38
36	0.11	1.40	3.68	0.02	0.17	0.12	0.32	0.37
37	0.11	1.40	3.63	0.02	0.17	0.12	0.32	0.36
38	0.11	1.40	3.57	0.02	0.17	0.12	0.31	0.35
39	0.11	1.40	3.52	0.02	0.18	0.12	0.30	0.34
40	0.11	1.40	3.47	0.02	0.18	0.13	0.29	0.33
41	0.12	1.41	3.43	0.02	0.18	0.13	0.29	0.33
42	0.12	1.42	3.39	0.02	0.18	0.13	0.28	0.32
43	0.12	1.42	3.36	0.02	0.19	0.13	0.27	0.31
44	0.12	1.43	3.32	0.02	0.19	0.14	0.27	0.30
45	0.13	1.43	3.28	0.02	0.19	0.14	0.26	0.30
46	0.13	1.45	3.26	0.02	0.19	0.14	0.25	0.29
47	0.13	1.46	3.24	0.02	0.20	0.14	0.25	0.28
48	0.14	1.47	3.22	0.02	0.20	0.15	0.24	0.28

Table C.2.2C. Adjusted EMFAC Emission Factors for Port Trucks in 2035

Speed (mph)	Emission Factors (g/mile)							
	DPM	CO	NOx	SOX	PM10	PM25	ROG	TOG
49	0.14	1.48	3.20	0.02	0.20	0.15	0.24	0.27
50	0.14	1.49	3.18	0.02	0.21	0.15	0.23	0.27
51	0.15	1.51	3.18	0.02	0.21	0.16	0.23	0.26
52	0.15	1.53	3.17	0.02	0.22	0.16	0.23	0.26
53	0.16	1.54	3.17	0.02	0.22	0.17	0.22	0.26
54	0.16	1.56	3.16	0.02	0.23	0.17	0.22	0.25
55	0.17	1.58	3.16	0.02	0.23	0.17	0.22	0.25
56	0.17	1.60	3.17	0.02	0.23	0.18	0.22	0.25
57	0.18	1.62	3.18	0.02	0.24	0.18	0.21	0.24
58	0.18	1.64	3.20	0.02	0.24	0.19	0.21	0.24
59	0.19	1.67	3.21	0.02	0.25	0.19	0.21	0.24
60	0.19	1.69	3.22	0.02	0.25	0.20	0.21	0.24
61	0.20	1.72	3.25	0.02	0.26	0.20	0.21	0.24
62	0.20	1.74	3.28	0.02	0.27	0.21	0.21	0.24
63	0.21	1.77	3.30	0.02	0.27	0.21	0.21	0.24
64	0.21	1.80	3.33	0.02	0.28	0.22	0.21	0.23
65	0.22	1.83	3.36	0.02	0.28	0.22	0.21	0.23
66	0.23	1.86	3.40	0.02	0.29	0.23	0.21	0.24
67	0.23	1.89	3.45	0.02	0.30	0.24	0.21	0.24
68	0.24	1.93	3.49	0.02	0.30	0.24	0.21	0.24
69	0.25	1.96	3.54	0.02	0.31	0.25	0.21	0.24
70	0.25	1.99	3.58	0.02	0.32	0.25	0.21	0.24
71	0.26	2.03	3.64	0.02	0.32	0.26	0.21	0.24
72	0.27	2.07	3.70	0.02	0.33	0.27	0.22	0.25
73	0.28	2.11	3.76	0.02	0.34	0.27	0.22	0.25
74	0.28	2.15	3.82	0.02	0.35	0.28	0.22	0.25
75	0.29	2.18	3.88	0.02	0.35	0.29	0.23	0.26
76	0.30	2.23	3.96	0.02	0.36	0.30	0.23	0.26
77	0.31	2.27	4.04	0.02	0.37	0.30	0.23	0.27
78	0.32	2.32	4.11	0.02	0.38	0.31	0.24	0.27
79	0.32	2.36	4.19	0.02	0.39	0.32	0.24	0.28
80	0.33	2.40	4.27	0.02	0.40	0.33	0.25	0.28