

APPENDIX D

HEALTH RISK ASSESSMENT TECHNICAL REPORT

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Funding: The preparation of this report was financed in part through grants from the United States Department of Transportation (DOT).

The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U. S. Department of Transportation. The contents of this report do not necessarily reflect the official views or policy of the U. S. Department of Transportation.

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**DIESEL EXHAUST HEALTH RISK ASSESSMENT
FOR THE
SOUTHERN CALIFORNIA ASSOCIATION
OF GOVERNMENTS
2016-2040 REGIONAL TRANSPORTATION PLAN/
SUSTAINABLE COMMUNITIES STRATEGY**

KLEINFELDER PROJECT NO. 20154370.001A

NOVEMBER 18, 2015

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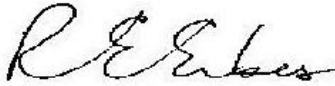
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November 18, 2015

EXECUTIVE SUMMARY

The Southern California Association of Governments (SCAG) developed the 2016 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) for the SCAG region with a calendar year 2040 planning horizon. The RTP/SCS is a long-range plan that serves as a blueprint to help strategize for and achieve a coordinated regional transportation system. The SCAG region includes the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The RTP is used to guide the development of the Federal Transportation Improvement Programs as well as other transportation programming documents and plans. The RTP outlines the region's goals and policies for meeting current and future mobility needs, providing a foundation for transportation decisions by local, regional and state officials that are ultimately aimed at achieving a coordinated and balanced transportation system. Pursuant to Senate Bill (SB) 32 (2008), the SCS is developed as part of the RTP and outlines land use growth strategies that provide for more integrated land use and transportation planning, and maximize transportation investments. As such, like the 2012 RTP/SCS, the 2016 RTP/SCS contains regional transportation investments and integrated land use strategies over a 20-year period. Built upon the progress made since the 2012 RTP/SCS while recognizing the current conditions of land use and transportation throughout the region, the 2016 RTP/SCS is prepared to respond to a changing region by meeting the challenges and creating conditions and infrastructure that motivate increased mobility and accessibility; expanded transportation options; broader economic growth; equitably distributed benefits; and sustainability

In support of the 2016 RTP/SCS, a Program Environmental Impact Report (PEIR) is being prepared. As part of the PEIR, this health risk assessment (HRA) was prepared to assess the potential carcinogenic health risks from emissions of diesel particulate matter (DPM) and other air toxics from motor vehicles on major freeways and transportation corridors. The HRA quantitatively analyzes only the potential carcinogenic impacts from motor vehicles traveling on major freeways. Non-cancer health risk were not addressed because the risks from air toxics emitted by motor vehicles are dominated by potential cancer risk, and non-cancer health risks from motor vehicles have been shown in other studies to not be of concern. Only motor vehicle emissions on freeways were quantitatively evaluated because emissions from other transportation modes and on other transportation corridors are much less than emissions on major freeways. Thus, this HRA yields a reasonable worst-case impact analysis.

The HRA evaluates 16 freeway segments, including eight freeway segments that were evaluated in the 2012-2035 RTP/SCS PEIR and eight additional segments selected for evaluation. The overview of freeway segments that were evaluated is shown in Figure ES-1 (*Overview Freeway*

Segments to be Evaluated). Emissions of DPM from each segment were calculated using the SCAG Transportation Demand Model VMT data for 2012 base year and projections for 2040. SCAG VMT data are provided for heavy duty vehicles and light/medium duty vehicles. The 2012 base year transportation network included the most recently adopted 2015 Federal Transportation Improvement Plan (FTIP) projects, which was adopted in September 2014 and obtained a federal approval in December 2014. So, the 2012 base year transportation network does capture the recent progress on the transportation projects side per the 2015 FTIP. The most current version of the California Air Resources Board (CARB) mobile source emissions model (EMFAC2014) was used to obtain emission factors of particulate matter less than 10 microns diameter in diesel-fueled vehicles, which were assumed equal to DPM emission factors.

The potential impacts of emissions from a representative 1-mile long portion of the freeway segment were evaluated with the CARB-approved AERMOD dispersion model (Version 15181) and meteorological data obtained from South Coast, Imperial, and Ventura Air Districts' monitoring sites. The calculated DPM concentration was then used to calculate the potential carcinogenic risk using the most current HRA guidelines published by the California Office of Environmental Health Hazard Assessment¹ (2015). The potential cancer risk calculated for DPM was increased by 5 percent to account for the additional organic gases of acetaldehyde, benzene, 1,3-butadiene, and formaldehyde based on observations of past data.

The potential cancer risk for residences was evaluated for a 30-year exposure, 9-year exposure and 70-year exposure. The potential cancer risk at worker receptors and sensitive receptors was also calculated. The sensitive receptors evaluated include senior centers, day care centers and schools, but the risk at those receptors was less than the maximum residential risk due to two primary reasons: (1) the duration of exposure at sensitive receptors is much less than assumed for residential exposure and (2) many of the sensitive receptors are further away from the freeway than the residential receptors (see Appendix C).

The 30-year maximum exposed individual residential (MEIR) cancer risk for each transportation segment evaluated for each of the Simulations 2 through 5, is reduced from the baseline conditions represented by Simulation 1 (Existing Conditions) as shown in Table ES-1 (*Summary Maximum Exposed Individual Residential 30-year Exposure Cancer Risk [cancer risk per million exposed persons]*). The MEIR cancer risk is on the order of 50 to 90 percent less than baseline conditions. This is due to the dramatic reduction in emissions that are expected due to the federal and state regulations that require reduced emissions from on-road heavy-duty diesel trucks

¹ *California Office of Environmental Health Hazard Assessment*

(HDDT). By 2040, emissions per mile from HDDT will be on the order of only 5 percent of the emissions per mile in 2015. Three simulations (Simulation 3, Simulation 4, and Simulation 5) have comparable reductions in exposure to cancer risk, with Simulation 5 (the Intensified Land Use Alternative) achieving the greatest reduction. This is because there is very little difference in HDDT vehicle miles traveled on the transportation segments in 2040 under any of the simulations (differences in HDDT mileage range from less than 1 to about 5 percent among the simulations). The MEIR cancer risk for Simulations 2 through 5 ranges from 93 in a million to 9 in a million cancer risk for 30-year exposure, 66 in a million to 6 in a million cancer risk for 9-year exposure, and 106 in a million to 10 in a million cancer risk for 70-year exposure. The exposed worker risk for Simulations 2 through 5 ranges from 7 in a million to 1 in a million cancer risk. The 70-year MEIR cancer risk for the No Project Alternative from the eight original freeway segments has decreased from the 2012-2035 RTP/SCS PEIR for the following reasons: 1) the emission factors for HDDT projected by the current version of the EMFAC model for 2040 are much less (on the order of 95 percent less) than the emission factors used in the 2012-2035 RTP/SCS PEIR for 2035; and 2) the vehicle mileage projected by the current SCAG transportation demand model is different than what was projected in the 2012-2035 RTP/SCS PEIR because a more updated 2012 Base Year transportation network is being used for this 2016 RTP/SCS. The combined result of these differences show a decrease in the overall risk to residential, worker and sensitive receptors in the current predictions when compared with the previous analyses.

Table ES-1

**Summary Maximum Exposed Individual Residential 30-year Exposure Cancer Risk
(cancer risk per million exposed persons)**

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY/ REGION	SIMULATION 1 (EXISTING CONDITIONS)	SIMULATION 2 (NO PROJECT ALTERNATIVE)	SIMULATION 3 (PROPOSED PROJECT)	SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)	SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)
1	IMP I-8	Imperial / El Centro	125	44	19	19	18
2	IMP SR-78	Imperial / Westmoreland	82	64	9	9	9
3	LA I-110	Los Angeles / Carson	664	62	46	45	45
4	LA I-710	Los Angeles / Compton	847	58	55	55	54
5	LA SR-60 DB	Los Angeles / Diamond Bar	1,101	93	60	60	60
6	LA SR-60 SEM	Los Angeles / South El Monte	763	55	44	43	43
7	ORA I-5	Orange / Orange	455	40	33	32	33
8	ORA I-405	Orange / Seal Beach	1,142	81	78	78	78
9	RIV I-10	Riverside / Banning	152	15	15	15	14
10	RIV I-15	Riverside / Temecula	366	27	38	38	38
11	RIV SR-91	Riverside / Corona	937	64	55	56	56
12	SB I-15 ONT	San Bernardino / Ontario	236	46	25	25	25
13	SB I-15 VIC	San Bernardino / Victorville	524	48	64	64	63
14	SB SR-60	San Bernardino / Ontario	810	44	39	39	47
15	VEN US-101 SB	Ventura / San Buenaventura	165	12	11	11	11
16	VEN US-101 TO	Ventura / Thousand Oaks	832	54	48	48	45



FIGURE 2-1

FIGURE 2-2

FIGURE 2-3

LEGEND

- 2016 PEIR Additional Segment
- Original Segment
- County Boundary

Basemap: National Geographic World Map via ESRI Map Service

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PROJECT NO.:	20154370
DRAWN:	NOV 2015
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FILE NAME:	Overview.mxd

OVERVIEW FREEWAY SEGMENTS TO BE EVALUATED

Diesel Exhaust Health Risk Assessment
Southern California Association of Governments
2016 RTP/SCS PEIR

FIGURE
ES-1

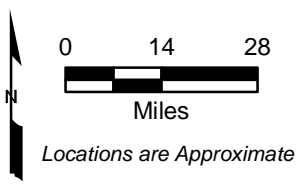


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1 INTRODUCTION

The Southern California Association of Governments (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS, “Plan” or “Project”) is a long-range transportation plan that provides a vision for regional transportation investments that are integrated with land use strategies for a more than 20-year period. SCAG serves as a Metropolitan Planning Organization (MPO), a Council of Governments (COG) and a Multi-County Designated Transportation Planning Agency representing the approximately 18.7 million residents living within approximately 38,000 square miles represented by multiple jurisdictions: six-County area comprised of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties and 191 cities, 16 Federally recognized Tribal Sovereign Nations; and 15 Subregional entities that have been recognized by the Regional Council, SCAG’s governing body, as partners in the regional policy planning process.

SCAG is the lead agency under the California Environmental Quality Act (CEQA) with the responsibility for consideration of the 2016 RTP/SCS for approval. As the lead agency, SCAG has determined to prepare a Program Environmental Impact Report (PEIR) for the 2016 RTP/SCS.

The PEIR is a programmatic document that provides a region-wide assessment of the potential significant environmental effects of the 2016 RTP/SCS. The PEIR provides a regional consideration of direct and indirect effects, growth-inducing impacts, and cumulative effects of the 2016 RTP/SCS at a programmatic level. The PEIR includes a range of reasonable alternatives to the 2016 RTP/SCS, including the No Project alternative and alternatives that are capable of achieving most of the basic objectives of the 2016 RTP/SCS and that may be capable of avoiding or substantially lessening any of the significant environmental effects of the 2016 RTP/SCS. The PEIR includes performance standard-based mitigation measures that are capable of avoiding and reducing the significant effects of the 2016 RTP/SCS to the maximum extent practicable.

In support of the 2016 RTP/SCS, a PEIR is being prepared. As part of the PEIR, this HRA was prepared to assess the potential cancer risks from emissions of diesel particulate matter (DPM) and other air toxics from motor vehicles on major freeways and transportation corridors. Major freeways have the highest potential for DPM risk due to the density of HDT traffic, emission rates from HDT traffic, and proximity/number of residential and sensitive receptors near freeways. The HRA quantitatively analyzes only the potential carcinogenic impacts from motor vehicles traveling on major freeways. Non-cancer health risks were not addressed because the risks from air toxics

emitted by motor vehicles are dominated by potential cancer risk and non-cancer health risks from motor vehicles have been shown in other studies to not be of concern.

2 HEALTH RISK ASSESSMENT METHODOLOGY

The diesel-exhaust health risk assessment was conducted in seven steps:

- 1) Determine which land use development pattern and transportation investment scenarios will be evaluated in the health risk assessment simulations;
- 2) Identify major freeway and transportation corridors of interest within the simulations;
- 3) Select representative transportation segments from the major freeways or transportation corridors that will be used in the detailed analysis to yield a reasonable worst-case assessment of the potential cancer risk associated with the simulations under evaluation;
- 4) For each of the simulations, determine emissions of diesel exhaust from all of the selected representative transportation segments;
- 5) Determine receptors of interest (including hypothetical worst-case receptors) near the selected representative transportation segments at which the potential impact of diesel exhaust will be evaluated;
- 6) Model atmospheric dispersion of the emissions in order to determine the potential impact from emissions at receptors of interest and hypothetical receptors; and
- 7) Evaluate the potential cancer risk at the receptors of interest and hypothetical receptors.

2.1 SCENARIOS TO BE EVALUATED

The scenarios to be evaluated in this HRA were based on those recommended pursuant to the State California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations, Chapter 3. Guidelines for the Implementation of CEQA). The PEIR includes evaluation of the proposed Project (2016 RTP/SCS) and three alternatives. This HRA includes these four scenarios in addition to the existing conditions scenario (baseline scenario), thereby resulting in five HRA simulations:

- Simulation 1: Represents Existing Conditions (or baseline simulation);
- Simulation 2: Represents future (2040) conditions under the No Project Alternative;
- Simulation 3: Represents future (2040) conditions under the 2016 RTP/SCS or the Proposed Project;
- Simulation 4: Represents future (2040) conditions under the 2012 RTP/SCS with Local Input Alternative;

- Simulation 5: Represents future (2040) conditions under the Intensified Land Use Alternative.

2.2 SELECTION OF REPRESENTATIVE TRANSPORTATION SEGMENTS

The SCAG regional transportation system includes approximately 70,904 existing lane miles². Clearly, one cannot assess potential health risks at all of those locations. Thus, a reasonable worst-case representative subset of highways and arterials was selected for analysis. The analysis focused on major freeways and transportation corridors. Passenger rail impacts were not quantitatively assessed because emissions from passenger rail are much less than emissions from major freeways and transportation corridors. For this analysis, 16 representative transportation segments were chosen from major freeway and transportation corridors in the six-county SCAG Region to yield a reasonable worst-case assessment of the potential impact of the five Evaluation Simulations throughout the SCAG Region. The logic for selection of the 16 representative transportation segments is as follows:

- Evaluate the eight transportation segments as used in SCAG's 2012-2035 RTP/SCS PEIR³ for comparison purposes.
- Select an additional eight transportation segments from major freeways and transportation corridors based on 2012 base year⁴ vehicle miles traveled (VMT) data and sensitive receptor locations. Qualifying freeway segments identified as having at least one sensitive receptor within 500 meters were then ranked based on heavy duty (HD) vehicles (primarily trucks) VMT, considering the amount of truck traffic in both directions. Segments were not considered that were considered distant from populated areas with minimal (i.e., less than two) sensitive receptors (e.g., near the base of the Grapevine on I-5) or where the additional segment was an extension of the one of the original 8 segments. In these cases, the next most appropriate segment was chosen following the criteria above.

Selection of the additional eight transportation segments involved consideration of a combination of quantitative and qualitative information. First, VMT data from 2012 base year transportation network, representing the most updated transportation network at the time of the preparation for

² SCAG *Transportation Modeling*, October 2015.

³ *Program Environmental Impact Report, Southern California Association of Governments 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy*, December 2011, State Clearinghouse # 2011051018. Notice of Determination published April 9, 2012.

⁴ The 2012 base year transportation network that is being used for the 2016 RTP/SCS includes the most updated 2015 Federal Transportation Improvement Program (FTIP) projects as well as the projects included in the 2012 RTP/SCS as last amended in September 2014.

the 2016 RTP/SCS, were obtained from SCAG. These data provide 2012 base year VMT for both HD (both diesel and other fuel) and light/medium duty (LM, both diesel and other fuel) vehicles for all of the major freeways and transportation corridors in the SCAG Region. The VMT data are reported by SCAG from the Transportation Demand Model by geographic locations called links. For the purposes of this HRA, a freeway segment may consist of one or more links as defined later in this section. The lengths of the links vary, but are generally on the order of a mile long. The links were then ranked from highest to lowest average daily HD VMT. Average daily VMT was used instead of AM or PM peak VMT because the potential health risks from diesel exhaust are based on long-term (annual average) exposures for many years. The ranking was based on HD VMT rather than LM alone or HD plus LM VMT because nearly all of the HD vehicles are on-road heavy-duty diesel trucks (HDDT), while most of the LM vehicles are not diesel-fueled. Thus, HD VMT yields the highest potential diesel emissions.

The ranking was based on 2012 base year VMT data because those data were the most recent available at the time of the ranking. The 2012 base year VMT data incorporated the most recent 2015 Federal Transportation Improvement Program (FTIP) projects and the 2012 RTP/SCS projects as amended in September 2014. The 2015 FTIP was adopted in September 2014 and obtained federal approval in December 2014. Since the 2012 base year VMT data includes the 2015 FTIP projects and the 2012 RTP/SCS projects as last amended in September 2014, it is not expected that 2015 VMT data (even if it were available) would change the ranking obtained with the 2012 base year VMT data. Hence, the 2012 base year VMT data used in this HRA represented the most updated transportation network information existing at the time that the Notice of Preparation for this PEIR was issued (March 2015).

Second, the locations of sensitive receptors in the region were obtained from TomTom and TeleAtlas databases. The sensitive receptor locations were then plotted and the HD VMT data evaluated to select links that had the greatest combination of the density of nearby (within 500 meters) sensitive receptors and maximum HD VMT. A distance of 500 meters from the freeway links was used to capture the nearest and most dense areas of sensitive receptors and because previous studies by CARB have demonstrated that the potential health risk decreases dramatically with distance and the maximum impact is within 500 meters. Links that were geographically adjacent were connected as necessary to create a segment of length of from 2 to 6 miles such that a meaningful number of nearby sensitive receptors and nearby residents were present for that segment. Then one of the maximum HD VMT segments in each county was selected considering not only the quantitative information (HD VMT and numbers of sensitive receptors) but also the qualitative information such as evaluation of aerial photos showing

residential and commercial building density. After one worst-case segment was chosen in each of the six SCAG Region counties, additional two segments that had relatively high HD VMT were added (one in Los Angeles County and one in Riverside County).

The magnitude of the length of a segment to be evaluated is not critical because the maximum impact of diesel exhaust emissions occurs very near (less than 500 meters) and perpendicular to the segment. As long as the length of the segment is relatively longer than the distance to the impacted receptor, the potential impact at a receptor will be the same regardless of the length of the segment. A segment at least 1500 meters long (approximately 1 mile) is long enough to represent the impact at a receptor 500 meters away. Note that most of the maximally-affected residences, worker, and sensitive receptors are located less than 500 meters away.

It is recognized that VMT is a function not only of the number of vehicles but also the distance traveled by a vehicle. Therefore, if the number of vehicles is constant, a longer link will have a greater VMT than a shorter link. However, most of the links are of a similar length (on the order of 1 mile), and thus comparing VMT for a link is approximately the same as comparing vehicle counts. VMT is the parameter needed to perform emission and health risk assessment modeling, and thus VMT was used to rank the links. A brief analysis was conducted to confirm that ranking a segment by VMT versus vehicle counts does not change selection of the worst-case segment.

It is also recognized that total emissions for a segment are a function of VMT because, as discussed in Section 2.3, the emissions model yields emission factors in terms of grams per mile. Therefore, a longer segment will have greater emissions (grams per day) than a shorter segment, even if the vehicle counts are the same (because the longer segment will have greater VMT). However, the emissions for the longer segment are “spread out” over a longer distance, so the potential impact is the same. Thus, the ultimate length of a segment is not critical provided that it is long enough to adequately represent maximum impact at a meaningful number of sensitive receptors.

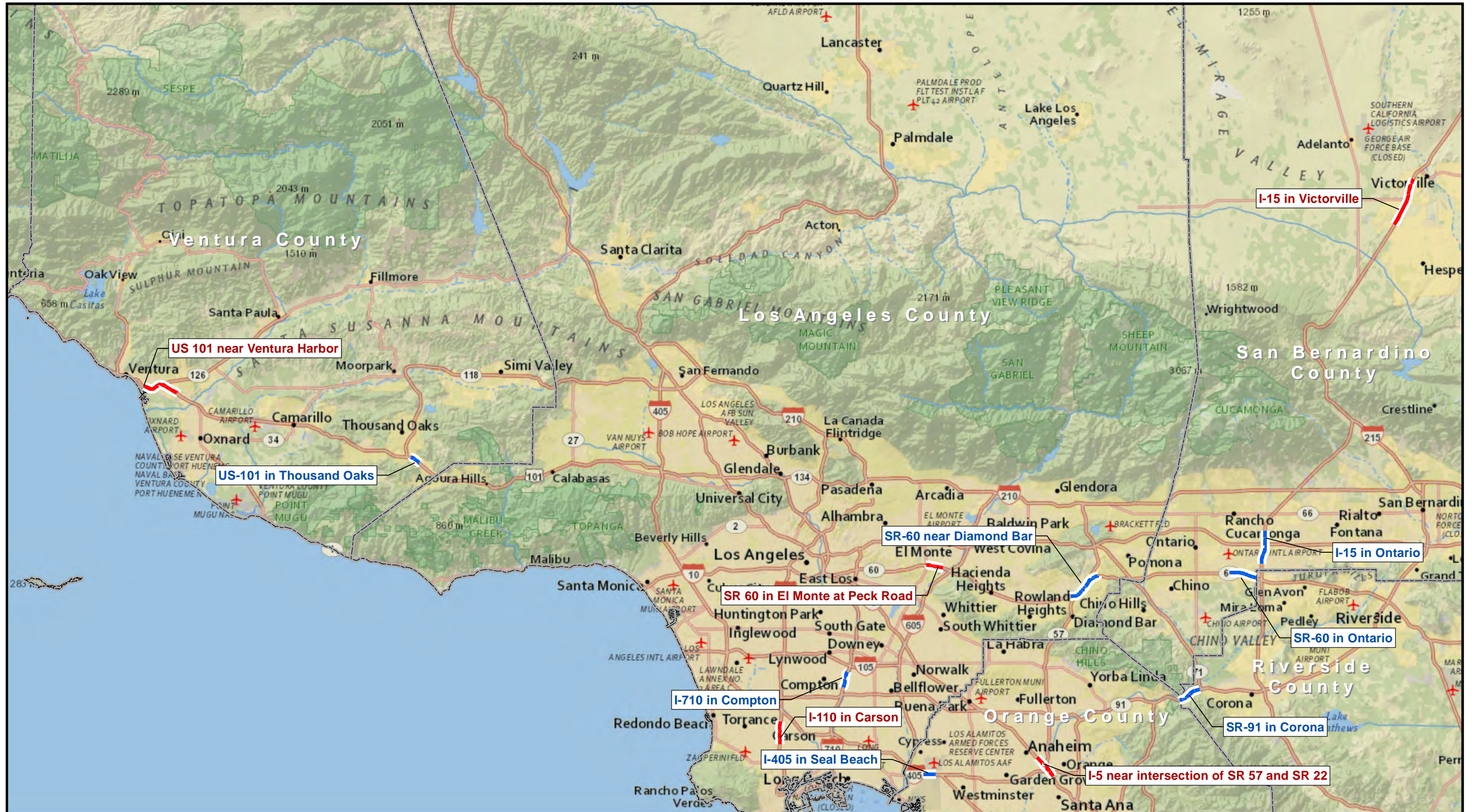
Initially, it was expected that major freeways would have greater HD VMT than major transportation corridors (e.g., bus and light rail), and it was expected that there would be sufficient nearby sensitive receptors to the major freeways such that the major freeways would represent worst-case conditions. This logic was confirmed by evaluating HD VMT for major transportation corridors in the SCAG Region compared to the freeways, and it was found that the HD VMT on the major freeway segments was much greater than for the transportation corridors. It was also found that there were numerous residential, worker, and sensitive receptors nearby the major freeways. Likewise, public transit corridors and airport diesel exhaust emissions are much less

than for the major freeways. Therefore, use of the major freeways for segment selection does represent a reasonable worst-case health impact analysis.

The HRA evaluated a total of 16 segments, including the eight segments evaluated in the 2012 RTP/SCS PEIR and eight additional segments selected for evaluation. These segments are shown in ES-1 (*Overview Freeway Segments to be Evaluated*) and Figures 2-1 through 2-3 (*Detailed Overview of SCAG Regions*), and individual details are located in Appendix A:

1. IMP I-8: Interstate 8 just east of El Centro (Imperial County); a 2012-2035 PEIR Segment. (Figure A-1, *IMP I-8 Segment Detail Map*)
2. IMP SR-78: State Road 78 Freeway in Westmorland (Imperial County); an additional segment. (Figure A-2, *IMP SR-78 Segment Detail Map*)
3. LA I-110: Interstate 110 in Carson (Los Angeles County); an additional segment. (Figure A-3, *LA I-110 Segment Detail Map*)
4. LA I-710: Interstate 710 in Compton, north of the intersection with SR 91 (Los Angeles County); a 2012-2035 PEIR Segment. (Figure A-4, *LA I-710 Segment Detail Map*)
5. LA SR-60 DB: State Road 60 Freeway near Diamond Bar (Los Angeles County); a 2012-2035 PEIR Segment. (Figure A-5, *LA SR-60 DB Segment Detail Map*)
6. LA SR-60 SEM: State Road 60 Freeway near South El Monte at Peck Rd (Los Angeles); an additional segment. (Figure A-6, *LA SR-60 SEM Segment Detail Map*)
7. ORA I-5: Interstate 5 in Orange near intersection of SR 57 and SR 22 (Orange County); an additional segment. (Figure A-7, *ORA I-5 Segment Detail Map*)
8. ORA I-405: Interstate 405 in Seal Beach, east of the I-605 interchange (Orange County); a 2012-2035 PEIR Segment. (Figure A-8, *ORA I-405 Segment Detail Map*)
9. RIV I-10: Interstate 10 in the Banning area (Riverside County); an additional segment. (Figure A-9, *RIV I-10 Segment Detail Map*)
10. RIV I-15: Interstate 15 near Temecula (Riverside County); an additional segment. (Figure A-10, *RIV I-15 Segment Detail Map*)
11. RIV SR-91: State Road 91 Freeway in Corona, east of the intersection with SR 71 (Riverside County); a 2012-2035 PEIR Segment. (Figure A-11, *SR-91 Segment Detail Map*)
12. SB I-15 ONT: in Ontario (San Bernardino County); a 2012-2035 PEIR Segment. (Figure A-12, *SB I-15 ONT Segment Detail Map*)

13. SB I-15 VIC: Interstate 15 in the Victorville area (San Bernardino County); an additional segment. (Figure A-13, *SB I-15 VIC Segment Detail Map*)
14. SB SR-60: State Road 60 Freeway in Ontario, west of the I-15 interchange (San Bernardino County); a 2012-2035 PEIR Segment. (Figure A-14, *SB SR-60 Segment Detail Map*)
15. VEN US-101 SB: US 101 Freeway in San Buenaventura near the Ventura Harbor (Ventura County); an additional segment. (Figure A-15, *VEN US-101 SB Segment Detail Map*)
16. VEN US-101 TO: US 101 Freeway in Thousand Oaks, east of SR 23 (Ventura County); a 2012-2035 PEIR Segment.(Figure A-16, *VEN US-101 TO Segment Detail Map*)



LEGEND

- 2016 PEIR Additional Segment
- Original Segment
- County Boundary

Basemap: National Geographic World Map via ESRI Map Service

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**DETAILED OVERVIEW
 NORTHWEST SCAG REGION**

Diesel Exhaust Health Risk Assessment
 Southern California Association of Governments
 2016 RTP/SCS PEIR

FIGURE
2-1



LEGEND

- 2016 PEIR Additional Segment
- Original Segment
- County Boundary

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DETAILED OVERVIEW NORTHEAST SCAG REGION
Diesel Exhaust Health Risk Assessment Southern California Association of Governments 2016 RTP/SCS PEIR

FIGURE
2-2



LEGEND

- 2016 PEIR Additional Segment
- Original Segment
- County Boundary

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DETAILED OVERVIEW SOUTHEAST SCAG REGION
Diesel Exhaust Health Risk Assessment Southern California Association of Governments 2016 RTP/SCS PEIR

FIGURE
2-3

2.3 POTENTIAL EMISSIONS FROM EACH TRANSPORTATION SEGMENT

Emissions were estimated for each transportation segment and Evaluation Simulations with the latest EMFAC2014 California mobile source emissions model. This emissions model is published by the California Air Resources Board (CARB) for use in California to estimate emissions from mobile sources. The EMFAC2014 model is currently being reviewed by USEPA. The model includes County-specific mobile source profiles, including fleet mix and other parameters that affect emissions. Therefore, EMFAC2014 was run to obtain emission factors (grams per mile) for each of the six counties and for calendar years 2015 and 2040 to account for the Evaluation Simulations and transportation segment locations.

Calendar year 2015 was used to calculate the emission factors for Evaluation Simulation 1, Existing Conditions, as the Notice of Preparation was issued in spring of 2015. The 2015 emission factors were coupled with the 2012 VMT (which reflects the 2015 FTIP and is the best VMT data available for existing conditions) to obtain total emissions per segment. For Evaluation Simulations 2 through 5, calendar year 2040 emission factors were coupled with 2040 VMT estimates. The 2040 emission factors represent the best estimate by CARB as to the future fleet mix composition and emission parameters.

The EMFAC emissions model yields emissions of the criteria pollutants (e.g., nitrogen oxides, particulate matter, etc.), not air toxics (e.g., diesel exhaust, acetaldehyde, etc.). However, diesel exhaust consists of particulate matter of less than 10 micron mean aerodynamic diameter (PM₁₀), and PM₁₀ is one of the criteria pollutants. PM₁₀ from diesel-fueled vehicle exhaust was used to represent diesel exhaust emissions. EMFAC estimates PM₁₀ emissions from other sources as well (e.g., brake/tire wear, gasoline vehicle exhaust, etc.), but those sources within EMFAC were not counted as diesel exhaust. EMFAC does not yield emissions of other air toxics associated with vehicle travel, specifically benzene, acetaldehyde, 1,3-butadiene, and formaldehyde. A methodology to account for the risk contribution of these additional air toxics was developed and is discussed in Section 2.6.

EMFAC provides emission factors individually for each vehicle class and model year, and EMFAC2014 can be run for 13 or 34 different vehicle classes (times 2 for diesel versus gasoline). For this analysis, 13 vehicle classes (times 2 for diesel versus gasoline) were used, as the SCAG VMT data are already lumped into only 2 groups (HD and LM), thus running 34 vehicle classes (times 2 for diesel versus gasoline) causes unnecessary complexity and does not improve accuracy. Furthermore, most of the potential health risk is from HDDT; thus no additional health risk information is gleaned by using 34 vehicle classes. For each county, the HD and LM VMT

was assigned proportionally to each of the vehicle classes and fuel types according to the county-specific fleet mix in EMFAC for calendar year 2015 or 2040. Fleet aggregate emission factors by vehicle class were used based on the county-specific fleet mix of model years for that vehicle class. The EMFAC fleet mix and proportional distribution of 2015 and 2040 VMT are shown in Appendix B by county and calendar year. Appendix B also shows the PM₁₀ emission factors from EMFAC2014 by vehicle class.

The PM₁₀ emission factors from EMFAC by vehicle class for diesel-fueled vehicles (grams per mile) were then multiplied by the average daily VMT for the transportation segment to obtain total emissions (grams per day) of DPM. The VMT data for Simulation 1, Existing Conditions, was prepared by using the 2012 base year, but includes projects in the 2015 FTIP adopted in September 2014, as well as projects in the 2012-2035 RTP/SCS as last amended in September 2014. The VMT data for Simulations 2 through 5 were prepared for calendar year 2040 and were developed with their travel demand modeling system. Table 2-1 (*Average Daily VMT for Selected Transportation Segments and Evaluation Simulations*) shows the average daily VMT by transportation segment, direction, and Evaluation Simulation. The VMT was then multiplied by the EMFAC2014 emission factors to yield the emissions (grams per day) shown in Tables 2-2 through 2-6 (*DPM Emission Estimates for Simulations 1 through 5*). Emissions for each direction of the transportation segment were estimated separately because VMT differs by direction. Additional calculation detail is presented in Appendix B.

The emissions calculated for calendar year 2040 are an over-estimate of what will actually occur, because EMFAC2014 only incorporates “on the books” regulations and emission reduction practices. Emissions from vehicles consistently decrease in the future as new technologies become available and new emission limits are required through regulations not yet enacted. Therefore, emissions in 2040 will be less than calculated herein even if the VMT forecasts are the same as currently estimated.

Table 2-1

Average Daily VMT for Selected Transportation Segments and Evaluation Simulations

SEG. NO.	TRANSPORT. SEGMENT	COUNTY/ REGION	DIRECTION	SIMULATION 1 (EXISTING CONDITIONS)		SIMULATION 2 (NO PROJECT ALTERNATIVE)		SIMULATION 3 (PROPOSED PROJECT)		SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)		SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)	
				LM	HD	LM	HD	LM	HD	LM	HD	LM	HD
1	IMP I-8	Imperial/ El Centro	East	18,222	3,592	191,039	30,683	25,337	11,402	25,684	11,364	25,734	11,339
1	IMP I-8	Imperial/ El Centro	West	21,350	3,740	115,930	14,854	26,101	11,565	26,567	11,519	26,612	11,487
2	IMP SR-78	Imperial/ Westmoreland	East	6,534	1,280	83,147	17,539	13,739	2,337	13,729	2,263	13,731	2,287
2	IMP SR-78	Imperial/ Westmoreland	West	6,425	1,316	83,147	17,539	8,242	2,492	8,221	2,418	8,225	2,427
3	LA I-110	Los Angeles/ Carson	North	164,091	16,205	185,613	41,203	146,588	24,157	138,972	23,539	139,279	23,686
3	LA I-110	Los Angeles/ Carson	South	159,370	14,486	143,830	27,204	144,655	21,464	138,737	20,874	137,658	21,046
4	LA I-710	Los Angeles/ Compton	North	178,750	23,385	172,963	28,986	168,817	24,245	165,574	24,677	167,305	24,030
4	LA I-710	Los Angeles/ Compton	South	133,387	21,271	143,043	23,015	162,915	21,235	158,749	21,609	160,316	21,136
5	LA SR-60 DB	Los Angeles/ Diamond Bar	East	382,009	40,737	443,407	63,590	324,880	38,900	322,875	39,502	320,534	39,881

Table 2-1 (continued)

Average Daily VMT for Selected Transportation Segments and Evaluation Simulations

SEG. NO.	TRANSPORT. SEGMENT	COUNTY/ REGION	DIRECTION	SIMULATION 1 (EXISTING CONDITIONS)		SIMULATION 2 (NO PROJECT ALTERNATIVE)		SIMULATION 3 (PROPOSED PROJECT)		SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)		SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)	
				LM	HD	LM	HD	LM	HD	LM	HD	LM	HD
5	LA SR-60 DB	Los Angeles/ Diamond Bar	West	382,164	40,328	441,273	76,771	365,183	35,510	361,180	36,844	362,669	36,647
6	LA SR-60 SEM	Los Angeles/ South El Monte	East	199,784	14,054	212,331	20,564	184,513	14,118	182,089	14,039	181,977	14,103
6	LA SR-60 SEM	Los Angeles/ South El Monte	West	209,315	15,714	205,494	24,648	198,120	16,318	196,074	16,103	197,128	15,975
7	ORA I-5	Orange/ Orange	North	214,774	10,227	134,257	21,222	197,793	19,225	197,857	19,018	195,497	19,319
7	ORA I-5	Orange/ Orange	South	151,474	6,449	147,059	20,241	120,747	12,079	120,743	12,045	119,133	12,062
8	ORA I-405	Orange/ Seal Beach	North	235,828	20,205	211,720	32,533	221,577	33,797	217,162	33,790	217,036	33,923
8	ORA I-405	Orange/ Seal Beach	South	217,558	18,590	204,150	35,706	203,061	31,231	200,359	31,149	199,867	31,326
9	RIV I-10	Riverside/ Banning	East	320,238	71,178	345,401	142,725	317,387	144,829	309,956	143,499	307,953	141,302
9	RIV I-10	Riverside/ Banning	West	315,658	70,605	439,457	142,301	372,726	143,184	365,219	141,836	362,630	139,692

Table 2-1 (continued)

Average Daily VMT for Selected Transportation Segments and Evaluation Simulations

SEG. NO.	TRANSPORT. SEGMENT	COUNTY/ REGION	DIRECTION	SIMULATION 1 (EXISTING CONDITIONS)		SIMULATION 2 (NO PROJECT ALTERNATIVE)		SIMULATION 3 (PROPOSED PROJECT)		SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)		SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)	
				LM	HD	LM	HD	LM	HD	LM	HD	LM	HD
10	RIV I-15	Riverside/ Temecula	North	291,514	31,564	357,646	52,487	469,031	75,978	467,052	75,882	467,016	75,897
10	RIV I-15	Riverside/ Temecula	South	347,213	37,377	393,680	62,533	555,310	91,002	553,597	90,864	553,334	90,970
11	RIV SR-91	Riverside/ Corona	East	280,666	34,243	166,975	30,609	279,241	42,928	279,032	43,468	276,171	43,193
11	RIV SR-91	Riverside/ Corona	West	262,746	35,070	332,865	72,033	261,128	45,127	261,691	45,686	259,551	45,549
12	SB I-15 ONT	San Bernardino/ Ontario	North	241,942	26,458	233,190	76,099	244,700	56,894	242,855	56,315	237,047	55,236
12	SB I-15 ONT	San Bernardino/ Ontario	South	249,613	26,679	602,894	126,917	227,670	58,753	226,754	58,633	219,210	57,152
13	SB I-15 VIC	San Bernardino/ Victorville	North	170,736	42,857	127,704	46,847	191,852	85,830	191,880	85,605	186,288	83,910
13	SB I-15 VIC	San Bernardino/ Victorville	South	163,348	42,614	250,931	74,054	178,052	88,524	177,731	88,343	171,351	86,521

Table 2-1 (continued)

Average Daily VMT for Selected Transportation Segments and Evaluation Simulations

SEG. NO.	TRANSPORT. SEGMENT	COUNTY/ REGION	DIRECTION	SIMULATION 1 (EXISTING CONDITIONS)		SIMULATION 2 (NO PROJECT ALTERNATIVE)		SIMULATION 3 (PROPOSED PROJECT)		SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)		SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)	
				LM	HD	LM	HD	LM	HD	LM	HD	LM	HD
14	SB SR-60	San Bernardino/ Ontario	East	257,591	44,530	226,731	43,641	243,107	33,829	239,792	34,038	291,240	38,446
14	SB SR-60	San Bernardino/ Ontario	West	248,515	42,065	156,404	34,971	236,083	30,221	232,920	30,838	231,384	31,159
15	VEN US-101 SB	Ventura/ San Buenaventura	North	173,653	14,154	278,353	45,072	163,426	29,060	163,992	28,969	163,132	28,992
15	VEN US-101 SB	Ventura/ San Buenaventura	South	168,566	15,027	105,970	16,030	163,698	30,050	164,327	30,022	163,667	30,100
16	VEN US-101 TO	Ventura/ Thousand Oaks	North	73,667	6,251	59,994	10,385	67,736	10,476	66,450	10,473	66,525	10,447
16	VEN US-101 TO	Ventura/ Thousand Oaks	South	87,449	7,614	121,575	16,092	81,120	12,661	79,638	12,646	79,292	12,626

Table 2-2

DPM Emission Estimates for Simulation 1: Existing Conditions

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	SEGMENT LENGTH (miles)	DIRECTION	PM₁₀ EMISSIONS (lbs/day)
1	IMP I-8	Imperial / El Centro	1.51	East	0.85
1	IMP I-8	Imperial / El Centro	1.51	West	0.93
2	IMP SR-78	Imperial / Westmoreland	0.88	East	0.30
2	IMP SR-78	Imperial / Westmoreland	0.88	East	0.31
3	LA I-110	Los Angeles / Carson	1.98	North	5.77
3	LA I-110	Los Angeles / Carson	1.92	South	5.42
4	LA I-710	Los Angeles / Compton	1.34	North	7.10
4	LA I-710	Los Angeles / Compton	1.34	South	5.84
5	LA SR-60 DB	Los Angeles / Diamond Bar	3.14	East	13.85
5	LA SR-60 DB	Los Angeles / Diamond Bar	2.98	West	13.80
6	LA SR-60 SEM	Los Angeles / South El Monte	1.52	East	6.22
6	LA SR-60 SEM	Los Angeles / South El Monte	1.50	West	6.65
7	ORA I-5	Orange / Orange	1.32	North	4.48
7	ORA I-5	Orange / Orange	1.32	South	3.02
8	ORA I-405	Orange / Seal Beach	1.09	North	6.55
8	ORA I-405	Orange / Seal Beach	1.02	South	6.03
9	RIV I-10	Riverside / Banning	5.01	East	16.72
9	RIV I-10	Riverside / Banning	4.98	West	16.55
10	RIV I-15	Riverside / Temecula	4.80	North	9.86
10	RIV I-15	Riverside / Temecula	5.84	South	11.71
11	RIV SR-91	Riverside / Corona	2.01	East	10.11
11	RIV SR-91	Riverside / Corona	1.76	West	9.95
12	SB I-15 ONT	San Bernardino / Ontario	2.95	North	6.29

Table 2-2 (continued)

DPM Emission Estimates for Simulation 1: Existing Conditions

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	SEGMENT LENGTH (miles)	DIRECTION	PM₁₀ EMISSIONS (lbs/day)
12	SB I-15 ONT	San Bernardino / Ontario	2.97	South	6.41
13	SB I-15 VIC	San Bernardino / Victorville	4.32	North	7.87
13	SB I-15 VIC	San Bernardino / Victorville	4.39	South	7.76
14	SB SR-60	San Bernardino / Ontario	2.35	East	9.02
14	SB SR-60	San Bernardino / Ontario	2.22	West	8.57
15	VEN US-101 SB	Ventura / San Buenaventura	0.79	North	5.79
15	VEN US-101 SB	Ventura / San Buenaventura	0.94	South	5.92
16	VEN US-101 TO	Ventura / Thousand Oaks	3.21	North	2.51
16	VEN US-101 TO	Ventura / Thousand Oaks	3.26	South	3.03

Table 2-3

DPM Emission Estimates for Simulation 2: No Project Alternative

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	SEGMENT LENGTH (miles)	DIRECTION	PM₁₀ EMISSIONS (lbs/day)
1	IMP I-8	Imperial / El Centro	1.51	East	0.44
1	IMP I-8	Imperial / El Centro	1.51	West	0.23
2	IMP SR-78	Imperial / Westmoreland	0.88	East	0.23
2	IMP SR-78	Imperial / Westmoreland	0.88	East	0.23
3	LA I-110	Los Angeles / Carson	1.98	North	0.63
3	LA I-110	Los Angeles / Carson	1.92	South	0.44
4	LA I-710	Los Angeles / Compton	1.34	North	0.49
4	LA I-710	Los Angeles / Compton	1.34	South	0.39
5	LA SR-60 DB	Los Angeles / Diamond Bar	3.14	East	1.13
5	LA SR-60 DB	Los Angeles / Diamond Bar	3.12	West	1.28
6	LA SR-60 SEM	Los Angeles / South El Monte	1.52	East	0.45
6	LA SR-60 SEM	Los Angeles / South El Monte	1.50	West	0.48
7	ORA I-5	Orange / Orange	1.32	North	0.28
7	ORA I-5	Orange / Orange	0.81	South	0.28
8	ORA I-405	Orange / Seal Beach	1.09	North	0.43
8	ORA I-405	Orange / Seal Beach	1.02	South	0.46
9	RIV I-10	Riverside / Banning	5.01	East	1.60
9	RIV I-10	Riverside / Banning	4.98	West	1.66
10	RIV I-15	Riverside / Temecula	4.81	North	0.73
10	RIV I-15	Riverside / Temecula	5.83	South	0.85
11	RIV SR-91	Riverside / Corona	2.01	East	0.40
11	RIV SR-91	Riverside / Corona	1.76	West	0.90

Table 2-3 (continued)

DPM Emission Estimates for Simulation 2: No Project Alternative

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	SEGMENT LENGTH (miles)	DIRECTION	PM₁₀ EMISSIONS (lbs/day)
12	SB I-15 ONT	San Bernardino / Ontario	2.95	North	0.86
12	SB I-15 ONT	San Bernardino / Ontario	2.97	South	1.52
13	SB I-15 VIC	San Bernardino / Victorville	4.32	North	0.52
13	SB I-15 VIC	San Bernardino / Victorville	4.39	South	0.85
14	SB SR-60	San Bernardino / Ontario	2.35	East	0.53
14	SB SR-60	San Bernardino / Ontario	2.22	West	0.42
15	VEN US-101 SB	Ventura / San Buenaventura	3.21	North	0.61
15	VEN US-101 SB	Ventura / San Buenaventura	3.26	South	0.22
16	VEN US-101 TO	Ventura / Thousand Oaks	0.79	North	0.14
16	VEN US-101 TO	Ventura / Thousand Oaks	0.94	South	0.23

Table 2-4

DPM Emission Estimates for Simulation 3: Proposed Project (2016 RTP/SCS)

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	SEGMENT LENGTH (miles)	DIRECTION	PM₁₀ EMISSIONS (lbs/day)
1	IMP I-8	Imperial / El Centro	1.51	East	0.13
1	IMP I-8	Imperial / El Centro	1.51	West	0.13
2	IMP SR-78	Imperial / Westmoreland	0.88	East	0.03
2	IMP SR-78	Imperial / Westmoreland	0.88	East	0.03
3	LA I-110	Los Angeles / Carson	1.98	North	0.41
3	LA I-110	Los Angeles / Carson	1.92	South	0.38
4	LA I-710	Los Angeles / Compton	1.34	North	0.44
4	LA I-710	Los Angeles / Compton	1.34	South	0.40
5	LA SR-60 DB	Los Angeles / Diamond Bar	3.14	East	0.76
5	LA SR-60 DB	Los Angeles / Diamond Bar	3.12	West	0.77
6	LA SR-60 SEM	Los Angeles / South El Monte	1.52	East	0.35
6	LA SR-60 SEM	Los Angeles / South El Monte	1.50	West	0.39
7	ORA I-5	Orange / Orange	1.32	North	0.29
7	ORA I-5	Orange / Orange	0.81	South	0.18
8	ORA I-405	Orange / Seal Beach	1.09	North	0.45
8	ORA I-405	Orange / Seal Beach	1.02	South	0.41
9	RIV I-10	Riverside / Banning	5.01	East	1.61
9	RIV I-10	Riverside / Banning	4.98	West	1.62
10	RIV I-15	Riverside / Temecula	4.81	North	1.02
10	RIV I-15	Riverside / Temecula	5.83	South	1.22
11	RIV SR-91	Riverside / Corona	2.01	East	0.59
11	RIV SR-91	Riverside / Corona	1.76	West	0.60
12	SB I-15 ONT	San Bernardino / Ontario	2.95	North	0.67

Table 2-4 (continued)

DPM Emission Estimates for Simulation 3: Proposed Project (2016 RTP/SCS)

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	SEGMENT LENGTH (miles)	DIRECTION	PM₁₀ EMISSIONS (lbs/day)
12	SB I-15 ONT	San Bernardino / Ontario	2.97	South	0.68
13	SB I-15 VIC	San Bernardino / Victorville	4.32	North	0.94
13	SB I-15 VIC	San Bernardino / Victorville	4.39	South	0.96
14	SB SR-60	San Bernardino / Ontario	2.35	East	0.44
14	SB SR-60	San Bernardino / Ontario	2.22	West	0.40
15	VEN US-101 SB	Ventura / San Buenaventura	3.21	North	0.39
15	VEN US-101 SB	Ventura / San Buenaventura	3.26	South	0.39
16	VEN US-101 TO	Ventura / Thousand Oaks	0.79	North	0.14
16	VEN US-101 TO	Ventura / Thousand Oaks	0.94	South	0.17

Table 2-5

DPM Emission Estimates for Simulation 4: 2012 RTP/SCS with Local Inputs Alternative

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	SEGMENT LENGTH (miles)	DIRECTION	PM ₁₀ EMISSIONS (lbs/day)
1	IMP I-8	Imperial / El Centro	1.51	East	0.13
1	IMP I-8	Imperial / El Centro	1.51	West	0.13
2	IMP SR-78	Imperial / Westmoreland	0.88	East	0.03
2	IMP SR-78	Imperial / Westmoreland	0.88	East	0.03
3	LA I-110	Los Angeles / Carson	1.98	North	0.40
3	LA I-110	Los Angeles / Carson	1.92	South	0.37
4	LA I-710	Los Angeles / Compton	1.34	North	0.44
4	LA I-710	Los Angeles / Compton	1.34	South	0.40
5	LA SR-60 DB	Los Angeles / Diamond Bar	3.14	East	0.76
5	LA SR-60 DB	Los Angeles / Diamond Bar	3.12	West	0.78
6	LA SR-60 SEM	Los Angeles / South El Monte	1.52	East	0.35
6	LA SR-60 SEM	Los Angeles / South El Monte	1.50	West	0.38
7	ORA I-5	Orange / Orange	1.32	North	0.29
7	ORA I-5	Orange / Orange	0.81	South	0.18
8	ORA I-405	Orange / Seal Beach	1.09	North	0.45
8	ORA I-405	Orange / Seal Beach	1.02	South	0.41
9	RIV I-10	Riverside / Banning	5.01	East	1.59
9	RIV I-10	Riverside / Banning	4.98	West	1.61
10	RIV I-15	Riverside / Temecula	4.81	North	1.02
10	RIV I-15	Riverside / Temecula	5.83	South	1.22
11	RIV SR-91	Riverside / Corona	2.01	East	0.59
11	RIV SR-91	Riverside / Corona	1.74	West	0.60
12	SB I-15 ONT	San Bernardino / Ontario	2.95	North	0.67

Table 2-5 (continued)

DPM Emission Estimates for Simulation 4: 2012 RTP/SCS with Local Inputs Alternative

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	SEGMENT LENGTH (miles)	DIRECTION	PM₁₀ EMISSIONS (lbs/day)
12	SB I-15 ONT	San Bernardino / Ontario	2.97	South	0.68
13	SB I-15 VIC	San Bernardino / Victorville	4.32	North	0.94
13	SB I-15 VIC	San Bernardino / Victorville	4.39	South	0.96
14	SB SR-60	San Bernardino / Ontario	2.35	East	0.44
14	SB SR-60	San Bernardino / Ontario	2.22	West	0.41
15	VEN US-101 SB	Ventura / San Buenaventura	3.21	North	0.38
15	VEN US-101 SB	Ventura / San Buenaventura	3.26	South	0.40
16	VEN US-101 TO	Ventura / Thousand Oaks	0.79	North	0.14
16	VEN US-101 TO	Ventura / Thousand Oaks	0.94	South	0.17

Table 2-6

DPM Emission Estimates for Simulation 5: Intensified Land Use Alternative

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	SEGMENT LENGTH (miles)	DIRECTION	PM₁₀ EMISSIONS (lbs/day)
1	IMP I-8	Imperial / El Centro	1.51	East	0.13
1	IMP I-8	Imperial / El Centro	1.51	West	0.13
2	IMP SR-78	Imperial / Westmoreland	0.88	East	0.03
2	IMP SR-78	Imperial / Westmoreland	0.88	East	0.03
3	LA I-110	Los Angeles / Carson	1.98	North	0.59
3	LA I-110	Los Angeles / Carson	1.92	South	0.55
4	LA I-710	Los Angeles / Compton	1.34	North	0.59
4	LA I-710	Los Angeles / Compton	1.34	South	0.55
5	LA SR-60 DB	Los Angeles / Diamond Bar	3.14	East	0.76
5	LA SR-60 DB	Los Angeles / Diamond Bar	3.12	West	0.78
6	LA SR-60 SEM	Los Angeles / South El Monte	1.52	East	0.35
6	LA SR-60 SEM	Los Angeles / South El Monte	1.50	West	0.38
7	ORA I-5	Orange / Orange	1.32	North	0.29
7	ORA I-5	Orange / Orange	0.81	South	0.18
8	ORA I-405	Orange / Seal Beach	0.45	North	1.09
8	ORA I-405	Orange / Seal Beach	0.41	South	1.02
9	RIV I-10	Riverside / Banning	5.01	East	1.57
9	RIV I-10	Riverside / Banning	4.98	West	1.58
10	RIV I-15	Riverside / Temecula	4.81	North	1.02
10	RIV I-15	Riverside / Temecula	5.83	South	1.22
11	RIV SR-91	Riverside / Corona	2.01	East	0.59
11	RIV SR-91	Riverside / Corona	1.76	West	0.60
12	SB I-15 ONT	San Bernardino / Ontario	2.95	North	0.65

Table 2-6 (continued)

DPM Emission Estimates for Simulation 5: Intensified Land Use Alternative

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	SEGMENT LENGTH (miles)	DIRECTION	PM₁₀ EMISSIONS (lbs/day)
12	SB I-15 ONT	San Bernardino / Ontario	2.97	South	0.66
13	SB I-15 VIC	San Bernardino / Victorville	4.32	North	0.92
13	SB I-15 VIC	San Bernardino / Victorville	4.39	South	0.94
14	SB SR-60	San Bernardino / Ontario	2.35	East	0.56
14	SB SR-60	San Bernardino / Ontario	2.22	West	0.45
15	VEN US-101 SB	Ventura / San Buenaventura	3.21	North	0.37
15	VEN US-101 SB	Ventura / San Buenaventura	3.26	South	0.38
16	VEN US-101 TO	Ventura / Thousand Oaks	0.79	North	0.14
16	VEN US-101 TO	Ventura / Thousand Oaks	0.94	South	0.16

2.4 RECEPTORS OF INTEREST

Health risk is assessed at locations where persons can be exposed to the emissions. These locations are termed receptors. Receptors are classified according to what persons may be doing at the location. The receptor types are residential, work, or sensitive. Sensitive receptors include day care centers, schools, and senior centers. Residential and worker receptors within 1000 meters of each transportation segment, starting about 100 meters away from the outer edge of the freeway, were determined based on aerial photos of the transportation segment. The 1000 meter criterion was used to sufficiently capture where the health impacts may be expected to occur. Sensitive receptors were identified from the TomTom and TeleAtlas databases, and there are over 100 sensitive receptors in the vicinity of the 16 study segments. All of the receptors are shown on Figures C-1 through C-16 (*Modeled Receptors Segments 1 through 16*) in Appendix C. In areas where there were multiple residences and possible worker locations, receptors were placed in a grid pattern with 100-meter spacing out to 500 meters from the transportation segment and 250-meter spacing out to 1000 meters. The receptors were placed at UTM coordinates at even-100 meter locations (e.g., UTM 330100, 3782400) so that the model results could be input into the HARP 2 risk assessment model if needed (see Section 3.3). Actual physical mean sea level elevation of the receptors was used in the dispersion model, with the elevation data obtained from U.S. Geological Survey (USGS) Digital Elevation Model/Geographic Information System (DEM/GIS) data.

In addition to individual actual receptors, two additional sets of hypothetical receptors were evaluated. Risk calculations were conducted for the maximum impact point based on an assumption that any of the various receptor types (e.g., resident, worker, school, day care center, senior center) could be located at the maximum impact point using Segment 8, ORA I-405 (Interstate 405 in the Seal Beach area). A set of hypothetical receptors was used to show how the potential health risk decreases rapidly with distance away from the transportation segment using Segment 4, LA I-710 in the Compton area and Simulation 1 – Existing Conditions (see Section 3.4). The hypothetical receptor analysis also accounts for the possibility that in some cases there may be actual receptors closer to the freeway than 100 meters.

2.5 ATMOSPHERIC DISPERSION MODELING AND IMPACT ASSESSMENT

The CARB-approved AERMOD dispersion model (Version 15181, as provided by BEE-Line Software, Version 11.01) was used and run with regulatory defaults as required by the Air Districts. The three primary inputs to the AERMOD model are the emissions, receptors, and meteorological data. Worst-case meteorological data provided by the relevant Air Districts (South

Coast, Ventura, Imperial) were used as shown in Table 2-7 (*Meteorological Data Used for Dispersion Modeling*). The meteorological data are selected and provided by the Air Districts to be used in the AERMOD model for all dispersion modeling. The calendar years of meteorological data provided by the Air Districts is not intended to match the calendar years in which a source is or will be emitting, as the Districts select a worst-case set of data to be used for all modeling in the District. The nearest representative meteorological station to each of the transportation segments was used.

Table 2-7

Meteorological Data Used for Dispersion Modeling

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	METEOROLOGICAL DATA SITE	YEARS OF METEOROLOGICAL DATA
1	IMP I-8	Imperial / El Centro	Indio	2007, 08, 09, 10, 12
2	IMP SR-78	Imperial / Westmoreland	Indio	2007, 08, 09, 10, 12
3	LA I-110	Los Angeles / Carson	Long Beach	2007, 08, 09, 11, 12
4	LA I-710	Los Angeles / Compton	Lynnwood	2006, 07, 09
5	LA SR-60 DB	Los Angeles / Diamond Bar	Pomona	2008, 09, 10, 11, 12
6	LA SR-60 SEM	Los Angeles / South El Monte	Pico Rivera	2008, 09, 10, 11, 12
7	ORA I-5	Orange / Orange	Anaheim	2006, 07, 08, 09, 12
8	ORA I-405	Orange / Seal Beach	Long Beach	2007, 08, 09, 11, 12
9	RIV I-10	Riverside / Banning	Banning Airport	2008, 09, 10, 11, 12
10	RIV I-15	Riverside / Temecula	Lake Elsinore	2008, 09, 10, 11, 12
11	RIV SR-91	Riverside / Corona	La Habra	2008, 09, 10, 11, 12
12	SB I-15 ONT	San Bernardino / Ontario	Fontana	2008, 09, 10, 11, 12
13	SB I-15 VIC	San Bernardino / Victorville	San Bernardino	2007, 08, 09, 10, 11
14	SB SR-60	San Bernardino / Ontario	Upland	2008, 09, 10, 11, 12
15	VEN US-101 SB	Ventura / San Buenaventura	Reseda	2008, 09, 10, 11, 12
16	VEN US-101 TO	Ventura / Thousand Oaks	Reseda	2008, 09, 10, 11, 12

The transportation segments were modeled as a series of volume sources for each direction of the freeway. The volume sources are square in plan view (i.e., looking from above) with the width equal to the physical transportation segment width for each direction plus 3 meters to account for initial mechanical turbulence. Adding 3 meters to the volume source is standard practice per Caltrans and CARB modeling guidance for roadway dispersion modeling. To be conservative,

only one 3-meter addition was made (i.e., to the outside of the roadway) because in many cases the inside edge of the volume sources are adjacent (i.e., there is no median, only a concrete barrier separating the different directions). The release height for the emissions was also conservatively chosen as 2 meters to represent the average height of HDDT and other diesel-fueled vehicle exhausts. No elevated transportation segments were modeled (i.e., no overpasses or elevated or depressed on or off-ramps). Actual physical mean sea level elevation of the transportation segment volume sources was used, obtained from USGS DEM/GIS data.

In order to reduce computation time, a one-mile portion of the transportation segment was modeled. The modeled mile was chosen to encompass the most sensitive receptors. As discussed previously, a one-mile modeled portion of the transportation segment will yield the same maximum impact concentrations as a longer portion.

For purposes of the dispersion model, unit emission rates (i.e., 1 gram per second [g/sec]) for each direction were entered into the model. Thus, the dispersion model yields “relative impact concentrations” in terms of concentration per unit emission rate (micrograms per cubic meter / gram per second, or $\mu\text{g}/\text{m}^3 / \text{g}/\text{sec}$). The relative concentration ($\mu\text{g}/\text{m}^3 / \text{g}/\text{sec}$) can then be multiplied by the emission rate (g/sec) for the transportation segment to obtain the impact concentration ($\mu\text{g}/\text{m}^3$).

The maximum impact dispersion model results for each of the segments are shown in Appendix D and electronic copies of the model input.

2.6 HEALTH RISK ASSESSMENT

The DPM concentrations determined by the dispersion model at the receptors of interest were used to evaluate the potential carcinogenic risk of the five simulations. Cancer risk was used as a surrogate for all associated health risks since it is known that near major freeways and transportation corridors the greatest potential health effect is from DPM emissions and long term carcinogenesis (see Section 3.5).

As stated previously, only DPM emissions are estimated with the EMFAC emissions model, and there are an additional four major carcinogenic air toxics (i.e., acetaldehyde, benzene, 1,3-butadiene, and formaldehyde) that are emitted by vehicles. Other air toxics can be estimated using a US Environmental Protection Agency (USEPA) emissions model, MOVES2014. The MOVES2014 model replaces the previous USEPA emissions model for mobile sources called

MOBILE6.2a. The 2012-2035 PEIR⁵ demonstrated that 96.3 percent of the total cancer risk was due to DPM, with the additional four air toxics contributing only 3.7 percent. However, the 2012-2035 PEIR used the MOBILE6.2a emissions model. Therefore, an analysis was conducted to determine if the same ratio would result if the current MOVES2014 emissions model were used. The analysis showed that when the MOVES2014 emissions model is used, DPM was responsible for nearly 99 percent of the total risk from heavy duty diesel trucks and from 96.1 to 96.3 percent of the total risk for all vehicle classes⁶. Accordingly for purposes of the health risk assessment, the potential health risk calculated by using only DPM was conservatively increased by 5 percent to account for the additional air toxics of acetaldehyde, benzene, 1,3-butadiene, and formaldehyde (see Appendix E for further details).

2.6.1 Residential Cancer Risk

For a given ambient concentration of DPM, the potential cancer risk is a function of the types of persons exposed (adults, children, pregnant women, etc.) and the duration of exposure. The California Office of Environmental Health and Hazard Assessment (OEHHA) has published guidelines for calculating potential cancer risk. The most recent version of the guidelines, Air Toxic Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments dated February 2015⁷ (Guidance), was used to calculate the DPM cancer risk for each of the segments using the Guidance (see Appendix D). Consistent with the Guidance, potential cancer risk is calculated by first determining the dose of DPM and then multiplying the dose times the exposure duration and cancer potency factor, as shown in the following equation:

⁵ *Program Environmental Impact Report, op cit.* Appendix F.

⁶ Letter from James Dill and Russell Erbes to Mr. Eric Charlton dated February 3, 2015. Available from Mr. Eric Charlton, Sapphos Environmental, Inc.

⁷ *Air Toxic Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February 2015. California Office of Environmental Health Hazard Assessment. Available at http://oehha.ca.gov/air/hot_spots/hotspots2015.html, last accessed September 2015.

Residential Dose (Guidance Equation 5.4.1):

$$\text{Dose-air} = C_{\text{air}} \times \{\text{BR/BW}\} \times A \times \text{EF} \times 10^{-6}$$

Where,

Dose-air = dose through inhalation, mg/kg/d (only the inhalation pathway is applicable to DPM)

C_{air} = annual average concentration of DPM at the receptor of interest, ug/m³

{BR/BW} = Daily breathing rate normalized to body weight, L/kg body weight-day

A = Inhalation absorption factor, unitless, assumed equal to 1

EF = Exposure frequency, unitless, calculated from days exposure per 365 days

10⁻⁶ = conversion factor micrograms to milligrams and liters to cubic meters

The Guidance recommends that for residential exposure the EF is 350/365 and for {BR/BW} that the 95th percentile daily breathing rates should be used (Guidance Table 5.6). The 95th percentile breathing rates are as follows:

Third Trimester = 361 L/kg-day

0 to <2 years = 1090 L/kg-day

2 to <9 years = 861 L/kg-day

2 to <16 years = 745 L/kg-day

16 to <30 years = 335 L/kg-day

16 to <70 years = 290 L/kg-d

Residential Cancer Risk (Guidance Equation 8.2.4A)

$$\text{RISK}_{\text{inh-res}} = \text{Dose-air} \times \text{CPF} \times \text{ASF} \times \text{ED/AT} \times \text{FAH}$$

Where,

CPF = cancer potency factor, which for DPM is 1.1 (mg/kg/day)⁻¹

ASF = Age sensitivity factor, unitless

ED = Exposure Duration, years, for the specified age group

AT = Averaging Time for lifetime cancer risk, which is 70 years

FAH = Fraction of Time at Home, unitless

The Guidance recommends the following Age Sensitivity Factors (Guidance Table 8.3):

3rd Trimester	10
0 to <2 years	10
2 to <9 years	3
9 to <16 years	3
16 to <30 years	1
30 to <70 years	1

The Guidance recommends the following Fraction of Time at Home when there is a school within the 1 in a million cancer risk isopleth of the source, which is nearly always the case for freeways (Guidance Table 8.4):

3rd Trimester	1.0
0 to <2 years	1.0
2 to <9 years	1.0
9 to <16 years	1.0
16 to <30 years	0.73
30 to <70 years	0.73

When one combines the equation for Dose-air and for $RISK_{inh-res}$, the 30-year residential cancer risk is calculated as follows:

Residential 30-Year Exposure DPM Cancer Risk =

$$\begin{aligned}
 & [(C_{air} \times 361 \times 350/365 \times 10^{-6} \times 1.1 \times 10) \times (0.25 \text{ yrs} / 70 \text{ yrs}) \times 1.0]_{\text{third trimester}} + \\
 & [(C_{air} \times 1090 \times 350/365 \times 10^{-6} \times 1.1 \times 10) \times (2 \text{ yrs} / 70 \text{ yrs}) \times 1.0]_{0 \text{ to } <2 \text{ yrs}} + \\
 & [(C_{air} \times 745 \times 350/365 \times 10^{-6} \times 1.1 \times 3) \times (14 \text{ yrs} / 70 \text{ yrs}) \times 1.0]_{2 \text{ to } <16 \text{ yrs}} + \\
 & [(C_{air} \times 335 \times 350/365 \times 10^{-6} \times 1.1 \times 1) \times (14 \text{ yrs} / 70 \text{ yrs}) \times 0.73]_{16 \text{ to } <30 \text{ yrs}}
 \end{aligned}$$

The Guidance recommends that cancer risk be reported assuming 30-year exposure for residential receptors. The 30-year duration is the national 95th percentile of the duration that persons reside at one location. However, as a point of reference, the Guidance suggests that both 9-year exposure duration and 70-year exposure duration should be noted. A 70-year exposure assumes that a person never moves from the location he or she was born. The 9-year exposure represents the national median duration that a person resides in the same location. The 9-year and 70-year cancer risk is calculated as follows:

Residential 9-Year Exposure DPM Cancer Risk =

$$\begin{aligned} & [(C_{\text{air}} \times 361 \times 350/365 \times 10^{-6} \times 1.1 \times 10) \times (0.25 \text{ yrs} / 70 \text{ yrs}) \times 1.0]_{\text{third trimester}} + \\ & [(C_{\text{air}} \times 1090 \times 350/365 \times 10^{-6} \times 1.1 \times 10) \times (2 \text{ yrs} / 70 \text{ yrs}) \times 1.0]_{0 \text{ to } <2 \text{ yrs}} + \\ & [(C_{\text{air}} \times 861 \times 350/365 \times 10^{-6} \times 1.1 \times 3) \times (7 \text{ yrs} / 70 \text{ yrs}) \times 1.0]_{2 \text{ to } <9 \text{ yrs}} \end{aligned}$$

Residential 70-Year Exposure DPM Cancer Risk =

$$\begin{aligned} & [(C_{\text{air}} \times 361 \times 350/365 \times 10^{-6} \times 1.1 \times 10) \times (0.25 \text{ yrs} / 70 \text{ yrs}) \times 1.0]_{\text{third trimester}} + \\ & [(C_{\text{air}} \times 1090 \times 350/365 \times 10^{-6} \times 1.1 \times 10) \times (2 \text{ yrs} / 70 \text{ yrs}) \times 1.0]_{0 \text{ to } <2 \text{ yrs}} + \\ & [(C_{\text{air}} \times 745 \times 350/365 \times 10^{-6} \times 1.1 \times 3) \times (14 \text{ yrs} / 70 \text{ yrs}) \times 1.0]_{2 \text{ to } <16 \text{ yrs}} + \\ & [(C_{\text{air}} \times 290 \times 350/365 \times 10^{-6} \times 1.1 \times 1) \times (54 \text{ yrs} / 70 \text{ yrs}) \times 0.73]_{16 \text{ to } <70 \text{ yrs}} \end{aligned}$$

To account for the additional air toxics, the DPM cancer risk was multiplied by a factor of 1.05 to arrive at the total risk.

2.6.2 Worker Cancer Risk

The same equations that are used for calculating residential cancer risk are used for calculating worker risk, however some of the parameters change to reflect worker versus residential exposure. For workers, it is assumed that a person works at the same place for 25 years, starting at age 16. It is also assumed the worker could be pregnant while working, so the third trimester exposure is included in the risk calculation. The 95th percentile breathing rates for residents are different than for workers, which for workers are 240 L/kg-day for the third trimester and 230 L/kg-day for age 16 to 70 (Guidance Section 5.4.1.2). No "Fraction of Time at Home" factor is used for workers; but the EF is assumed to be 5 days per week, 50 weeks per year, or 250 days out of 365. Accordingly, the worker cancer risk is calculated as follows:

Worker 25-Year Exposure DPM Cancer Risk =

$$\begin{aligned} & [(C_{\text{air}} \times 240 \times 250/365 \times 10^{-6} \times 1.1 \times 10) \times (0.25 \text{ yrs} / 70 \text{ yrs})]_{\text{third trimester}} + \\ & [(C_{\text{air}} \times 230 \times 250/365 \times 10^{-6} \times 1.1 \times 1) \times (25 \text{ yrs} / 70 \text{ yrs})]_{16 \text{ to } <70 \text{ yrs}} \end{aligned}$$

The worker cancer risk formula applies to all types of workers, including workers who may be working at sensitive receptors such as day care centers. To account for the additional air toxics, the DPM cancer risk was multiplied by a factor of 1.05 to arrive at the total risk.

2.6.3 Day Care Center Children Cancer Risk

For children who attend a day care center, cancer risk is calculated similarly to residential with factors in the equations changed to reflect children and day care exposure. The Guidance recommends a breathing rate of 1200 L/kg-day for age 0 to <2 years and 640 L/kg-day for 2 to <9 years (Guidance Section 5.4.1.3) for children at day care centers. The duration is assumed to be 250 days per year for 6 years. The formula for day care center children cancer risk is as follows:

Day Care Center Children 6-year DPM Cancer Risk =

$$[(C_{\text{air}} \times 1200 \times 250/365 \times 10^{-6} \times 1.1 \times 10) \times (2 \text{ yrs} / 70 \text{ yrs})]_{0 \text{ to } <2 \text{ years}} + [(C_{\text{air}} \times 640 \times 250/365 \times 10^{-6} \times 1.1 \times 3) \times (4 \text{ yrs} / 70 \text{ yrs})]_{2 \text{ to } <6 \text{ yrs}}$$

To account for the additional air toxics, the DPM cancer risk was multiplied by a factor of 1.05 to arrive at the total risk.

2.6.4 School Children Cancer Risk

For children who attend elementary, middle or high school, cancer risk is calculated similarly to the day care center children. Elementary school duration is 7 years (kindergarten through sixth grade), middle school is 2 or 3 years (seventh through eighth or ninth grade) and high school is 3 or 4 years (ninth or tenth grade through twelfth grade). The longest duration and the largest Age Sensitivity Factors occur for elementary school, and thus elementary school exposure was used as the worst-case. It was assumed that children attend school 5 days per week for 36 weeks less 3 weeks of vacation, or 165 days per year. The Guidance recommends a school children breathing rate of 520 L/kg-day (Guidance Section 5.4.1.3). A worst case calculation was used for all school children as follows:

School Children 7-year DPM Cancer Risk =

$$[(C_{\text{air}} \times 520 \times 165/365 \times 10^{-6} \times 1.1 \times 3) \times (7 \text{ yrs} / 70 \text{ yrs})]_{2 \text{ to } <16 \text{ years}}$$

To account for the additional air toxics, the DPM cancer risk was multiplied by a factor of 1.05 to arrive at the total risk.

2.6.5 Senior Center Cancer Risk

The cancer risk for senior center residents was calculated similarly to the residential cancer risk, although it was assumed that a senior center resident did not arrive at the center full time until the person was over the age of 30 and that a person would not reside at the same senior center for more than 30 years. It was also conservatively assumed that the person never left the senior center, so the Exposure Frequency was continuous over 365 days and there is no Fraction of Time at Home factor. The risk was calculated as follows:

Senior Center 30-Year Exposure DPM Cancer Risk =

$$[(C_{\text{air}} \times 290 \times 365/365 \times 10^{-6} \times 1.1 \times 1) \times (30 \text{ yrs} / 70 \text{ yrs})]_{30 \text{ to } <70 \text{ yrs}}$$

To account for the additional air toxics, the DPM cancer risk was multiplied by a factor of 1.05 to arrive at the total risk.

2.6.6 Hot Spots Analysis and Reporting Program (HARP)

CARB has published a computer model that can automatically calculate the cancer risk for residential and worker exposures. This program is called the Hot Spots Analysis and Reporting Program Version 2 (HARP 2). The above equations were for the inhalation pathway only, but it is easy to see that calculating cancer risk for chemicals that have multi-pathway exposures can become quite complex. Therefore, HARP 2 automates the calculations using the above equations and additional equations for all chemicals and pathways. Some regulatory agencies require air toxic health risk assessments be conducted with HARP 2. For DPM, HARP 2 will yield the same results (accounting for round-off differences) as the above equations. To confirm that the spreadsheet calculations performed in this health risk assessment match the results that would be obtained with HARP 2, the HARP 2 model was run for one of the transportation segments and the results compared to the spreadsheet calculations as discussed in Section 3.3.

3 HEALTH RISK ASSESSMENT RESULTS

3.1 MAXIMUM RESIDENTIAL AND WORKER RISKS

The maximum exposed individual resident (MEIR) and the maximum exposed individual worker risk results for each of the segments for each of the evaluated simulations are summarized in Tables 3-1 through 3-4 (*Maximum Exposed Individual Residential Cancer Risk for 30-year, 9-year, and 70-year Exposure*, respectively). The calculated results include the 5 percent increase to DPM-only risk to account for additional air toxics, which include acetaldehyde, benzene, 1,3-butadiene, and formaldehyde. The results are expressed as the incremental cancer risk per million exposed persons. The residential risk for Simulations 2 through 5 ranges from 93 in a million to 9 in a million cancer risk for 30-year exposure (Table 3-1), 66 in a million to 6 in a million cancer risk for 9-year exposure (Table 3-2), and 106 in a million to 10 in a million cancer risk for 70-year exposure (Table 3-3). The exposed worker risk for Simulations 2 through 5 ranges from 7 in a million to 1 in a million cancer risk (Table 3-4). Risk calculation details are provided in Appendix D, and output files showing all of the receptor concentrations are contained in Appendix F.

Table 3-1

**Maximum Exposed Individual Residential 30-year Exposure Cancer Risk
(cancer risk per million exposed persons)**

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY/ REGION	SIMULATION 1 (EXISTING CONDITIONS)	SIMULATION 2 (NO PROJECT ALTERNATIVE)	SIMULATION 3 (PROPOSED PROJECT)	SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)	SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)
1	IMP I-8	Imperial / El Centro	125	44	19	19	18
2	IMP SR-78	Imperial / Westmoreland	82	64	9	9	9
3	LA I-110	Los Angeles / Carson	664	62	46	45	45
4	LA I-710	Los Angeles / Compton	847	58	55	55	54
5	LA SR-60 DB	Los Angeles / Diamond Bar	1,101	93	60	60	60
6	LA SR-60 SEM	Los Angeles / South El Monte	763	55	44	43	43
7	ORA I-5	Orange / Orange	455	40	33	32	33
8	ORA I-405	Orange / Seal Beach	1,142	81	78	78	78
9	RIV I-10	Riverside / Banning	152	15	15	15	14
10	RIV I-15	Riverside / Temecula	366	27	38	38	38
11	RIV SR-91	Riverside / Corona	937	64	55	56	56
12	SB I-15 ONT	San Bernardino / Ontario	236	46	25	25	25
13	SB I-15 VIC	San Bernardino / Victorville	524	48	64	64	62
14	SB SR-60	San Bernardino / Ontario	125	44	39	39	47
15	VEN US-101 SB	Ventura / San Buenaventura	82	12	11	11	11
16	VEN US-101 TO	Ventura / Thousand Oaks	664	54	48	48	45

Table 3-2

**Maximum Exposed Individual Residential 9-year Exposure Cancer Risk
(cancer risk per million exposed persons)**

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY/ REGION	SIMULATION 1 (EXISTING CONDITIONS)	SIMULATION 2 (NO PROJECT ALTERNATIVE)	SIMULATION 3 (PROPOSED PROJECT)	SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)	SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)
1	IMP I-8	Imperial / El Centro	89	32	13	13	13
2	IMP SR-78	Imperial / Westmoreland	58	45	6	6	6
3	LA I-110	Los Angeles / Carson	471	44	33	32	32
4	LA I-710	Los Angeles / Compton	602	41	39	39	40
5	LA SR-60 DB	Los Angeles / Diamond Bar	782	66	42	43	43
6	LA SR-60 SEM	Los Angeles / South El Monte	542	39	31	31	31
7	ORA I-5	Orange / Orange	323	28	23	23	23
8	ORA I-405	Orange / Seal Beach	811	58	56	55	56
9	RIV I-10	Riverside / Banning	108	11	11	10	10
10	RIV I-15	Riverside / Temecula	260	19	27	27	27
11	RIV SR-91	Riverside / Corona	665	46	39	40	39
12	SB I-15 ONT	San Bernardino / Ontario	168	32	18	18	17
13	SB I-15 VIC	San Bernardino / Victorville	372	34	46	45	44
14	SB SR-60	San Bernardino / Ontario	576	32	28	28	33
15	VEN US-101 SB	Ventura / San Buenaventura	117	9	8	8	8
16	VEN US-101 TO	Ventura / Thousand Oaks	591	39	34	34	32

Table 3-3

**Maximum Exposed Individual Residential 70-year Exposure Cancer Risk
(cancer risk per million exposed persons)**

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY/ REGION	SIMULATION 1 (EXISTING CONDITIONS)	SIMULATION 2 (NO PROJECT ALTERNATIVE)	SIMULATION 3 (PROPOSED PROJECT)	SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)	SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)
1	IMP I-8	Imperial / El Centro	143	51	21	21	21
2	IMP SR-78	Imperial / Westmoreland	94	73	10	10	10
3	LA I-110	Los Angeles / Carson	756	71	53	52	52
4	LA I-710	Los Angeles / Compton	965	66	63	63	62
5	LA SR-60 DB	Los Angeles / Diamond Bar	1,255	106	68	68	69
6	LA SR-60 SEM	Los Angeles / South El Monte	870	63	50	49	49
7	ORA I-5	Orange / Orange	518	46	37	37	37
8	ORA I-405	Orange / Seal Beach	1,302	93	89	89	89
9	RIV I-10	Riverside / Banning	173	17	17	17	16
10	RIV I-15	Riverside / Temecula	418	31	43	43	43
11	RIV SR-91	Riverside / Corona	1,067	73	63	64	63
12	SB I-15 ONT	San Bernardino / Ontario	269	52	29	29	28
13	SB I-15 VIC	San Bernardino / Victorville	598	55	73	73	71
14	SB SR-60	San Bernardino / Ontario	923	51	44	45	54
15	VEN US-101 SB	Ventura / San Buenaventura	188	14	13	13	12
16	VEN US-101 TO	Ventura / Thousand Oaks	949	62	55	54	51

Table 3-4

**Maximum Exposed Individual Worker Cancer Risk
(cancer risk per million exposed persons)**

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY/ REGION	SIMULATION 1 (EXISTING CONDITIONS)	SIMULATION 2 (NO PROJECT ALTERNATIVE)	SIMULATION 3 (PROPOSED PROJECT)	SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)	SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)
1	IMP I-8	Imperial / El Centro	8	3	1	1	1
2	IMP SR-78	Imperial / Westmoreland	9	7	1	1	1
3	LA I-110	Los Angeles / Carson	52	5	4	4	4
4	LA I-710	Los Angeles / Compton	33	2	2	2	2
5	LA SR-60 DB	Los Angeles / Diamond Bar	62	5	3	3	3
6	LA SR-60 SEM	Los Angeles / South El Monte	56	4	3	3	3
7	ORA I-5	Orange / Orange	22	2	2	2	2
8	ORA I-405	Orange / Seal Beach	47	3	3	3	3
9	RIV I-10	Riverside / Banning	23	2	2	2	2
10	RIV I-15	Riverside / Temecula	48	4	5	5	5
11	RIV SR-91	Riverside / Corona	78	5	5	5	5
12	SB I-15 ONT	San Bernardino / Ontario	19	4	2	2	2
13	SB I-15 VIC	San Bernardino / Victorville	22	2	3	3	3
14	SB SR-60	San Bernardino / Ontario	63	3	3	3	4
15	VEN US-101 SB	Ventura / San Buenaventura	27	2	2	2	2
16	VEN US-101 TO	Ventura / Thousand Oaks	46	3	3	3	3

The 30-year exposure residential cancer risk is greater than the worker cancer risk in all segments and evaluation simulations (Tables 3-2 and 3-4). The largest MEIR cancer risk occurs for Segment 8, ORA I-405. For this transportation segment, Simulation 1 (Existing Conditions) causes the greatest cancer risk, and Simulation 4 (2012 RTP/SCS Update with Local Input Alternative) causes the least cancer risk. For 30-year maximum residential exposure at the ORA I-405 transportation segment, Simulation 4 is about 8 percent of the Simulation 1.

The 9-year exposure cancer risk is about 30 percent less than the 30-year exposure cancer risk (Tables 3-1 and 3-2). The 70-year exposure cancer risk is about 14 percent greater than the 30-year exposure cancer risk (Tables 3-1 and 3-3).

3.2 MAXIMUM SENSITIVE RECEPTOR RISKS

Three types of sensitive receptors were evaluated where the calculation of risk differs from a residential or a worker receptor: day care centers, schools, and senior centers. Other sensitive receptors such as churches and hospitals were represented either by a worker receptor (e.g., the risk to hospital workers or church workers are the same as other workers) or the duration of exposure is much less than at a senior center (e.g., patients at a hospital do not stay in the hospital for 30 years as it was assumed for senior centers and persons attending church spend much less time at church than at home). The risks associated with these receptors is shown in Tables 3-5 through 3-7 (*Maximum Exposed Cancer Risk [cancer risk per million exposed persons] for Day Care Center Children, School Children, and Senior Center, respectively*)

The risk at all other sensitive receptors are the same or less than those shown in the tables. It is important to note that not all segments had all three types of sensitive receptors present within 1000 meters of the transportation segment. In that case, an entry of "NR" (no receptor) was made in the tables.

Table 3-5

**Maximum Exposed Day Care Center Children Risk
(cancer risk per million exposed persons)**

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY/ REGION	SIMULATION 1 (EXISTING CONDITIONS)	SIMULATION 2 (NO PROJECT ALTERNATIVE)	SIMULATION 3 (PROPOSED PROJECT)	SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)	SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)
1	IMP I-8	Imperial / El Centro	18	6	3	3	3
2	IMP SR-78	Imperial / Westmoreland	20	16	2	2	2
3	LA I-110	Los Angeles / Carson	29	3	2	2	2
4	LA I-710	Los Angeles / Compton	90	6	6	6	6
5	LA SR-60 DB	Los Angeles / Diamond Bar	236	20	13	3	13
6	LA SR-60 SEM	Los Angeles / South El Monte	46	3	3	3	3
7	ORA I-5	Orange / Orange	31	3	2	2	2
8	ORA I-405	Orange / Seal Beach	NR	NR	NR	NR	NR
9	RIV I-10	Riverside / Banning	26	3	3	3	3
10	RIV I-15	Riverside / Temecula	81	6	8	8	8
11	RIV SR-91	Riverside / Corona	NR	NR	NR	NR	NR
12	SB I-15 ONT	San Bernardino / Ontario	NR	NR	NR	NR	NR
13	SB I-15 VIC	San Bernardino / Victorville	51	4	6	6	6
14	SB SR-60	San Bernardino / Ontario	57	3	3	3	3
15	VEN US-101 SB	Ventura / San Buenaventura	13	1	1	1	1
16	VEN US-101 TO	Ventura / Thousand Oaks	132	9	8	8	7

NR = No sensitive receptor of this type located within 1000 meters of the transportation segment.

Table 3-6

**Maximum Exposed School Children Cancer Risk
(cancer risk per million exposed persons)**

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY/ REGION	SIMULATION 1 (EXISTING CONDITIONS)	SIMULATION 2 (NO PROJECT ALTERNATIVE)	SIMULATION 3 (PROPOSED PROJECT)	SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)	SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)
1	IMP I-8	Imperial / El Centro	2	1	0.3	0.3	0.3
2	IMP SR-78	Imperial / Westmoreland	3	2	0.3	0.3	0.3
3	LA I-110	Los Angeles / Carson	34	3	2	2	2
4	LA I-710	Los Angeles / Compton	33	2	2	2	2
5	LA SR-60 DB	Los Angeles / Diamond Bar	20	2	1	1	1
6	LA SR-60 SEM	Los Angeles / South El Monte	18	1	1	1	1
7	ORA I-5	Orange / Orange	3	0.3	0.2	0.2	0.2
8	ORA I-405	Orange / Seal Beach	NR	NR	NR	NR	NR
9	RIV I-10	Riverside / Banning	5	1	1	1	1
10	RIV I-15	Riverside / Temecula	39	3	4	4	4
11	RIV SR-91	Riverside / Corona	NR	NR	NR	NR	NR
12	SB I-15 ONT	San Bernardino / Ontario	NR	NR	NR	NR	NR
13	SB I-15 VIC	San Bernardino / Victorville	18	2	2	2	2
14	SB SR-60	San Bernardino / Ontario	13	1	1	1	1
15	VEN US-101 SB	Ventura / San Buenaventura	9	1	1	1	1
16	VEN US-101 TO	Ventura / Thousand Oaks	40	3	2	2	2

NR = No sensitive receptor of this type located within 1000 meters of the transportation segment.

Table 3-7

**Maximum Exposed Senior Center Cancer Risk
(cancer risk per million exposed persons)**

SEG. NO.	TRANSPORTATION SEGMENT	COUNTY/ REGION	SIMULATION 1 (EXISTING CONDITIONS)	SIMULATION 2 (NO PROJECT ALTERNATIVE)	SIMULATION 3 (PROPOSED PROJECT)	SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)	SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)
1	IMP I-8	Imperial / El Centro	NR	NR	NR	NR	NR
2	IMP SR-78	Imperial / Westmoreland	8	6	1	1	1
3	LA I-110	Los Angeles / Carson	21	2	2	1	1
4	LA I-710	Los Angeles / Compton	10	1	1	1	1
5	LA SR-60 DB	Los Angeles / Diamond Bar	NR	NR	NR	NR	NR
6	LA SR-60 SEM	Los Angeles / South El Monte	12	1	1	1	1
7	ORA I-5	Orange / Orange	18	2	1	1	1
8	ORA I-405	Orange / Seal Beach	NR	NR	NR	NR	NR
9	RIV I-10	Riverside / Banning	36	4	4	3	3
10	RIV I-15	Riverside / Temecula	NR	NR	NR	NR	NR
11	RIV SR-91	Riverside / Corona	NR	NR	NR	NR	NR
12	SB I-15 ONT	San Bernardino / Ontario	NR	NR	NR	NR	NR
13	SBI-15 VIC	San Bernardino / Victorville	NR	NR	NR	NR	NR
14	SB SR-60	San Bernardino / Ontario	NR	NR	NR	NR	NR
15	VEN US-101 SB	Ventura / San Buenaventura	27	2	2	2	2
16	VEN US-101 TO	Ventura / Thousand Oaks	17	1	1	1	1

NR = No sensitive receptor of this type located within 1000 meters of the transportation segment.

Tables 3-5 through 3-7 show that sensitive receptor cancer risk is always less than the MEIR cancer risk shown in Table 3-1 for all segments and evaluation simulations. The largest sensitive receptor cancer risk value occurs for Segment 5, LA SR-60 DB for the day care center type of sensitive receptor. For this receptor, Simulation 1 – Existing Conditions causes the greatest cancer risk and Simulation 4 – 2012 RTP/SCS with Local Input Alternatives, the least risk. The maximum sensitive receptor risk for existing conditions is at a day care center near the LA SR-60 DB, where the risk for Simulation 4 is about 1.3 percent of the risk for Simulation 1.

3.3 HARP 2 MODEL RESULTS

The HARP 2 risk assessment model was used to verify the workbook risk calculations prepared using one segment and simulation for comparison; Segment 8, Interstate 405 in the Seal Beach area (ORA I-405) and Evaluation Simulation 1 – Existing Conditions was randomly chosen. The results for the MEIR compared to the spreadsheet calculation results are shown in Table 3-8 (*Comparison of HARP 2 and Spreadsheet Calculation Results*). The spreadsheet calculation results come from Tables 3-1, 3-2, and 3-3 and the HARP 2 electronic copies of the HARP 2 model results are contained in Appendix F. Table 3-8 demonstrates that the calculation procedures used herein match the HARP 2 model results within round-off differences and the spreadsheet calculations are slightly greater than the HARP 2 results. Both the HARP 2 and spreadsheet calculation risk for DPM shown in Table 3-8 were increased by 5 percent to account for the additional air toxics of acetaldehyde, benzene, 1,3-butadiene, and formaldehyde.

Table 3-8

Comparison of HARP 2 and Spreadsheet Calculation Results

RESIDENTIAL EXPOSURE DURATION	HARP 2 CANCER RISK (per million)	CALCULATION USED HEREIN CANCER RISK (per million)	PERCENT DIFFERENCE OVER HARP 2
30-Year	935	939	+0.4%
9-year	665	667	+0.3%
70-year	1,060	1,070	+0.9%

3.4 MAXIMUM HYPOTHETICAL RECEPTOR RISKS

Two sets of hypothetical receptors were evaluated for two of the Transportation Segments.

The first set of hypothetical receptors was to assume that any receptor type could be located at the maximum impact point for Segment 8, ORA I-405 (Interstate 405 in the Seal Beach area). This maximum impact point was chosen as it was the highest risk receptor from any of the transportation segments. The maximum impact point was actually a residence, but hypothetically, there could be a worker receptor, a day care center, a school, or a senior center at such a receptor. In order to evaluate the range of possible risk, the risk for each of those receptor types was calculated assuming that the concentration was the maximum of any of the modeled receptors. The results are shown in Table 3-9 (Hypothetical Maximum Impact for Any Receptor Type [cancer risk per million exposed persons]).

Table 3-9

**Hypothetical Maximum Impact for Any Receptor Type
(cancer risk per million exposed persons)**

RECEPTOR TYPE	SIMULATION 1 (EXISTING CONDITIONS)	SIMULATION 2 (NO PROJECT ALTERNATIVE)	SIMULATION 3 (PROPOSED PROJECT)	SIMULATION 4 (2012 RTP/SCS WITH LOCAL INPUT ALTERNATIVE)	SIMULATION 5 (INTENSIFIED LAND USE ALTERNATIVE)
30-year Residential	1,142	81	78	78	78
Worker	90	6	6	6	6
Day Care Center Children	450	32	31	31	31
School Children	102	7	7	7	7
Senior Center	180	13	12	12	12

The results in Table 3-9 indicate 1) that the maximum risk for any receptor in the SCAG Region for any of the Simulations 2 through 5, is on the order of less than 10 percent when compared to Simulation 1- Existing Conditions and 2) that residential risk is always greater than the other risk types.

The second set of hypothetical receptors evaluated was to assume that there is a residential receptor every 100 meters away from a transportation segment out to a distance of 1300 meters. The purpose of this analysis is to show how quickly the potential cancer risk decreases with

distance away from the transportation segment. For this analysis, Segment 4, LA I-710 in the Compton area, and Simulation 1 – Existing Conditions, was evaluated assuming that there were residential receptors starting at 25 meters from the freeway edge, 50 meters, 100 meters, and then every 100 meters out to 1300 meters away from the freeway. The results of the analysis are shown in Table 3-10 (*Hypothetical Maximum Impact for 30-year Residential Receptors as a Function of Distance for Existing Conditions and LA I-710 [cancer risk per million exposed persons]*). This analysis assumed residential receptors because for a given impact concentration residential cancer risk is the largest of any receptor type.

Table 3-10

**Hypothetical Maximum Impact for 30-year Residential Receptors
as a Function of Distance for Existing Conditions and LA I-710
(cancer risk per million exposed persons)**

DISTANCE FROM FREEWAY (meters)	MAXIMUM IMPACT CONCENTRATION (ug/m³)	ASSUMED MEIR CANCER RISK HRA SIMULATION 1 (DPM + 5% for other chemicals)	RATIO OF ASSUMED MEIR CANCER RISK TO RISK MODELED AT 100 METERS
25*	2.264	2,058	2.43
50*	1.463	1,330	1.57
100	0.932	847	1.00
200	0.516	469	0.55
300	0.349	317	0.37
400	0.257	234	0.28
500	0.199	181	0.21
600	0.160	145	0.17
700	0.131	119	0.14
800	0.110	100	0.12
900	0.0933	85	0.10
1000	0.0804	73	0.09
1100	0.0701	64	0.08
1200	0.0618	56	0.07
1300	0.0549	50	0.06

*Note that the AERMOD model was run only for 100-meter spacing, so the 25 and 50-meter results were interpolated using the exponential form of dispersion. The interpolation is based on Figure 1-1 of the CARB Air Quality and Land Use Handbook.⁸

Table 3-10 shows that potential cancer risk rapidly decreases with distance away from the freeway. The potential cancer risk to a resident 500 meters away from the freeway is only 21 percent of the risk at 100 meters and less than a tenth the risk at 25 meters. The ratios shown in Table 3-10 can be used to evaluate potential hypothetical receptors for other freeways as well.

⁸ *Air Quality and Land Use Handbook, April 2005. California Air Resources Board.*

This is because dispersion very near (i.e., a few hundred meters or less) an emission source (i.e., the freeway) is nearly independent of meteorological conditions.

3.5 HEALTH RISK COMPARISON TO THE 2012-2035 RTP/SCS PEIR

As stated, eight of the transportation segments evaluated were the same segments that were evaluated in the 2012-2035 RTP/SCS PEIR. Table 3-11 shows the residential health risks presented in the 2012-2035 RTP/SCS PEIR for the 2035 Preferred Plan compared to the No Project Alternative. The cancer risk shown in Table 3-11 (*Health Risk Comparison to the 2012-2035 RTP/SCS PEIR*) is a 70-year residential risk because the 2012-2035 RTP/SCS PEIR risk assessment methodology was based on 70-year exposure. The residential cancer risk for the No Project Alternative has decreased from the 2012-2035 RTP/SCS PEIR.

Table 3-11

Health Risk Comparison to the 2012-2035 RTP/SCS PEIR

SEG NO.	TRANSPORTATION SEGMENT	COUNTY / REGION	2012-2035 RTP/SCS PEIR RESIDENTIAL 70-YEAR CANCER RISK (per million)	NO PROJECT ALTERNATIVE RESIDENTIAL 70-YEAR CANCER RISK (per million)
1	IMP I-8	Imperial / El Centro	399	51
4	LA I-710	Los Angeles / Compton	475	66
5	LA SR-60 DB	Los Angeles / Diamond Bar	536	106
8	ORA I-405	Orange / Seal Beach	462	93
11	RIV SR-91	Riverside / Corona	668	73
12	SB I-15 ONT	San Bernardino / Ontario	354	52
14	SB SR-60	San Bernardino / Ontario	714	51
16	VEN US-101 TO	Ventura / Thousand Oaks	199	72

The differences shown in Table 3-11 are due to two primary reasons. First, the emission factors for HDDT projected by the current version of the EMFAC model for 2040 are much less (on the order of 95 percent less) than the emission factors used in the 2012-2035 RTP/SCS PEIR for 2035. The emission factors from the previous version of EMFAC used for the 2012-2035 PEIR did not account for the dramatic decrease in diesel emissions as a result of the CARB diesel exhaust reduction program and the effectiveness of the new DPM control technologies. Secondly, the vehicle mileage projected by the current SCAG transportation demand model is different than

what was projected in the 2012-2035 RTP/SCS PEIR because a more updated 2012 Base Year transportation network is being used for this 2016 RTP/SCS. As noted above, this 2012 Base Year transportation network includes the transportation projects included in the 2015 FTIP, adopted in September 2014, and transportation projects in the 2012-2035 RTP/SCS as amended in September 2014. For example, the HD VMT for Segment 8, ORA I-405 was projected in the 2012-2035 RTP/SCS PEIR to be about 50,000 miles per day in 2035, while the current model for the No Project Alternative predicts about 68,000 miles per day in 2040 for heavy duty diesel truck traffic. The combined result of these differences show a decrease in the overall risk to residential, worker and sensitive receptors in the current predictions when compared with the previous analysis.

3.6 ADDITIONAL HEALTH RISKS FROM VEHICLE EMISSIONS

For this analysis, cancer risk was used as a surrogate for all of the potential health effects related to vehicle emissions. Vehicles emit many additional pollutants in addition to DPM, including criteria pollutants, the aforementioned key air toxics (i.e., acetaldehyde, benzene, 1,3-butadiene, formaldehyde), and other minor air toxic emissions. These compounds cause not only potential carcinogenic health effects but also non-carcinogenic acute (short-term) and chronic (long-term) health effects to the respiratory system, central nervous system, eyes, and immune system, and others. The non-carcinogenic effects are assessed by comparing the impact concentration to published Reference Exposure Levels (RELs). If the impact concentration is less than the REL, then potential non-carcinogenic health effects are not likely to occur. For vehicle emissions, the potential for carcinogenic effects is much greater than for non-cancer effects. This is most easily illustrated through examination of the REL for diesel exhaust. The REL for diesel exhaust published by CARB⁹ is 5 ug/m³. This is a chronic REL. If a person were exposed to diesel exhaust particulate at a chronic concentration of 5 ug/m³, the residential cancer risk would be 4,000 in a million; a value much greater than the modeled cancer risk due to vehicle traffic on the worst-case transportation segments. Therefore, potential cancer risk is an adequate surrogate for all of the potential health effects due to vehicle emissions.

3.7 OTHER RISK ASSESSMENTS IN THE SOUTH COAST BASIN

The cancer risk calculated for the 16 transportation segments can be compared to other regional estimates of cancer risk. One of the most comprehensive such studies is the Multiple Air Toxics

⁹ OEHHA Toxicity Criteria Database, Diesel Exhaust Particulate as of September 11, 2015. Available at <http://oehha.ca.gov/tcdb/index.asp>.

Exposure Study in the South Coast Air Basin, May 2015 (MATES-IV)¹⁰ The MATES-IV study estimated basin-wide average cancer risk with actual monitored data at 10 sites in calendar year 2012. The basin-wide cancer risk calculated from the 2012 monitoring data and using the current (2015) risk assessment methodology (the same methodology used herein) for 30-year residential exposure was 1,023 in a million¹¹ caused mostly by DPM. The MATES-IV study also showed that cancer risk was greatest near major freeways and transportation corridors¹². Note that the MATES-IV study did not estimate future (2040) risk, but due to the dramatic reduction in DPM emissions from HDDT, the basin-wide cancer risk should be much less than found in 2015.

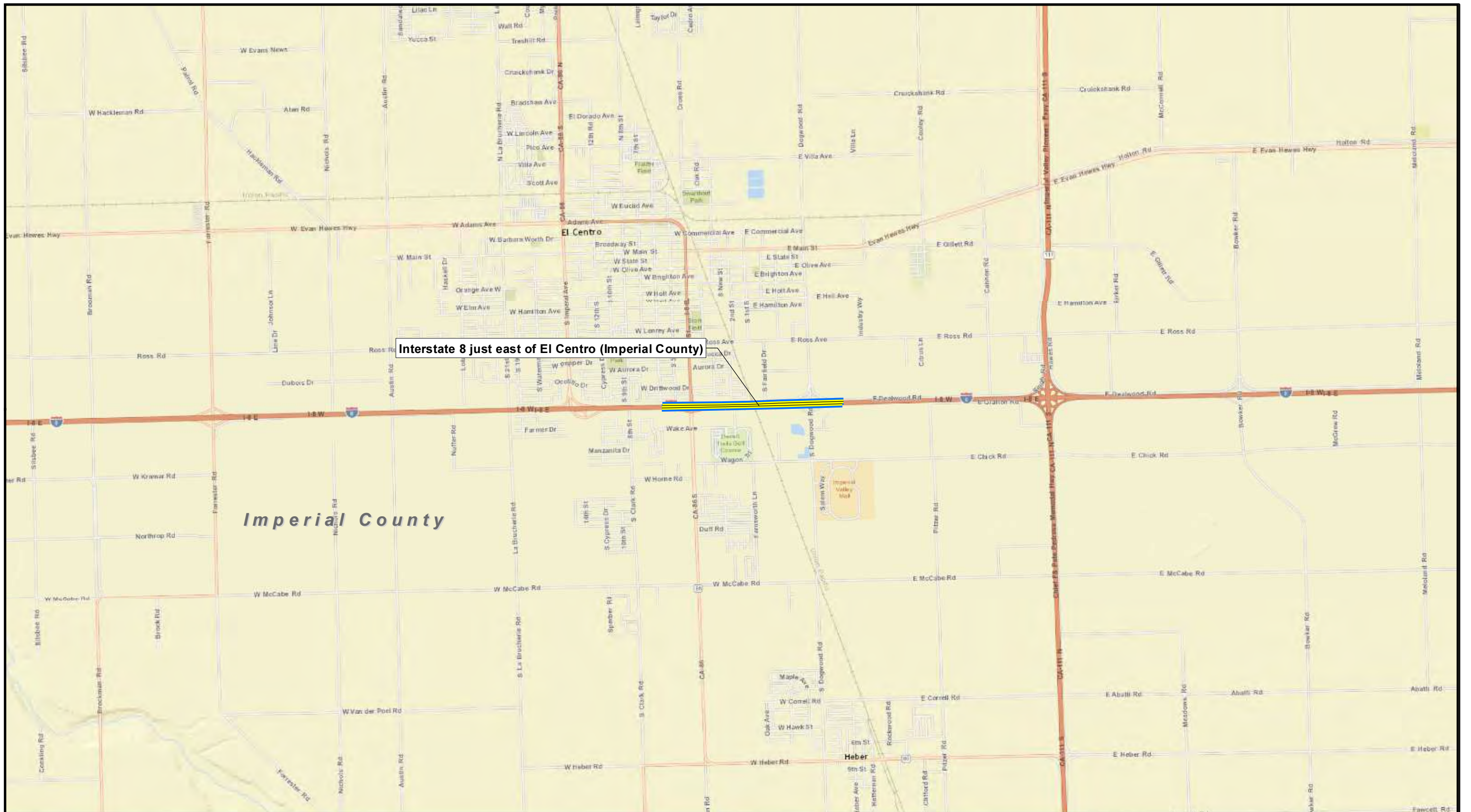
¹⁰ *Final Report, Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES-IV, May 2015.* South Coast Air Quality Management District, available at <http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies>, last accessed September 2015.

¹¹ *Ibid.*, Page 4-23.

¹² *Ibid.*, Page 4-24.

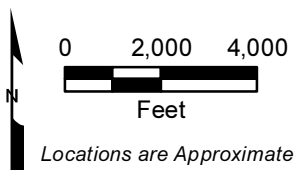
APPENDIX A

Location of Selected Transportation Segments



Interstate 8 just east of El Centro (Imperial County)

Imperial County



LEGEND

- 2040 SC2, SC3, SC3B
- 2040 BL
- 2012 BY
- County Boundary

Basemap: World Street Map via ESRI Map Service

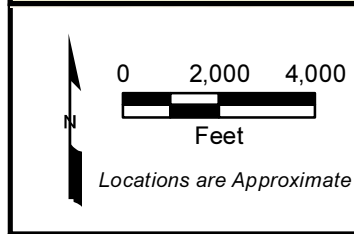
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FILE NAME:	Detail_Original.mxd

SEGMENT DETAIL MAP IMP I-8
Diesel Exhaust Health Risk Assessment Southern California Association of Governments Regional Transportation Plan

FIGURE
A-1



LEGEND	
	2040 SC2, SC3, SC3B
	2040 BL
	2012 BY
	County Boundary

Basemap: World Street Map via ESRI Map Service

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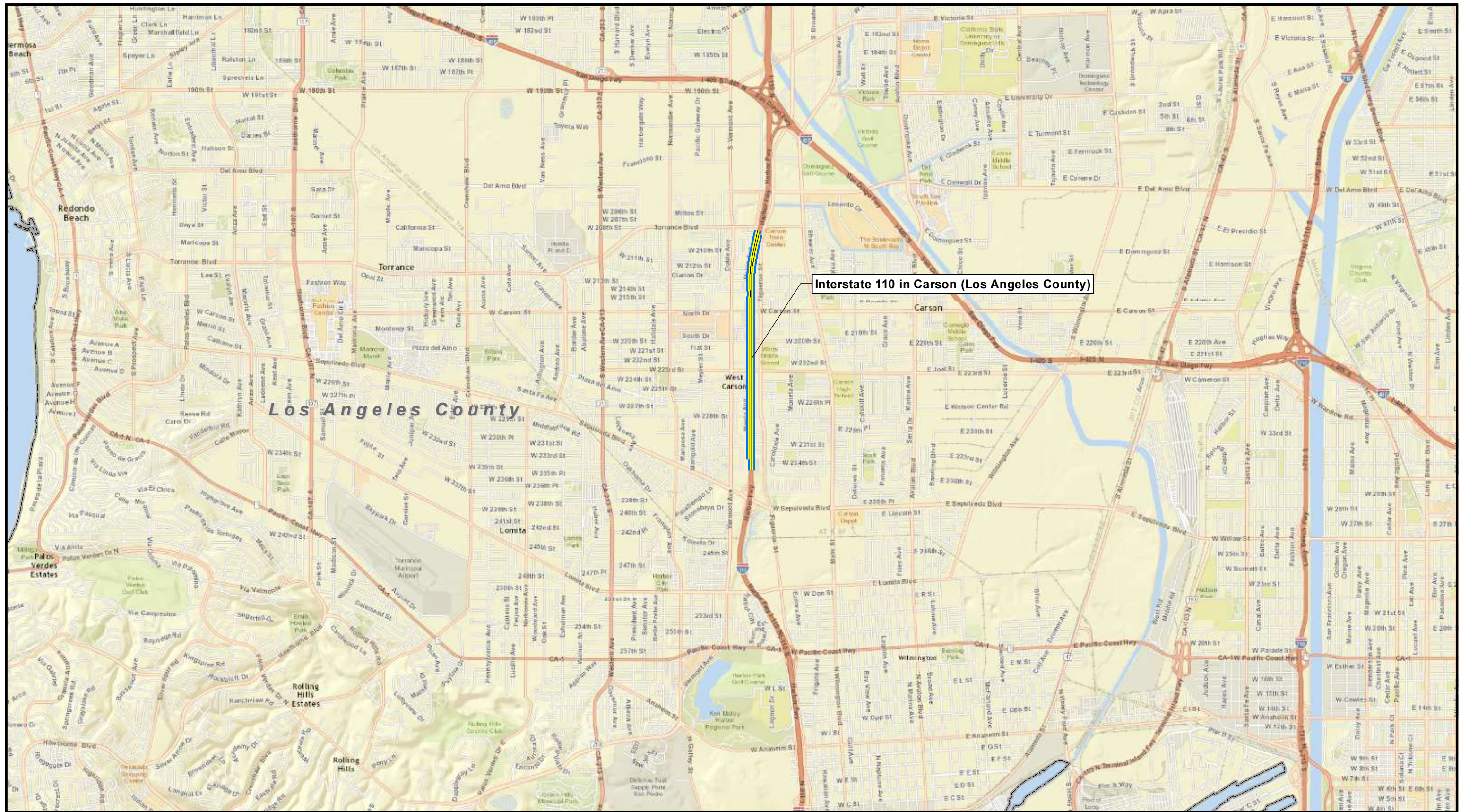


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**ADDITIONAL FREEWAY SEGMENT DETAIL
IMP SR-78**

Diesel Exhaust Health Risk Assessment
Southern California Association of Governments
2016 RTP/SCS PEIR

FIGURE
A-2



Interstate 10 in Carson (Los Angeles County)

LEGEND

- 2040 SC2, SC3, SC3B County Boundary
- 2040 BL
- 2012 BY

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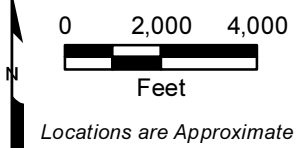


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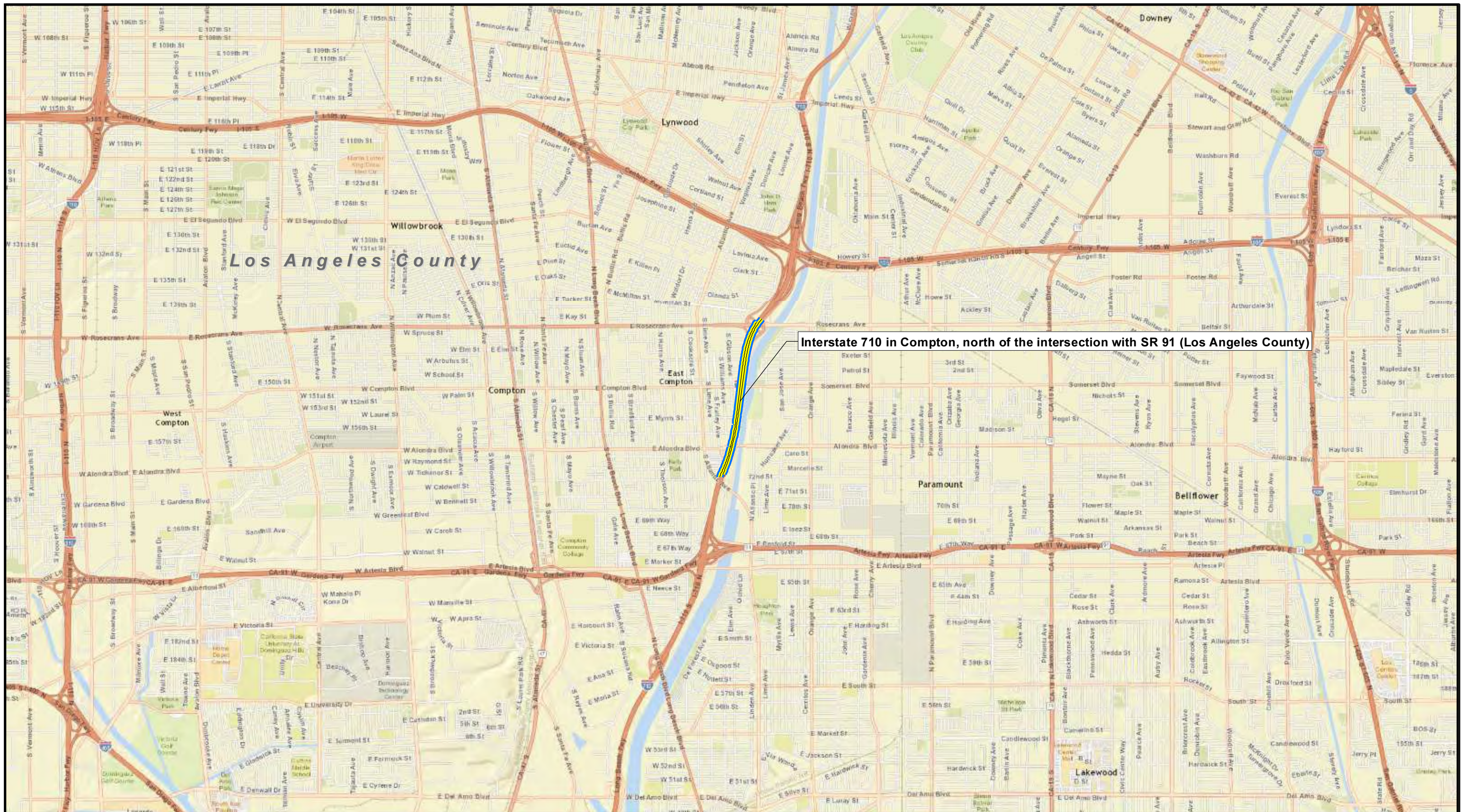
**ADDITIONAL FREEWAY SEGMENT DETAIL
LA I-110**

Diesel Exhaust Health Risk Assessment
Southern California Association of Governments
2016 RTP/SCS PEIR

FIGURE
A-3



Basemap: World Street Map via ESRI Map Service



Interstate 710 in Compton, north of the intersection with SR 91 (Los Angeles County)

LEGEND

- 2040 SC2, SC3, SC3B
- 2040 BL
- 2012 BY
- County Boundary

Basemap: World Street Map via ESRI Map Service

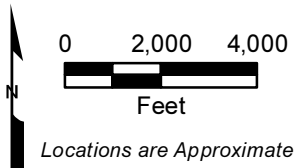
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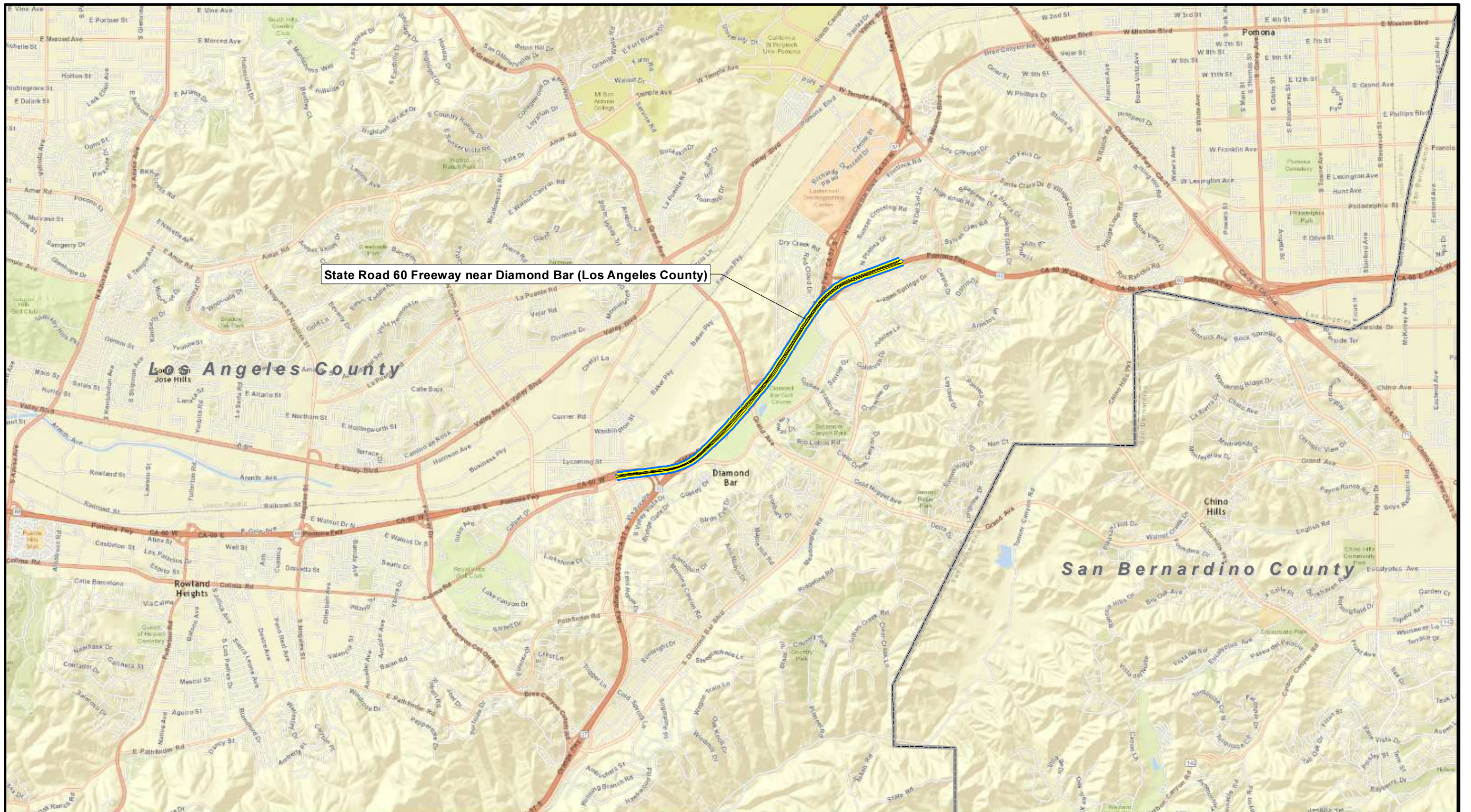


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SEGMENT DETAIL MAP LA I-710
Diesel Exhaust Health Risk Assessment Southern California Association of Governments Regional Transportation Plan

FIGURE
A-4

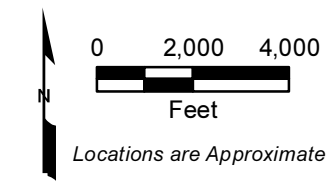




State Road 60 Freeway near Diamond Bar (Los Angeles County)

Los Angeles County

San Bernardino County



LEGEND	
	2040 SC2, SC3, SC3B
	2040 BL
	2012 BY
	County Boundary

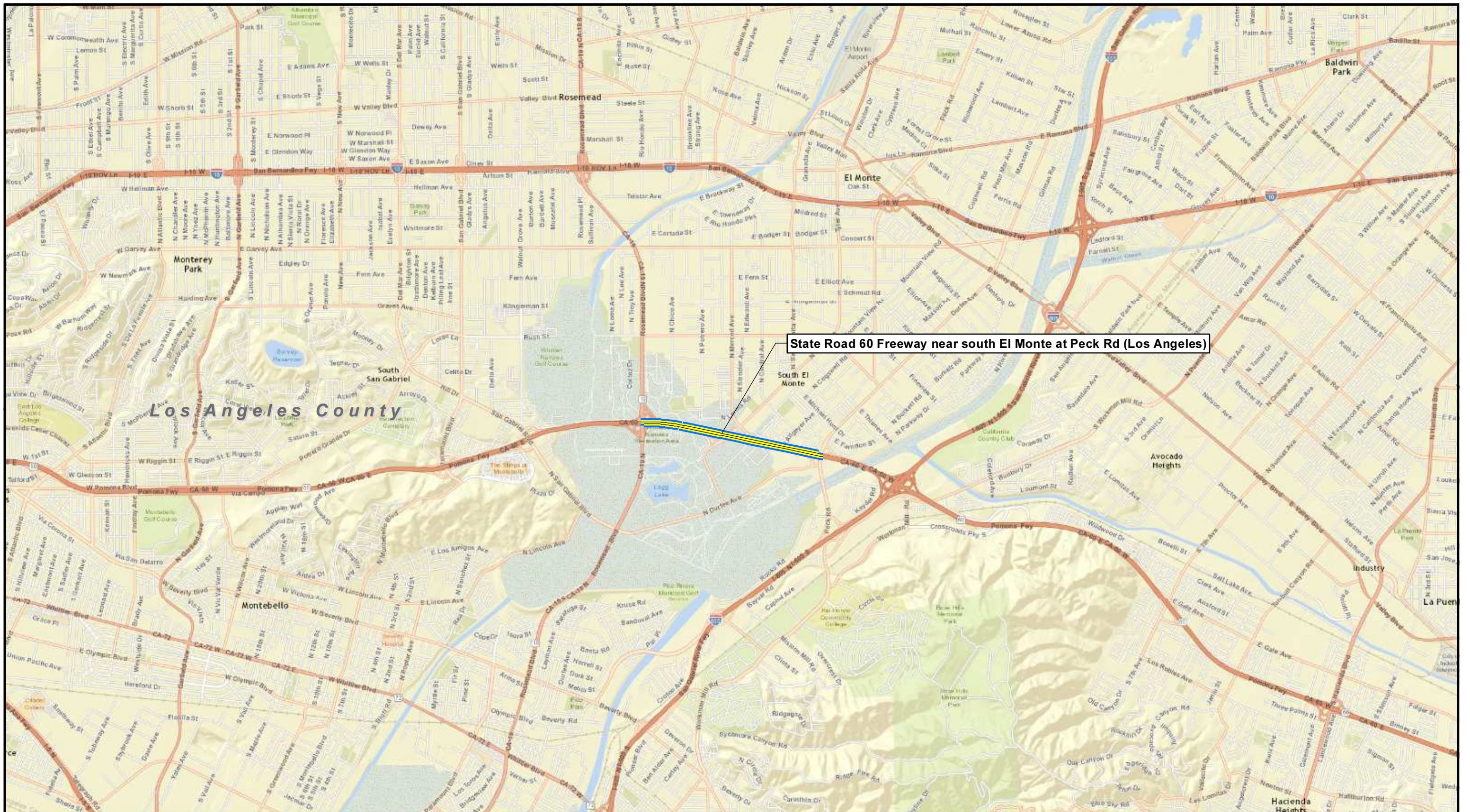
Basemap: World Street Map via ESRI Map Service

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CHECKED BY:	R.ERBES
FILE NAME:	Detail_Original.mxd

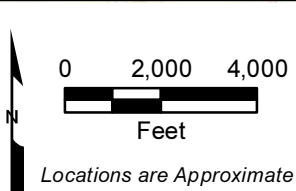
SEGMENT DETAIL MAP LA SR-60 DB
Diesel Exhaust Health Risk Assessment Southern California Association of Governments Regional Transportation Plan

FIGURE
A-5



State Road 60 Freeway near south El Monte at Peck Rd (Los Angeles)

Los Angeles County



LEGEND	
	2040 SC2, SC3, SC3B
	2040 BL
	2012 BY
	County Boundary

Basemap: World Street Map via ESRI Map Service

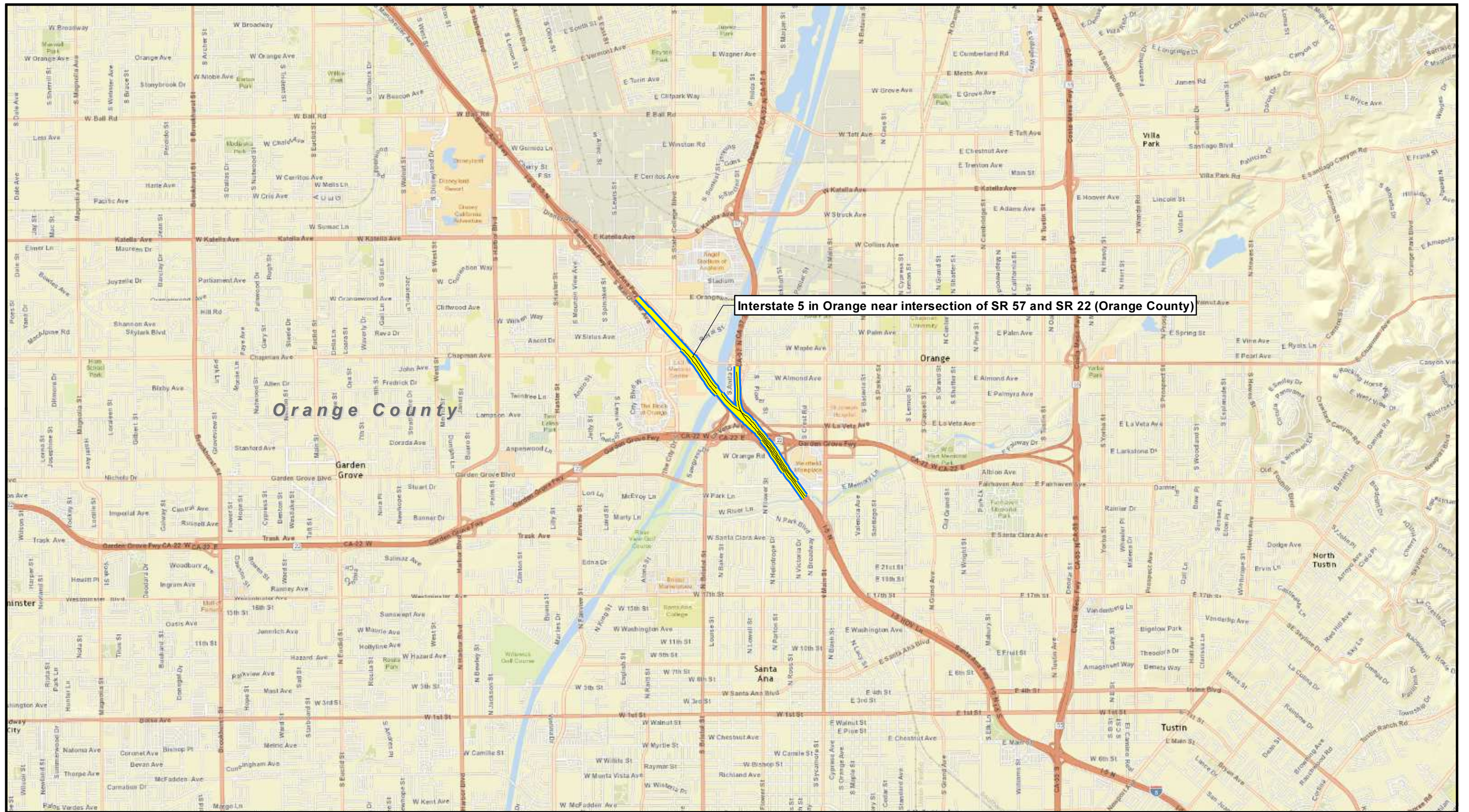
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ADDITIONAL FREEWAY SEGMENT DETAIL LA SR-60 SOUTH EL MONTE
Diesel Exhaust Health Risk Assessment Southern California Association of Governments 2016 RTP/SCS PEIR

FIGURE
A-6



Interstate 5 in Orange near intersection of SR 57 and SR 22 (Orange County)

Orange County

LEGEND

- 2040 SC2, SC3, SC3B County Boundary
- 2040 BL
- 2012 BY

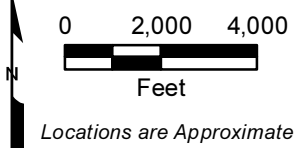
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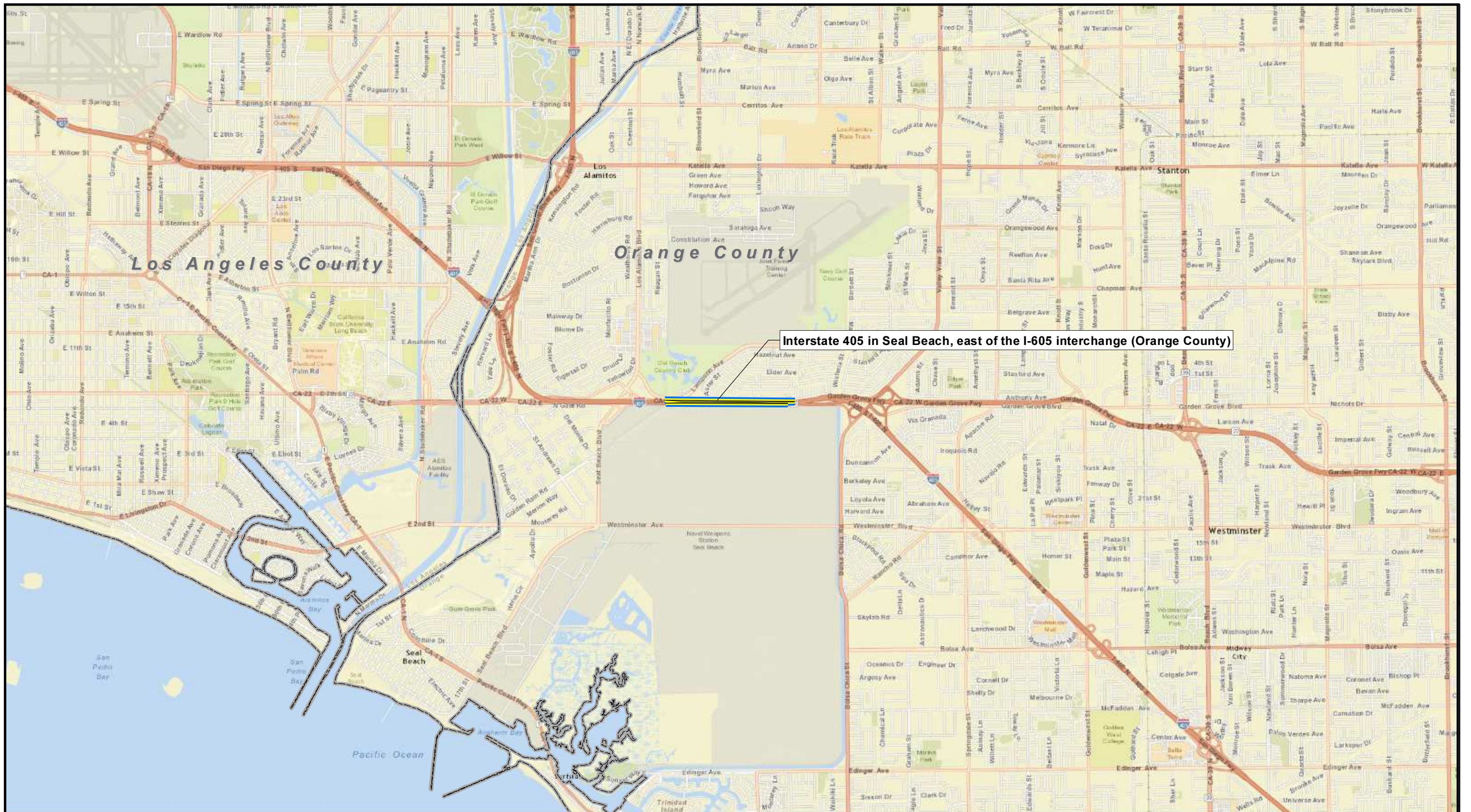
PROJECT NO.:	20154370
DRAWN:	OCT 2015
DRAWN BY:	K.HAGAN
CHECKED BY:	R.ERBES
FILE NAME:	Detail_Additional.mxd

ADDITIONAL FREEWAY SEGMENT DETAIL ORA I-5
Diesel Exhaust Health Risk Assessment Southern California Association of Governments 2016 RTP/SCS PEIR

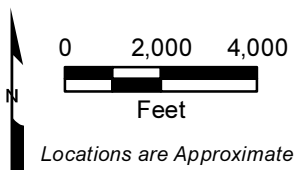
FIGURE
A-7



Basemap: World Street Map via ESRI Map Service



Interstate 405 in Seal Beach, east of the I-605 interchange (Orange County)



LEGEND

	2040 SC2, SC3, SC3B		County Boundary
	2040 BL		
	2012 BY		

Basemap: World Street Map via ESRI Map Service

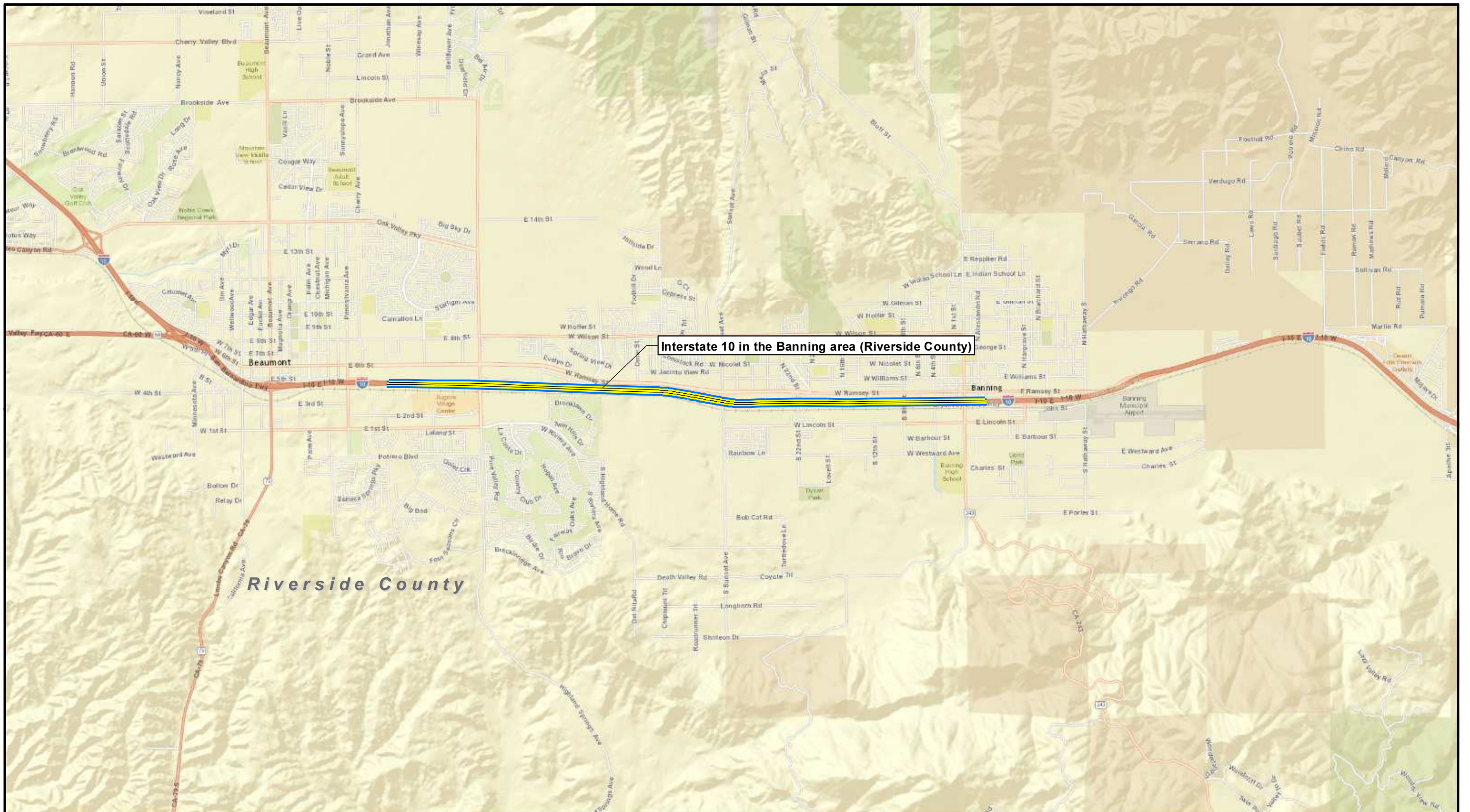
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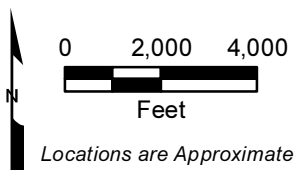
SEGMENT DETAIL MAP ORA I-405
Diesel Exhaust Health Risk Assessment Southern California Association of Governments Regional Transportation Plan

FIGURE
A-8



Interstate 10 in the Banning area (Riverside County)

Riverside County



Locations are Approximate

LEGEND

- 2040 SC2, SC3, SC3B
- 2040 BL
- 2012 BY
- ▭ County Boundary

Basemap: World Street Map via ESRI Map Service

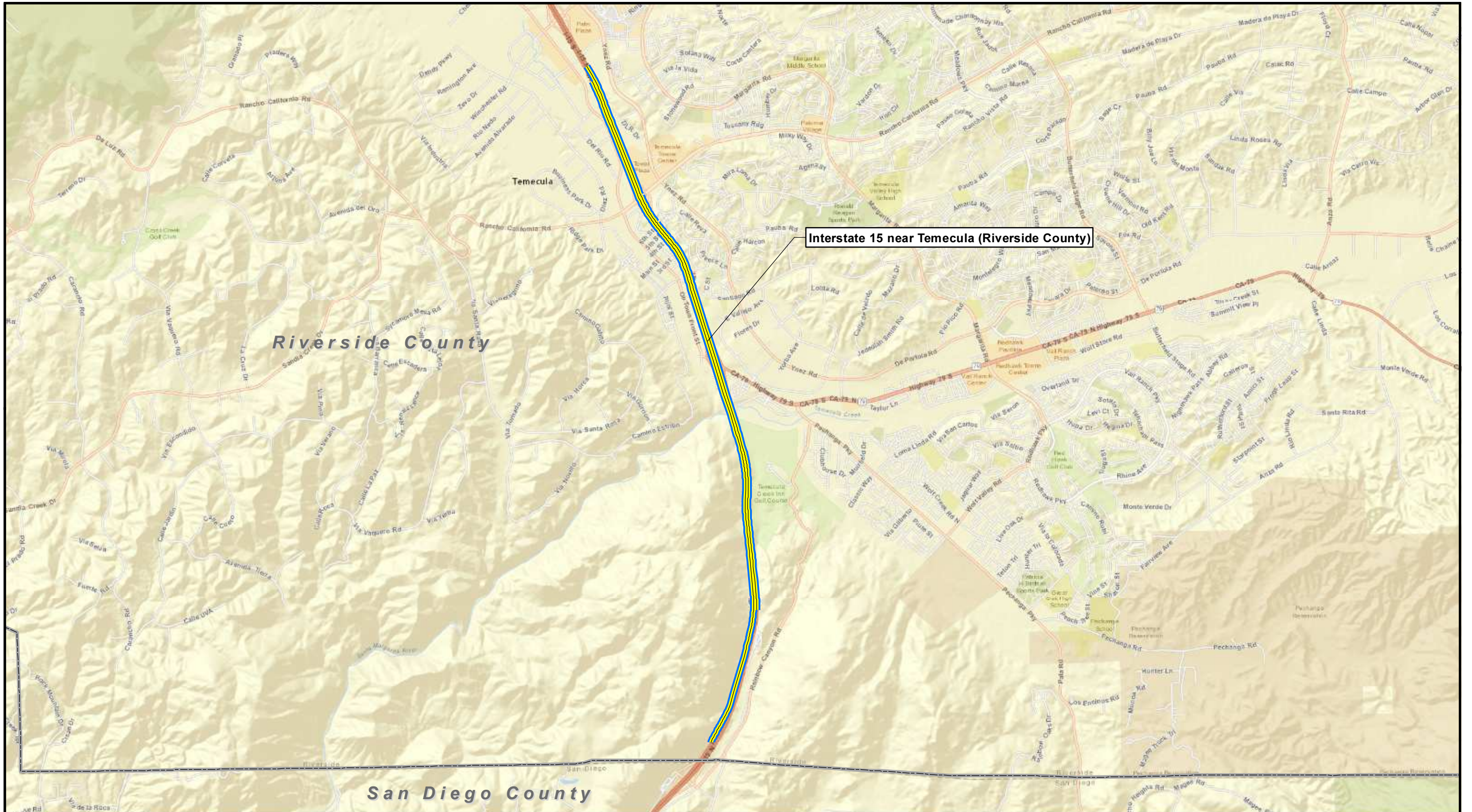
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ADDITIONAL FREEWAY SEGMENT DETAIL
RIV I-10
 Diesel Exhaust Health Risk Assessment
 Southern California Association of Governments
 2016 RTP/SCS PEIR

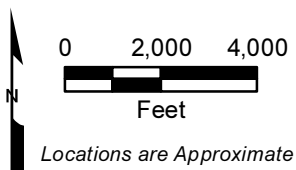
FIGURE
A-9



Interstate 15 near Temecula (Riverside County)

Riverside County

San Diego County



LEGEND	
	2040 SC2, SC3, SC3B
	2040 BL
	2012 BY
	County Boundary

Basemap: World Street Map via ESRI Map Service

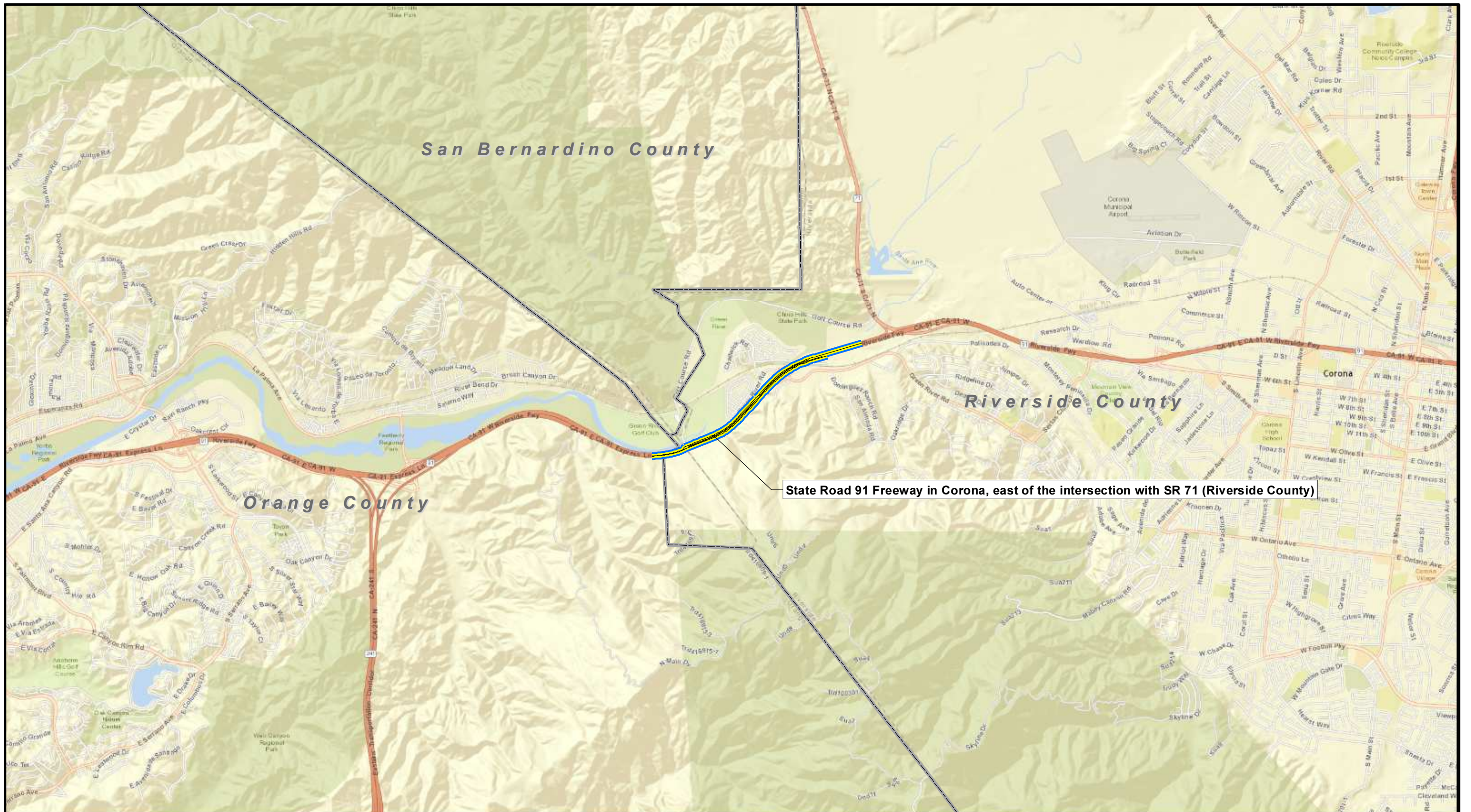
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FILE NAME:	Detail_Additional.mxd

ADDITIONAL FREEWAY SEGMENT DETAIL RIV I-15
Diesel Exhaust Health Risk Assessment Southern California Association of Governments 2016 RTP/SCS PEIR

FIGURE
A-10



State Road 91 Freeway in Corona, east of the intersection with SR 71 (Riverside County)

LEGEND

- 2040 SC2, SC3, SC3B County Boundary
- 2040 BL
- 2012 BY

Basemap: World Street Map via ESRI Map Service

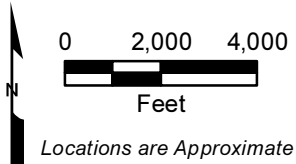
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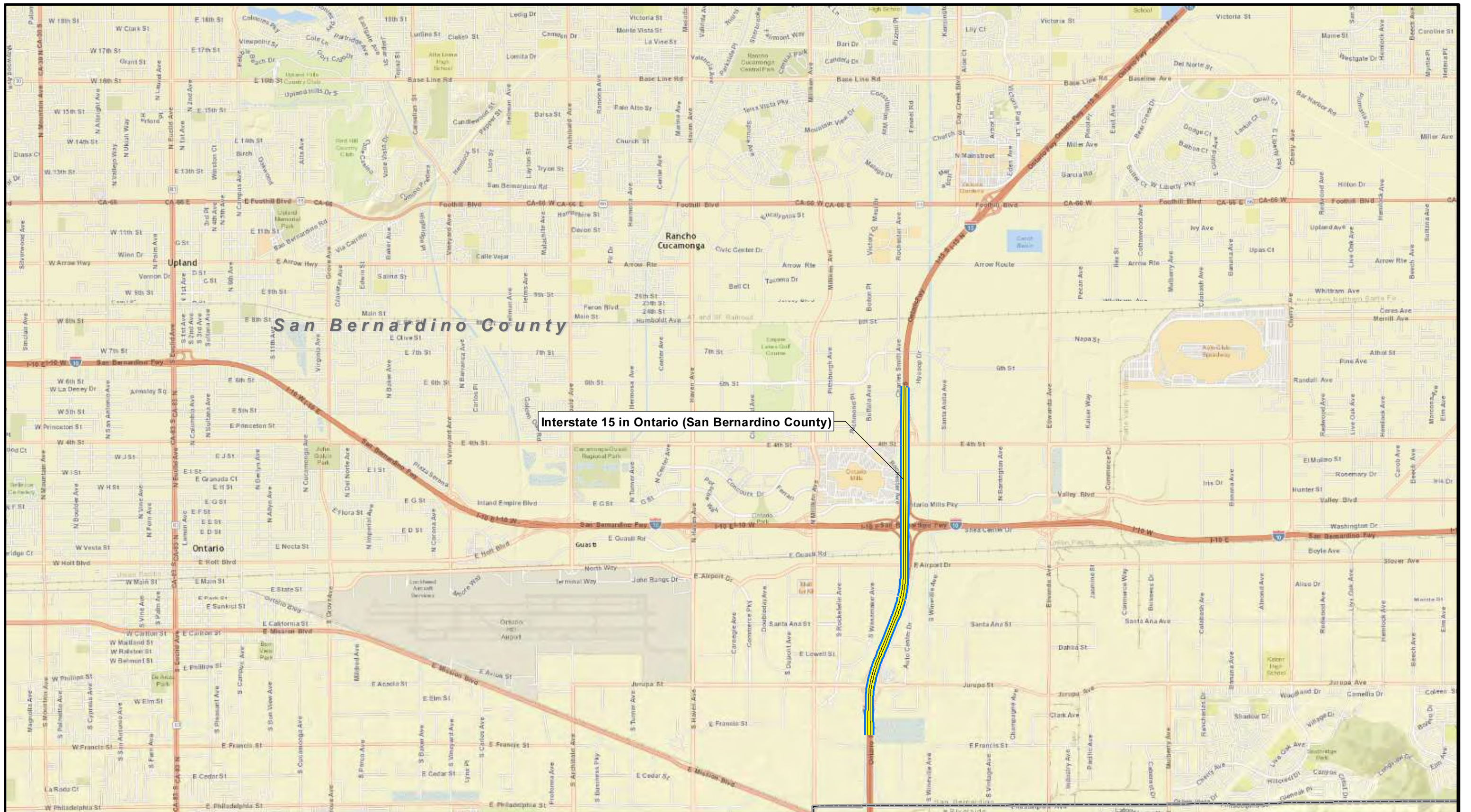


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SEGMENT DETAIL MAP RIV SR-91
Diesel Exhaust Health Risk Assessment Southern California Association of Governments Regional Transportation Plan

FIGURE
A-11





Interstate 15 in Ontario (San Bernardino County)

LEGEND

- 2040 SC2, SC3, SC3B County Boundary
- 2040 BL
- 2012 BY

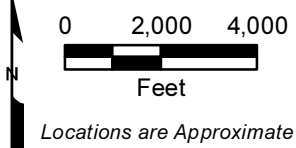
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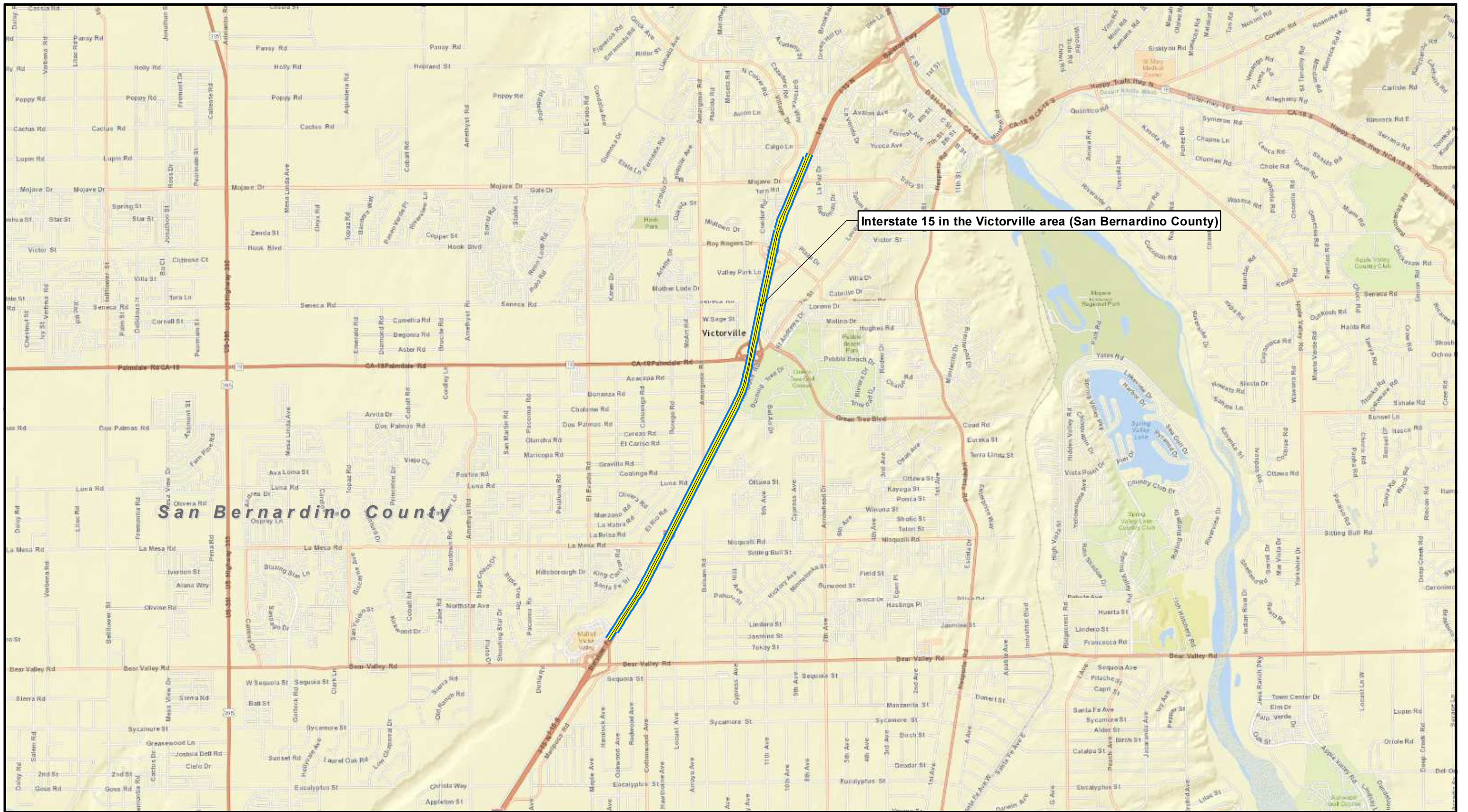
PROJECT NO.:	20154370
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FILE NAME:	Detail_Original.mxd

SEGMENT DETAIL MAP SB I-15 ONTARIO
Diesel Exhaust Health Risk Assessment Southern California Association of Governments Regional Transportation Plan

FIGURE
A-12

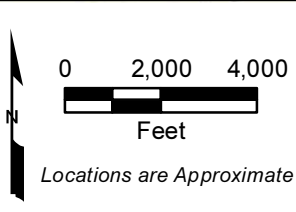


Basemap: World Street Map via ESRI Map Service



Interstate 15 in the Victorville area (San Bernardino County)

San Bernardino County



LEGEND	
	2040 SC2, SC3, SC3B
	2040 BL
	2012 BY
	County Boundary

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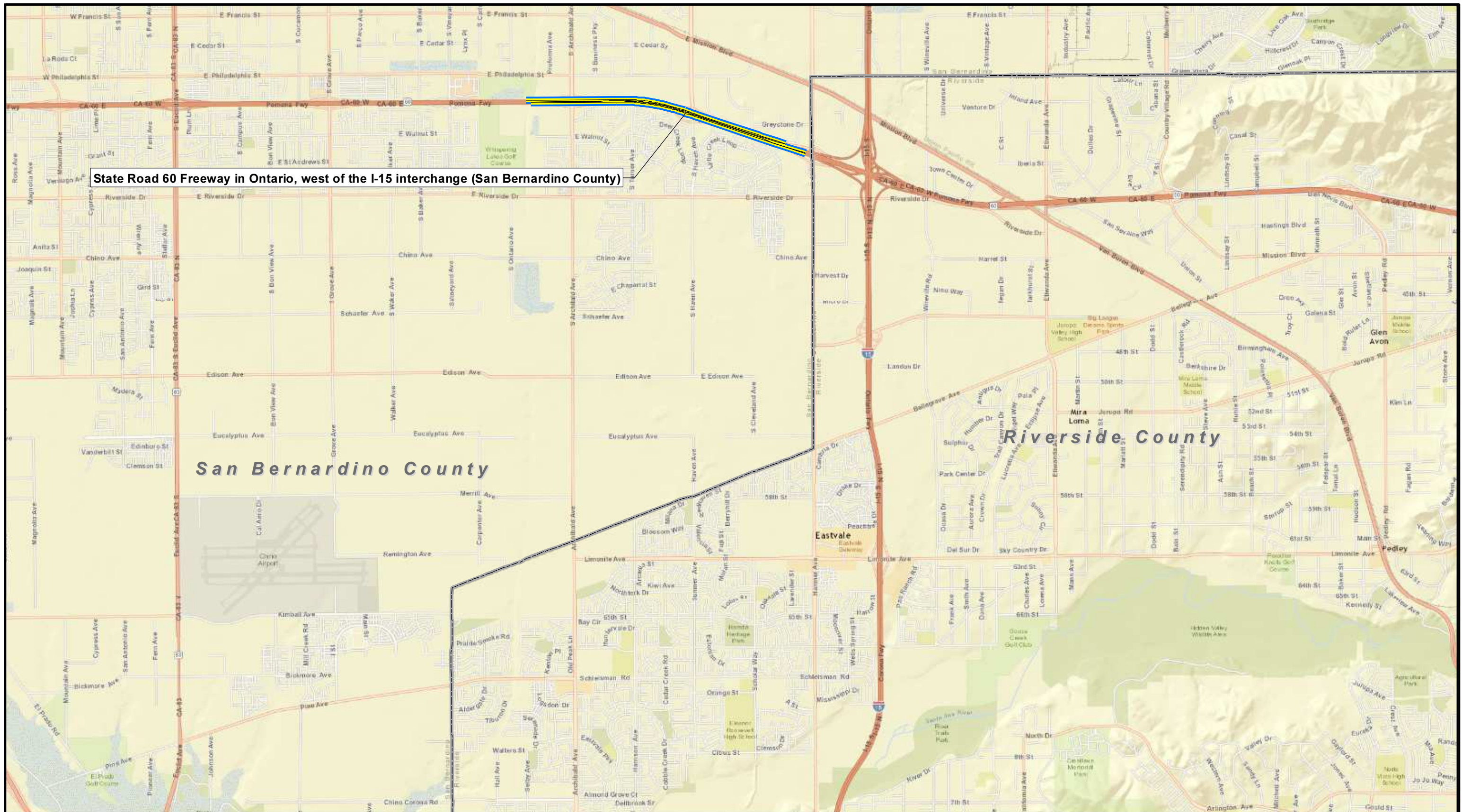
PROJECT NO.:	20154370
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DRAWN BY:	K.HAGAN
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FILE NAME:	Detail_Additional.mxd

ADDITIONAL FREEWAY SEGMENT DETAIL
SB I-15 VICTORVILLE

Diesel Exhaust Health Risk Assessment
 Southern California Association of Governments
 2016 RTP/SCS PEIR

FIGURE
A-13

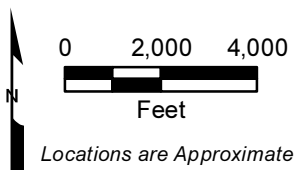
Basemap: World Street Map via ESRI Map Service



State Road 60 Freeway in Ontario, west of the I-15 interchange (San Bernardino County)

San Bernardino County

Riverside County



Locations are Approximate

LEGEND

- 2040 SC2, SC3, SC3B
- 2040 BL
- 2012 BY
- ▭ County Boundary

Basemap: World Street Map via ESRI Map Service

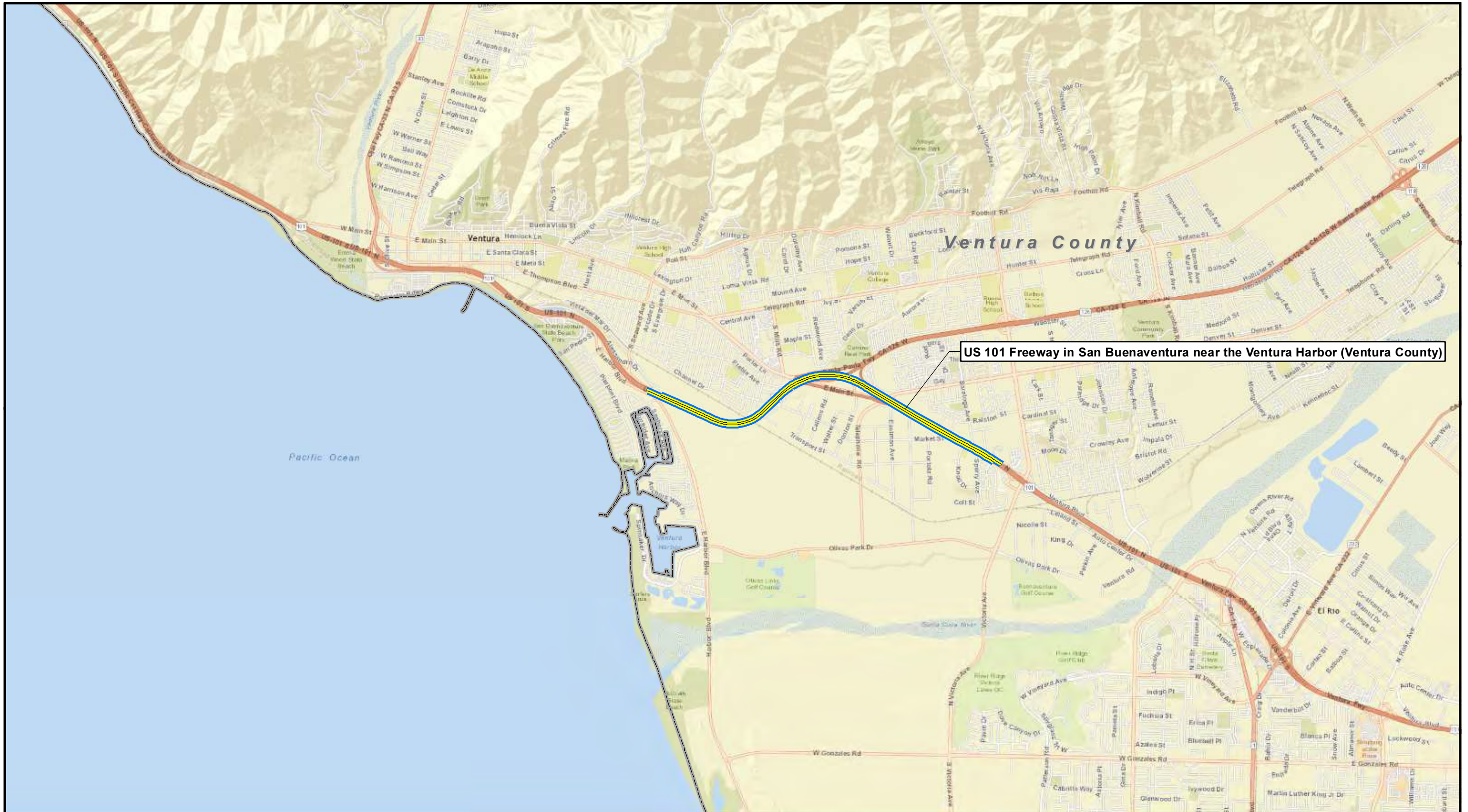
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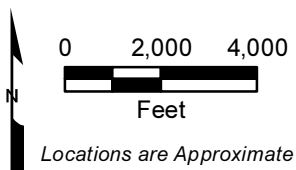
PROJECT NO.:	20154370
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FILE NAME:	Detail_Original.mxd

SEGMENT DETAIL MAP SB SR-60
Diesel Exhaust Health Risk Assessment Southern California Association of Governments Regional Transportation Plan

FIGURE
A-14



US 101 Freeway in San Buenaventura near the Ventura Harbor (Ventura County)



LEGEND

- 2040 SC2, SC3, SC3B
- 2040 BL
- 2012 BY
- County Boundary

Basemap: World Street Map via ESRI Map Service

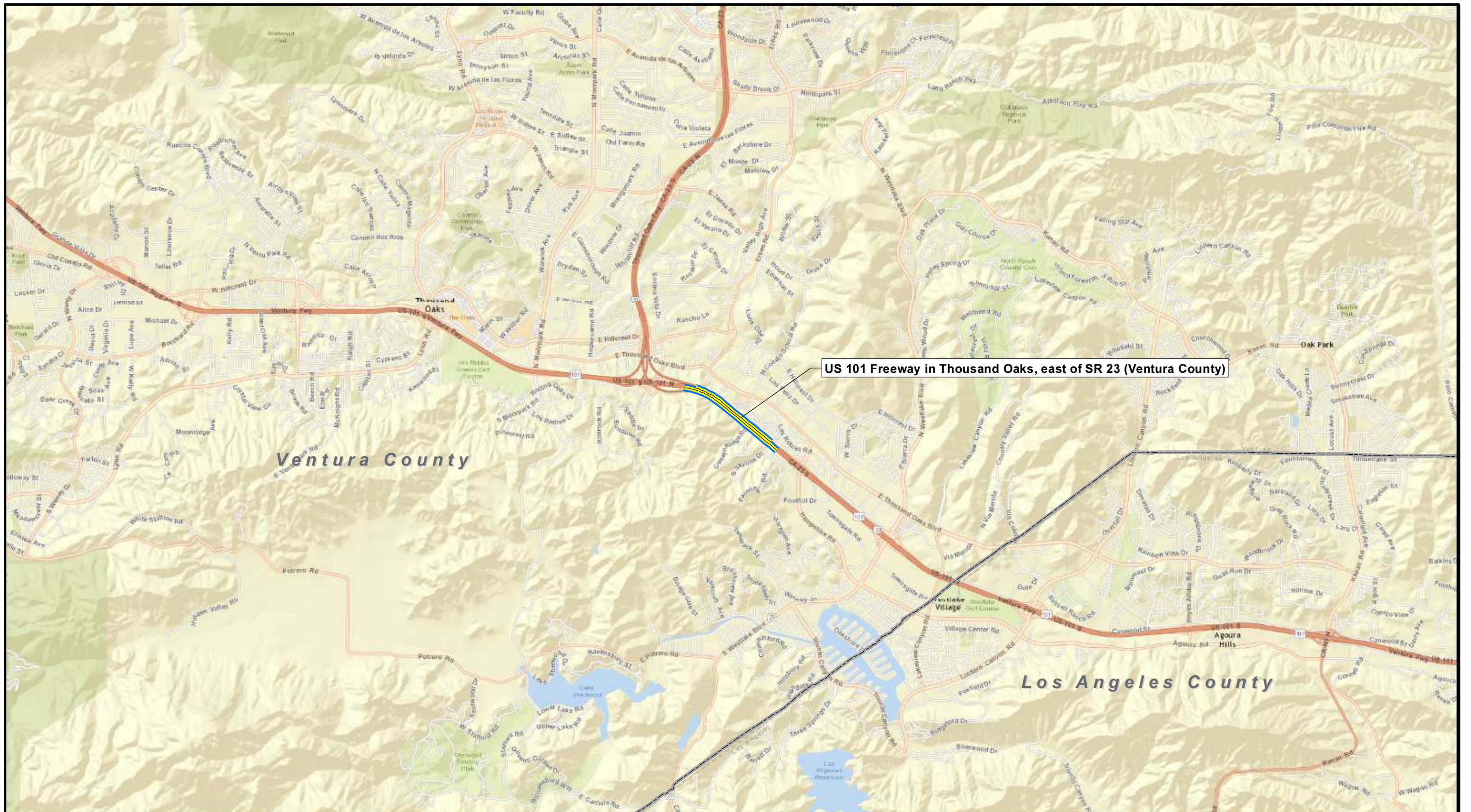
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ADDITIONAL FREEWAY SEGMENT DETAIL
VEN US-101 SAN BUENAVENTURA
 Diesel Exhaust Health Risk Assessment
 Southern California Association of Governments
 2016 RTP/SCS PEIR

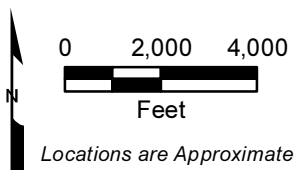
FIGURE
A-15



US 101 Freeway in Thousand Oaks, east of SR 23 (Ventura County)

Ventura County

Los Angeles County



Locations are Approximate

LEGEND

- 2040 SC2, SC3, SC3B
- 2040 BL
- 2012 BY
- ▭ County Boundary

Basemap: World Street Map via ESRI Map Service

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SEGMENT DETAIL MAP VEN US-101 THOUSAND OAKS
Diesel Exhaust Health Risk Assessment Southern California Association of Governments Regional Transportation Plan

FIGURE
A-16

APPENDIX B

DPM Emissions for Each Transportation Segment and Evaluation Simulation

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
 Project: Regional Transportation Plan Risk Assessment Emissions
 EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: Imperial
 Calendar Year: 2015
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment	LM VMT/day	HD VMT/day
IMP I-8 just east of El Centro Eastbound	18,222	3,592
IMP I-8 just east of El Centro Westbound	21,350	3,740
*IMP I-8 just east of El Centro		
Total Segment Length Eastbound	1.51 miles	
Total Segment Length Westbound	1.51 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Emissions per Volume Source for 1-mile segment Model	
							Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Imperial	2015	HHDT	Aggregatec	55	GAS	479.49									
Imperial	2015	HHDT	Aggregatec	55	DSL	116651.26	3577.63	3724.53	0.063751128	0.50	0.52	74	74	2.36E-05	2.46E-05
						HHDT Total									
						117130.75									
Imperial	2015	LDA	Aggregatec	65	GAS	555842.16									
Imperial	2015	LDA	Aggregatec	65	DSL	4263.88	68.73	80.53	0.033134824	0.005	0.006				
Imperial	2015	LDT1	Aggregatec	65	GAS	45976.85									
Imperial	2015	LDT1	Aggregatec	65	DSL	67.54	1.09	1.28	0.168471034	0.000	0.000				
Imperial	2015	LDT2	Aggregatec	65	GAS	195697.70									
Imperial	2015	LDT2	Aggregatec	65	DSL	244.93	3.95	4.63	0.009951421	0.000	0.000				
Imperial	2015	LHDT1	Aggregatec	65	GAS	28432.06									
Imperial	2015	LHDT1	Aggregatec	65	DSL	39697.86	639.85	749.71	0.034850704	0.049	0.058				
Imperial	2015	LHDT2	Aggregatec	65	GAS	5454.87									
Imperial	2015	LHDT2	Aggregatec	65	DSL	11597.28	186.93	219.02	0.027094549	0.011	0.013				
Imperial	2015	MDV	Aggregatec	65	GAS	184785.84									
Imperial	2015	MDV	Aggregatec	65	DSL	1612.23	25.99	30.45	0.025717284	0.001	0.002				
Imperial	2015	MH	Aggregatec	65	GAS	1989.36									
Imperial	2015	MH	Aggregatec	65	DSL	413.72	6.67	7.81	0.230669229	0.003	0.004				
Imperial	2015	MHDT	Aggregatec	65	GAS	7266.85									
Imperial	2015	MHDT	Aggregatec	65	DSL	39444.85	635.77	744.93	0.187902797	0.263	0.309				
Imperial	2015	OBUS	Aggregatec	65	GAS	2528.78									
Imperial	2015	OBUS	Aggregatec	65	DSL	4575.32	73.75	86.41	0.045004397	0.007	0.009				
Imperial	2015	SBUS	Aggregatec	55	GAS	69.57									
Imperial	2015	SBUS	Aggregatec	55	DSL	135.20	2.18	2.55	0.067327464	0.000	0.000				
Imperial	2015	UBUS	Aggregatec	65	GAS	180.68									
Imperial	2015	UBUS	Aggregatec	65	DSL	229.13	3.69	4.33	0.175969908	0.001	0.002				
						LM Total	1130506.65		Total LM Diesel Emissions	0.34	0.40	74	74	1.61E-05	1.89E-05
									Total Diesel Emissions	0.85	0.93	Total Emissions per Volume Source for Modeling		3.97E-05	4.35E-05

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
 Project: Regional Transportation Plan Risk Assessment Emissions

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Imperial

Calendar Year: 2015

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment	LM VMT/day	HD VMT/day
IMP SR-78 Eastbound	6,534	1,280
IMP SR-78 Westbound	6,425	1,316
*IMP SR-78: State Road 78 Freeway in Westmorland		
Total segment length		
Total Segment Length Eastbound	0.88 miles	
Total Segment Length Westbound	0.88 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound No. of Vol Sources	Westbound No. of Vol Sources	Emissions per Volume Source for 1- mile segment Model		
							Diesel VMT/day	Diesel VMT/day		PM10_RUNEX (lb/day)	DPM Emissions (lb/day)			Eastbound g/sec	Westbound g/sec	
Imperial	2015	HHDT	Aggregatec	55	GAS	479.49										
Imperial	2015	HHDT	Aggregatec	55	DSL	116651.26	1274.82	1310.27	0.063751128	0.18	0.18	81	81	1.16E-05	1.19E-05	
						HHDT Total										
						117130.75										
Imperial	2015	LDA	Aggregatec	65	GAS	555842.16										
Imperial	2015	LDA	Aggregatec	65	DSL	4263.88	24.65	24.23	0.033134824	0.002	0.002					
Imperial	2015	LDT1	Aggregatec	65	GAS	45976.85										
Imperial	2015	LDT1	Aggregatec	65	DSL	67.54	0.39	0.38	0.168471034	0.000	0.000					
Imperial	2015	LDT2	Aggregatec	65	GAS	195697.70										
Imperial	2015	LDT2	Aggregatec	65	DSL	244.93	1.42	1.39	0.009951421	0.000	0.000					
Imperial	2015	LHDT1	Aggregatec	65	GAS	28432.06										
Imperial	2015	LHDT1	Aggregatec	65	DSL	39697.86	229.45	225.62	0.034850704	0.018	0.017					
Imperial	2015	LHDT2	Aggregatec	65	GAS	5454.87										
Imperial	2015	LHDT2	Aggregatec	65	DSL	11597.28	67.03	65.91	0.027094549	0.004	0.004					
Imperial	2015	MDV	Aggregatec	65	GAS	184785.84										
Imperial	2015	MDV	Aggregatec	65	DSL	1612.23	9.32	9.16	0.025717284	0.001	0.001					
Imperial	2015	MH	Aggregatec	65	GAS	1989.36										
Imperial	2015	MH	Aggregatec	65	DSL	413.72	2.39	2.35	0.230669229	0.001	0.001					
Imperial	2015	MHDT	Aggregatec	65	GAS	7266.85										
Imperial	2015	MHDT	Aggregatec	65	DSL	39444.85	227.99	224.18	0.187902797	0.094	0.093					
Imperial	2015	OBUS	Aggregatec	65	GAS	2528.78										
Imperial	2015	OBUS	Aggregatec	65	DSL	4575.32	26.45	26.00	0.045004397	0.003	0.003					
Imperial	2015	SBUS	Aggregatec	55	GAS	69.57										
Imperial	2015	SBUS	Aggregatec	55	DSL	135.20	0.78	0.77	0.067327464	0.000	0.000					
Imperial	2015	UBUS	Aggregatec	65	GAS	180.68										
Imperial	2015	UBUS	Aggregatec	65	DSL	229.13	1.32		1.30	0.175969908	0.001	0.001				
						LM Total	1130506.65		Total LM Diesel Emissions	0.12	0.12	81	81	7.98E-06	7.84E-06	
									Total Diesel Emissions	0.30	0.31	Total Emissions per Volume Source for Modeling		1.96E-05	1.98E-05	

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Project: Regional Transportation Plan Risk Assessment Emissions

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: 2015

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Additional Segment
 LA I-110 Northbound
 LA I-110 Southbound
 *LA I-110 in the LA County area, Carson
 Total segment length
 Total Segment Length Northbound
 Total Segment Length Southbound

LM VMT/day
 164,091
 159,370
 HD VMT/day
 16,205
 14,486
 1.98 miles
 1.92 miles

															Emissions per Volume Source for 1-mile segment Model								
															Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	
															Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT																	
Los Angele	2015	HHDT	Aggregatec	55	GAS	4419.08																	
Los Angele	2015	HHDT	Aggregatec	55	DSL	576422.64	16081.26	14375.77	0.064932727	2.30	2.06	45	45	1.36E-04	1.25E-04								
						HHDT Total	580841.72																
Los Angele	2015	LDA	Aggregatec	65	GAS	4214659.76																	
Los Angele	2015	LDA	Aggregatec	65	DSL	31654.76	621.84	603.94	0.039353026	0.054	0.052												
Los Angele	2015	LDT1	Aggregatec	65	GAS	369362.50																	
Los Angele	2015	LDT1	Aggregatec	65	DSL	519.37	10.20	9.91	0.167195976	0.004	0.004												
Los Angele	2015	LDT2	Aggregatec	65	GAS	1538032.28																	
Los Angele	2015	LDT2	Aggregatec	65	DSL	2122.03	41.69	40.49	0.008519684	0.001	0.001												
Los Angele	2015	LHDT1	Aggregatec	65	GAS	260843.90																	
Los Angele	2015	LHDT1	Aggregatec	65	DSL	253565.54	4981.13	4837.81	0.027480654	0.302	0.293												
Los Angele	2015	LHDT2	Aggregatec	65	GAS	55608.08																	
Los Angele	2015	LHDT2	Aggregatec	65	DSL	116524.52	2289.05	2223.18	0.023705549	0.120	0.116												
Los Angele	2015	MDV	Aggregatec	65	GAS	996059.59																	
Los Angele	2015	MDV	Aggregatec	65	DSL	12025.33	236.23	229.43	0.011618432	0.006	0.006												
Los Angele	2015	MH	Aggregatec	65	GAS	15284.66																	
Los Angele	2015	MH	Aggregatec	65	DSL	4187.83	82.27	79.90	0.19832115	0.036	0.035												
Los Angele	2015	MHDT	Aggregatec	65	GAS	53035.53																	
Los Angele	2015	MHDT	Aggregatec	65	DSL	360682.53	7085.37	6881.50	0.177413013	2.771	2.692												
Los Angele	2015	OBUS	Aggregatec	65	GAS	19915.01																	
Los Angele	2015	OBUS	Aggregatec	65	DSL	32226.17	633.06	614.85	0.069414606	0.097	0.094												
Los Angele	2015	SBUS	Aggregatec	55	GAS	1763.27																	
Los Angele	2015	SBUS	Aggregatec	55	DSL	4785.99	94.02	91.31	0.066771424	0.014	0.013												
Los Angele	2015	UBUS	Aggregatec	65	GAS	2242.48																	
Los Angele	2015	UBUS	Aggregatec	65	DSL	8016.66	157.48	152.95	0.176063592	0.061	0.059												
						LM Total	8353117.79	Total LM Diesel Emissions	3.47	3.37	45	45	2.04E-04	2.04E-04									
								Total Diesel Emissions	5.77	5.42	Total Emissions per Volume Source for Modeling		3.40E-04	3.30E-04									

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Project: Regional Transportation Plan Risk Assessment Emissions

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: 2015

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment	LM VMT/day	HD VMT/day
LA I-710 in Compton Northbound	178,750	23,385
LA I-710 in Compton Southbound	133,387	21,271
*LA I-710 in Compton, north of the intersection with SR 91		
Total Segment Length Northbound	1.34 miles	
Total Segment Length Southbound	1.34 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Emissions per Volume Source for 1-mile segment Model		
							Diesel VMT/day	Diesel VMT/day		PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2015	HHDT	Aggregatec	55	GAS	4419.08										
Los Angele	2015	HHDT	Aggregatec	55	DSL	576422.64	23206.60	21108.98	0.064932727	3.32	3.02	34	34	3.83E-04	3.48E-04	
						HHDT Total	580841.72									
Los Angele	2015	LDA	Aggregatec	65	GAS	4214659.76										
Los Angele	2015	LDA	Aggregatec	65	DSL	31654.76	677.39	505.48	0.039353026	0.059	0.044					
Los Angele	2015	LDT1	Aggregatec	65	GAS	369362.50										
Los Angele	2015	LDT1	Aggregatec	65	DSL	519.37	11.11	8.29	0.167195976	0.004	0.003					
Los Angele	2015	LDT2	Aggregatec	65	GAS	1538032.28										
Los Angele	2015	LDT2	Aggregatec	65	DSL	2122.03	45.41	33.89	0.008519684	0.001	0.001					
Los Angele	2015	LHDT1	Aggregatec	65	GAS	260843.90										
Los Angele	2015	LHDT1	Aggregatec	65	DSL	253565.54	5426.10	4049.06	0.027480654	0.329	0.245					
Los Angele	2015	LHDT2	Aggregatec	65	GAS	55608.08										
Los Angele	2015	LHDT2	Aggregatec	65	DSL	116524.52	2493.53	1860.72	0.023705549	0.130	0.097					
Los Angele	2015	MDV	Aggregatec	65	GAS	996059.59										
Los Angele	2015	MDV	Aggregatec	65	DSL	12025.33	257.33	192.03	0.011618432	0.007	0.005					
Los Angele	2015	MH	Aggregatec	65	GAS	15284.66										
Los Angele	2015	MH	Aggregatec	65	DSL	4187.83	89.62	66.87	0.19832115	0.039	0.029					
Los Angele	2015	MHDT	Aggregatec	65	GAS	53035.53										
Los Angele	2015	MHDT	Aggregatec	65	DSL	360682.53	7718.32	5759.56	0.177413013	3.019	2.253					
Los Angele	2015	OBUS	Aggregatec	65	GAS	19915.01										
Los Angele	2015	OBUS	Aggregatec	65	DSL	32226.17	689.61	514.60	0.069414606	0.106	0.079					
Los Angele	2015	SBUS	Aggregatec	55	GAS	1763.27										
Los Angele	2015	SBUS	Aggregatec	55	DSL	4785.99	102.42	76.43	0.066771424	0.015	0.011					
Los Angele	2015	UBUS	Aggregatec	65	GAS	2242.48										
Los Angele	2015	UBUS	Aggregatec	65	DSL	8016.66	171.55	128.01	0.176063592	0.067	0.050					
						LM Total	8353117.79									
									Total LM Diesel Emissions	3.77	2.82	34	34	4.35E-04	3.25E-04	
									Total Diesel Emissions	7.10	5.84	Total Emissions per Volume Source for Modeling		8.18E-04	6.73E-04	

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
 Project: Regional Transportation Plan Risk Assessment Emissions
 EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: Los Angeles
 Calendar Year: 2015
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT, lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment	LM VMT/day	HD VMT/day
LA SR-60 DB Eastbound	382,009	40,737
LA SR-60 DB Westbound	382,164	40,328
*LA SR-60 near Diamond Bar		
Total Segment Length Eastbound	3.14 miles	
Total Segment Length Westbound	2.98 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Emissions per Volume Source for 1-mile segment Model		
							Diesel VMT/day	Diesel VMT/day		PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Eastbound g/sec	Westbound g/sec
Los Angele	2015	HHDT	Aggregatec	55	GAS	4419.08										
Los Angele	2015	HHDT	Aggregatec	55	DSL	576422.64	40427.24	40021.39	0.064932727	5.79	5.73	46	46	2.10E-04	2.19E-04	
						HHDT Total										
						580841.72										
Los Angele	2015	LDA	Aggregatec	65	GAS	4214659.76										
Los Angele	2015	LDA	Aggregatec	65	DSL	31654.76	1447.65	1448.24	0.039353026	0.126	0.126					
Los Angele	2015	LDT1	Aggregatec	65	GAS	369362.50										
Los Angele	2015	LDT1	Aggregatec	65	DSL	519.37	23.75	23.76	0.167195976	0.009	0.009					
Los Angele	2015	LDT2	Aggregatec	65	GAS	1538032.28										
Los Angele	2015	LDT2	Aggregatec	65	DSL	2122.03	97.05	97.08	0.008519684	0.002	0.002					
Los Angele	2015	LHDT1	Aggregatec	65	GAS	260843.90										
Los Angele	2015	LHDT1	Aggregatec	65	DSL	253565.54	11596.19	11600.90	0.027480654	0.703	0.703					
Los Angele	2015	LHDT2	Aggregatec	65	GAS	55608.08										
Los Angele	2015	LHDT2	Aggregatec	65	DSL	116524.52	5328.96	5331.12	0.023705549	0.279	0.279					
Los Angele	2015	MDV	Aggregatec	65	GAS	996059.59										
Los Angele	2015	MDV	Aggregatec	65	DSL	12025.33	549.95	550.17	0.011618432	0.014	0.014					
Los Angele	2015	MH	Aggregatec	65	GAS	15284.66										
Los Angele	2015	MH	Aggregatec	65	DSL	4187.83	191.52	191.60	0.19832115	0.084	0.084					
Los Angele	2015	MHDT	Aggregatec	65	GAS	53035.53										
Los Angele	2015	MHDT	Aggregatec	65	DSL	360682.53	16494.93	16501.61	0.177413013	6.452	6.454					
Los Angele	2015	OBUS	Aggregatec	65	GAS	19915.01										
Los Angele	2015	OBUS	Aggregatec	65	DSL	32226.17	1473.78	1474.38	0.069414606	0.226	0.226					
Los Angele	2015	SBUS	Aggregatec	55	GAS	1763.27										
Los Angele	2015	SBUS	Aggregatec	55	DSL	4785.99	218.88	218.96	0.066771424	0.032	0.032					
Los Angele	2015	UBUS	Aggregatec	65	GAS	2242.48										
Los Angele	2015	UBUS	Aggregatec	65	DSL	8016.66	366.62	366.77	0.176063592	0.142	0.142					
						LM Total	8353117.79									
								Total LM Diesel Emissions		8.07	8.07	46	46	2.93E-04	3.09E-04	
								Total Diesel Emissions	13.85	13.80	Total Emissions per Volume Source for Modeling		5.04E-04	5.28E-04		

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Project: Regional Transportation Plan Risk Assessment Emissions

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: 2015

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Additional Segment	LM VMT/day	HD VMT/day
LA SR-60 SEM, El Monte Eastbound	199,784	14,054
LA SR-60 SEM, El Monte Westbound	209,315	15,714
*LA SR-60 in the El Monte / Peck Rd area		
Total segment length		
Total Segment Length Eastbound	1.52 miles	
Total Segment Length Westbound	1.50 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound No. of Vol Sources	Westbound No. of Vol Sources	Emissions per Volume Source for 1- mile segment Model		
							Diesel VMT/day	Diesel VMT/day		PM10_RUNEX (lb/day)	DPM Emissions (lb/day)			Eastbound g/sec	Westbound g/sec	
Los Angele	2015	HHDT	Aggregatec	55	GAS	4419.08										
Los Angele	2015	HHDT	Aggregatec	55	DSL	576422.64	13947.11	15594.04	0.064932727	2.00	2.23	39	39	1.77E-04	2.00E-04	
						HHDT Total										
						580841.72										
Los Angele	2015	LDA	Aggregatec	65	GAS	4214659.76										
Los Angele	2015	LDA	Aggregatec	65	DSL	31654.76	757.10	793.21	0.039353026	0.066	0.069					
Los Angele	2015	LDT1	Aggregatec	65	GAS	369362.50										
Los Angele	2015	LDT1	Aggregatec	65	DSL	519.37	12.42	13.01	0.167195976	0.005	0.005					
Los Angele	2015	LDT2	Aggregatec	65	GAS	1538032.28										
Los Angele	2015	LDT2	Aggregatec	65	DSL	2122.03	50.75	53.17	0.008519684	0.001	0.001					
Los Angele	2015	LHDT1	Aggregatec	65	GAS	260843.90										
Los Angele	2015	LHDT1	Aggregatec	65	DSL	253565.54	6064.61	6353.92	0.027480654	0.367	0.385					
Los Angele	2015	LHDT2	Aggregatec	65	GAS	55608.08										
Los Angele	2015	LHDT2	Aggregatec	65	DSL	116524.52	2786.96	2919.91	0.023705549	0.146	0.153					
Los Angele	2015	MDV	Aggregatec	65	GAS	996059.59										
Los Angele	2015	MDV	Aggregatec	65	DSL	12025.33	287.61	301.33	0.011618432	0.007	0.008					
Los Angele	2015	MH	Aggregatec	65	GAS	15284.66										
Los Angele	2015	MH	Aggregatec	65	DSL	4187.83	100.16	104.94	0.19832115	0.044	0.046					
Los Angele	2015	MHDT	Aggregatec	65	GAS	53035.53										
Los Angele	2015	MHDT	Aggregatec	65	DSL	360682.53	8626.57	9038.09	0.177413013	3.374	3.535					
Los Angele	2015	OBUS	Aggregatec	65	GAS	19915.01										
Los Angele	2015	OBUS	Aggregatec	65	DSL	32226.17	770.76	807.53	0.069414606	0.118	0.124					
Los Angele	2015	SBUS	Aggregatec	55	GAS	1763.27										
Los Angele	2015	SBUS	Aggregatec	55	DSL	4785.99	114.47	119.93	0.066771424	0.017	0.018					
Los Angele	2015	UBUS	Aggregatec	65	GAS	2242.48										
Los Angele	2015	UBUS	Aggregatec	65	DSL	8016.66	191.74	200.88	0.176063592	0.074	0.078					
						LM Total	8353117.79									
								Total LM Diesel Emissions		4.22	4.42	39	39	3.74E-04	3.97E-04	
								Total Diesel Emissions		6.22	6.65	Total Emissions per Volume		5.50E-04	5.97E-04	
												Source for Modeling				

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
 Project: Regional Transportation Plan Risk Assessment Emissions
 EMFAC2014 (v1.0.7) Emission Rates
 Region Type: County
 Region: Orange
 Calendar Year: 2015
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment
 ORA I-5 Northbound LM VMT/day 214,774 HD VMT/day 10,227
 ORA I-5 Southbound 151,474 6,449
 *ORA I-5 in Orange County, near intersection of SR 57 and SR 22
 Total segment length
 Total Segment Length Northbound 1.32 miles
 Total Segment Length Eastbound 1.32 miles

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Northbound		Southbound		Emission Factor	Northbound		Southbound		Emissions per Volume Source for 1-mile segment Model				
							Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)		DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec				
Orange	2015	HHDT	Aggregatec	55	GAS	1301.86														
Orange	2015	HHDT	Aggregatec	55	DSL	102957.74	10099.25	6368.21	0.083331046	1.86	1.17	26	26	2.84E-04	1.79E-04					
					HHDT Total	104259.61														
Orange	2015	LDA	Aggregatec	65	GAS	2568210.57														
Orange	2015	LDA	Aggregatec	65	DSL	21451.47	952.58	671.83	0.024973543	0.052	0.037									
Orange	2015	LDT1	Aggregatec	65	GAS	223028.51														
Orange	2015	LDT1	Aggregatec	65	DSL	156.39	6.94	4.90	0.161180683	0.002	0.002									
Orange	2015	LDT2	Aggregatec	65	GAS	1039549.78														
Orange	2015	LDT2	Aggregatec	65	DSL	1538.79	68.33	48.19	0.005047209	0.001	0.001									
Orange	2015	LHDT1	Aggregatec	65	GAS	67543.36														
Orange	2015	LHDT1	Aggregatec	65	DSL	78023.25	3464.72	2443.57	0.028412371	0.217	0.153									
Orange	2015	LHDT2	Aggregatec	65	GAS	13927.93														
Orange	2015	LHDT2	Aggregatec	65	DSL	31443.39	1396.28	984.76	0.024330169	0.075	0.053									
Orange	2015	MDV	Aggregatec	65	GAS	620994.27														
Orange	2015	MDV	Aggregatec	65	DSL	7776.98	345.35	243.56	0.007753133	0.006	0.004									
Orange	2015	MH	Aggregatec	65	GAS	4498.86														
Orange	2015	MH	Aggregatec	65	DSL	1813.99	80.55	56.81	0.219815897	0.039	0.028									
Orange	2015	MHDT	Aggregatec	65	GAS	13866.23														
Orange	2015	MHDT	Aggregatec	65	DSL	130165.36	5780.15	4076.58	0.17120599	2.182	1.539									
Orange	2015	OBUS	Aggregatec	65	GAS	4088.85														
Orange	2015	OBUS	Aggregatec	65	DSL	4928.52	218.86	154.35	0.069616238	0.034	0.024									
Orange	2015	SBUS	Aggregatec	55	GAS	537.08														
Orange	2015	SBUS	Aggregatec	55	DSL	1394.27	61.91	43.67	0.066701254	0.009	0.006									
Orange	2015	UBUS	Aggregatec	65	GAS	617.99														
Orange	2015	UBUS	Aggregatec	65	DSL	1010.85	44.89	31.66	0.087445163	0.009	0.006									
					LM Total	4836566.70														
									Total LM Diesel Emissions	2.63	1.85	26	26	4.02E-04	2.83E-04					
									Total Diesel Emissions	4.48	3.02	Total Emissions per Volume Source for Modeling		6.85E-04	4.62E-04					

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
 Project: Regional Transportation Plan Risk Assessment Emissions
 EMFAC2014 (v1.0.7) Emission Rates
 Region Type: County
 Region: Orange
 Calendar Year: 2015
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment
 ORA I-405 Seal Beach, Corona Northbound LM VMT/day 235,828 HD VMT/day 20,205
 ORA I-405 Seal Beach, Corona Southbound 217,558 18,590
 *I-405 in Seal Beach, east of the I-605 interchange
 Total Segment Length Northbound 1.09 miles
 Total Segment Length Southbound 1.02 miles

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Northbound	Southbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Emissions per Volume Source for 1-mile segment Model		
							Diesel VMT/day	Diesel VMT/day		DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Eastbound g/sec	Westbound g/sec	
Orange	2015	HHDT	Aggregatec	55	GAS	1301.86										
Orange	2015	HHDT	Aggregatec	55	DSL	102957.74	19953.18	18357.94	0.083331046	3.67	3.37	28	28	6.31E-04	6.20E-04	
						HHDT Total										
Orange	2015	LDA	Aggregatec	65	GAS	2568210.57										
Orange	2015	LDA	Aggregatec	65	DSL	21451.47	1045.96	964.93	0.024973543	0.058	0.053					
Orange	2015	LDT1	Aggregatec	65	GAS	223028.51										
Orange	2015	LDT1	Aggregatec	65	DSL	156.39	7.63	7.03	0.161180683	0.003	0.002					
Orange	2015	LDT2	Aggregatec	65	GAS	1039549.78										
Orange	2015	LDT2	Aggregatec	65	DSL	1538.79	75.03	69.22	0.005047209	0.001	0.001					
Orange	2015	LHDT1	Aggregatec	65	GAS	67543.36										
Orange	2015	LHDT1	Aggregatec	65	DSL	78023.25	3804.36	3509.63	0.028412371	0.238	0.220					
Orange	2015	LHDT2	Aggregatec	65	GAS	13927.93										
Orange	2015	LHDT2	Aggregatec	65	DSL	31443.39	1533.16	1414.38	0.024330169	0.082	0.076					
Orange	2015	MDV	Aggregatec	65	GAS	620994.27										
Orange	2015	MDV	Aggregatec	65	DSL	7776.98	379.20	349.82	0.007753133	0.006	0.006					
Orange	2015	MH	Aggregatec	65	GAS	4498.86										
Orange	2015	MH	Aggregatec	65	DSL	1813.99	88.45	81.60	0.219815897	0.043	0.040					
Orange	2015	MHDT	Aggregatec	65	GAS	13866.23										
Orange	2015	MHDT	Aggregatec	65	DSL	130165.36	6346.78	5855.07	0.17120599	2.396	2.210					
Orange	2015	OBUS	Aggregatec	65	GAS	4088.85										
Orange	2015	OBUS	Aggregatec	65	DSL	4928.52	240.31	221.69	0.069616238	0.037	0.034					
Orange	2015	SBUS	Aggregatec	55	GAS	537.08										
Orange	2015	SBUS	Aggregatec	55	DSL	1394.27	67.98	62.72	0.066701254	0.010	0.009					
Orange	2015	UBUS	Aggregatec	65	GAS	617.99										
Orange	2015	UBUS	Aggregatec	65	DSL	1010.85	49.29	45.47	0.087445163	0.010	0.009					
						LM Total	4836566.70					28	28	4.96E-04	4.89E-04	
										Total LM Diesel Emissions	2.88	2.66				
										Total Diesel Emissions	6.55	6.03				
														Total Emissions per Volume Source for Modeling	1.13E-03	1.11E-03

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
 Project: Regional Transportation Plan Risk Assessment Emissions
 EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: Riverside
 Calendar Year: 2015
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT, lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Additional Segment
 RIV I-10 in the Banning area Eastbound LM VMT/day 320,238 HD VMT/day 71,178
 RIV I-10 in the Banning area Westbound 315,658 70,605
 *RIV I-10 in the Banning area
 Total segment length
 Total Segment Length Eastbound 5.01 miles
 Total Segment Length Westbound 4.98 miles

													Emissions per Volume Source for 1-mile segment Model			
							Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec	
Riverside	2015	HHDT	Aggregatec	55	GAS	1403.89										
Riverside	2015	HHDT	Aggregatec	55	DSL	308092.30	70855.35	70285.10	0.073538006	11.49	11.39	45	45	2.68E-04	2.67E-04	
						HHDT Total	309496.19									
Riverside	2015	LDA	Aggregatec	65	GAS	2670667.33										
Riverside	2015	LDA	Aggregatec	65	DSL	22040.31	1380.10	1360.36	0.023015548	0.070	0.069					
Riverside	2015	LDT1	Aggregatec	65	GAS	228955.94										
Riverside	2015	LDT1	Aggregatec	65	DSL	189.30	11.85	11.68	0.178432445	0.005	0.005					
Riverside	2015	LDT2	Aggregatec	65	GAS	945884.23										
Riverside	2015	LDT2	Aggregatec	65	DSL	1242.57	77.81	76.69	0.009061241	0.002	0.002					
Riverside	2015	LHDT1	Aggregatec	65	GAS	102120.28										
Riverside	2015	LHDT1	Aggregatec	65	DSL	146141.06	9150.93	9020.07	0.034532967	0.697	0.687					
Riverside	2015	LHDT2	Aggregatec	65	GAS	17415.00										
Riverside	2015	LHDT2	Aggregatec	65	DSL	55134.61	3452.37	3403.00	0.029052946	0.221	0.218					
Riverside	2015	MDV	Aggregatec	65	GAS	730217.11										
Riverside	2015	MDV	Aggregatec	65	DSL	7172.99	449.15	442.73	0.011795897	0.012	0.012					
Riverside	2015	MH	Aggregatec	65	GAS	9333.27										
Riverside	2015	MH	Aggregatec	65	DSL	3529.49	221.01	217.85	0.240432926	0.117	0.115					
Riverside	2015	MHDT	Aggregatec	65	GAS	13306.78										
Riverside	2015	MHDT	Aggregatec	65	DSL	145614.04	9117.93	8987.54	0.20048642	4.030	3.972					
Riverside	2015	OBUS	Aggregatec	65	GAS	5991.76										
Riverside	2015	OBUS	Aggregatec	65	DSL	5271.46	330.08	325.36	0.066701611	0.049	0.048					
Riverside	2015	SBUS	Aggregatec	55	GAS	663.36										
Riverside	2015	SBUS	Aggregatec	55	DSL	1633.16	102.26	100.80	0.066815392	0.015	0.015					
Riverside	2015	UBUS	Aggregatec	65	GAS	812.34										
Riverside	2015	UBUS	Aggregatec	65	DSL	890.87	55.78	54.99	0.131129181	0.016	0.016					
						LM Total	5114227.27									
									Total LM Diesel Emissions	5.23	5.16	45	45	1.22E-04	1.21E-04	
									Total Diesel Emissions	16.72	16.55	Total Emissions per Volume Source for Modeling				
														3.89E-04	3.88E-04	

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
 Project: Regional Transportation Plan Risk Assessment Emissions
 EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: Riverside
 Calendar Year: 2015
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Additional Segment
 RIV 1-15, Riverside Northbound 291,514 31,564
 RIV 1-15, Riverside Southbound 347,213 37,377
 *RIV 1-15, Riverside County, near Temecula
 Total segment length
 Total Segment Length Northbound 4.80 miles
 Total Segment Length Southbound 5.84 miles

										Emissions per Volume Source for 1-mile segment Model					
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Northbound Diesel VMT/day	Southbound Diesel VMT/day	Emission Factor PM10_RUNEX	Northbound DPM Emissions (lb/day)	Southbound DPM Emissions (lb/day)	Northbound No. of Vol Sources	Southbound No. of Vol Sources	Northbound g/sec	Southbound g/sec
Riverside	2015	HHDT	Aggregatec	55	GAS	1403.89									
Riverside	2015	HHDT	Aggregatec	55	DSL	308092.30	31420.56	37207.63	0.073538006	5.09	6.03	45	45	1.24E-04	1.21E-04
						HHDT Total									
						309496.19									
Riverside	2015	LDA	Aggregatec	65	GAS	2670667.33									
Riverside	2015	LDA	Aggregatec	65	DSL	22040.31	1256.31	1496.35	0.023015548	0.064	0.076				
Riverside	2015	LDT1	Aggregatec	65	GAS	228955.94									
Riverside	2015	LDT1	Aggregatec	65	DSL	189.30	10.79	12.85	0.178432445	0.004	0.005				
Riverside	2015	LDT2	Aggregatec	65	GAS	945884.23									
Riverside	2015	LDT2	Aggregatec	65	DSL	1242.57	70.83	84.36	0.009061241	0.001	0.002				
Riverside	2015	LHDT1	Aggregatec	65	GAS	102120.28									
Riverside	2015	LHDT1	Aggregatec	65	DSL	146141.06	8330.13	9921.76	0.034532967	0.634	0.755				
Riverside	2015	LHDT2	Aggregatec	65	GAS	17415.00									
Riverside	2015	LHDT2	Aggregatec	65	DSL	55134.61	3142.71	3743.18	0.029052946	0.201	0.240				
Riverside	2015	MDV	Aggregatec	65	GAS	730217.11									
Riverside	2015	MDV	Aggregatec	65	DSL	7172.99	408.87	486.99	0.011795897	0.011	0.013				
Riverside	2015	MH	Aggregatec	65	GAS	9333.27									
Riverside	2015	MH	Aggregatec	65	DSL	3529.49	201.18	239.62	0.240432926	0.107	0.127				
Riverside	2015	MHDT	Aggregatec	65	GAS	13306.78									
Riverside	2015	MHDT	Aggregatec	65	DSL	145614.04	8300.09	9885.98	0.20048642	3.669	4.370				
Riverside	2015	OBUS	Aggregatec	65	GAS	5991.76									
Riverside	2015	OBUS	Aggregatec	65	DSL	5271.46	300.48	357.89	0.066701611	0.044	0.053				
Riverside	2015	SBUS	Aggregatec	55	GAS	663.36									
Riverside	2015	SBUS	Aggregatec	55	DSL	1633.16	93.09	110.88	0.066815392	0.014	0.016				
Riverside	2015	UBUS	Aggregatec	65	GAS	812.34									
Riverside	2015	UBUS	Aggregatec	65	DSL	890.87	50.78	60.48	0.131129181	0.015	0.017				
						LM Total	5114227.27								
									Total LM Diesel Emissions	4.76	5.67	45	45	1.16E-04	1.13E-04
									Total Diesel Emissions	9.86	11.71	Total Emissions per Volume Source for Modeling		2.40E-04	2.34E-04

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Project: Regional Transportation Plan Risk Assessment Emissions

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Riverside

Calendar Year: 2015

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment	LM VMT/day	HD VMT/day
RIV SR-91 in Corona Eastbound	280,666	34,243
RIV SR-91 in Corona Westbound	262,746	35,070
*SR 91 in Corona, east of the intersection with SR 71		
Total Segment Length Eastbound	2.01 miles	
Total Segment Length Westbound	1.76 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Emissions per Volume Source for 1-mile segment Model		
							Diesel VMT/day	Diesel VMT/day		PM10_RUNEX	DPM Emissions (lb/day)			DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources
Riverside	2015	HHDT	Aggregatec	55	GAS	1403.89										
Riverside	2015	HHDT	Aggregatec	55	DSL	308092.30	34087.92	34910.88	0.073538006	5.53	5.66	35	35	4.12E-04	4.82E-04	
						HHDT Total	309496.19									
Riverside	2015	LDA	Aggregatec	65	GAS	2670667.33										
Riverside	2015	LDA	Aggregatec	65	DSL	22040.31	1209.56	1132.33	0.023015548	0.061	0.057					
Riverside	2015	LDT1	Aggregatec	65	GAS	228955.94										
Riverside	2015	LDT1	Aggregatec	65	DSL	189.30	10.39	9.73	0.178432445	0.004	0.004					
Riverside	2015	LDT2	Aggregatec	65	GAS	945884.23										
Riverside	2015	LDT2	Aggregatec	65	DSL	1242.57	68.19	63.84	0.009061241	0.001	0.001					
Riverside	2015	LHDT1	Aggregatec	65	GAS	102120.28										
Riverside	2015	LHDT1	Aggregatec	65	DSL	146141.06	8020.15	7508.07	0.034532967	0.611	0.572					
Riverside	2015	LHDT2	Aggregatec	65	GAS	17415.00										
Riverside	2015	LHDT2	Aggregatec	65	DSL	55134.61	3025.76	2832.57	0.029052946	0.194	0.181					
Riverside	2015	MDV	Aggregatec	65	GAS	730217.11										
Riverside	2015	MDV	Aggregatec	65	DSL	7172.99	393.65	368.52	0.011795897	0.010	0.010					
Riverside	2015	MH	Aggregatec	65	GAS	9333.27										
Riverside	2015	MH	Aggregatec	65	DSL	3529.49	193.70	181.33	0.240432926	0.103	0.096					
Riverside	2015	MHDT	Aggregatec	65	GAS	13306.78										
Riverside	2015	MHDT	Aggregatec	65	DSL	145614.04	7991.23	7481.00	0.20048642	3.532	3.307					
Riverside	2015	OBUS	Aggregatec	65	GAS	5991.76										
Riverside	2015	OBUS	Aggregatec	65	DSL	5271.46	289.30	270.82	0.066701611	0.043	0.040					
Riverside	2015	SBUS	Aggregatec	55	GAS	663.36										
Riverside	2015	SBUS	Aggregatec	55	DSL	1633.16	89.63	83.90	0.066815392	0.013	0.012					
Riverside	2015	UBUS	Aggregatec	65	GAS	812.34										
Riverside	2015	UBUS	Aggregatec	65	DSL	890.87	48.89	45.77	0.131129181	0.014	0.013					
						LM Total	5114227.27									
									Total LM Diesel Emissions	4.59	4.29					
									Total Diesel Emissions	10.11	9.95	35	35	3.42E-04	3.66E-04	
												Total Emissions per Volume Source for Modeling		7.55E-04	8.48E-04	

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
 Project: Regional Transportation Plan Risk Assessment Emissions
 EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: San Bernardino
 Calendar Year: 2015
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories

Original Segment
 SB I-15 in Ontario Northbound LM VMT/day 241,942 HD VMT/day 26,458
 SB I-15 in Ontario Southbound 249,613 26,679
 *SB I-15 in Ontario
 Total Segment Length Northbound 2.95 miles
 Total Segment Length Southbound 2.97 miles

Units: miles/day for VMT, lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Emissions per Volume Source for 1-mile segment Model	
							Diesel VMT/day	Diesel VMT/day		PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Northbound g/sec
San Bernar	2015	HHDT	Aggregatec	55	GAS	1498.52									
San Bernar	2015	HHDT	Aggregatec	55	DSL	238609.31	26292.74	26512.15	0.064652943	3.75	3.78	38	38	1.76E-04	1.76E-04
						HHDT Total	240107.82								
San Bernar	2015	LDA	Aggregatec	65	GAS	3384933.90									
San Bernar	2015	LDA	Aggregatec	65	DSL	26056.95	1001.84	1033.60	0.027732343	0.061	0.063				
San Bernar	2015	LDT1	Aggregatec	65	GAS	282279.07									
San Bernar	2015	LDT1	Aggregatec	65	DSL	343.58	13.21	13.63	0.172149303	0.005	0.005				
San Bernar	2015	LDT2	Aggregatec	65	GAS	1168763.88									
San Bernar	2015	LDT2	Aggregatec	65	DSL	1479.55	56.89	58.69	0.0085998	0.001	0.001				
San Bernar	2015	LHDT1	Aggregatec	65	GAS	129391.39									
San Bernar	2015	LHDT1	Aggregatec	65	DSL	147063.55	5654.32	5833.59	0.034902873	0.435	0.449				
San Bernar	2015	LHDT2	Aggregatec	65	GAS	21213.83									
San Bernar	2015	LHDT2	Aggregatec	65	DSL	52935.62	2035.28	2099.80	0.029111634	0.131	0.135				
San Bernar	2015	MDV	Aggregatec	65	GAS	896162.09									
San Bernar	2015	MDV	Aggregatec	65	DSL	8976.64	345.14	356.08	0.015758862	0.012	0.012				
San Bernar	2015	MH	Aggregatec	65	GAS	12045.78									
San Bernar	2015	MH	Aggregatec	65	DSL	3445.84	132.49	136.69	0.23710071	0.069	0.071				
San Bernar	2015	MHDT	Aggregatec	65	GAS	20064.86									
San Bernar	2015	MHDT	Aggregatec	65	DSL	117668.87	4524.15	4667.59	0.178073301	1.776	1.832				
San Bernar	2015	OBUS	Aggregatec	65	GAS	10235.27									
San Bernar	2015	OBUS	Aggregatec	65	DSL	3966.84	152.52	157.35	0.070308049	0.024	0.024				
San Bernar	2015	SBUS	Aggregatec	55	GAS	459.36									
San Bernar	2015	SBUS	Aggregatec	55	DSL	1790.07	68.82	71.01	0.067061152	0.010	0.010				
San Bernar	2015	UBUS	Aggregatec	65	GAS	1377.61									
San Bernar	2015	UBUS	Aggregatec	65	DSL	2034.92	78.24	80.72	0.127329139	0.022	0.023				
						LM Total	6292689.45								
									Total LM Diesel Emissions	2.55	2.63	38	38	1.19E-04	1.22E-04
									Total Diesel Emissions	6.29	6.41	Total Emissions per Volume Source for Modeling		2.95E-04	2.98E-04

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
 Project: Regional Transportation Plan Risk Assessment Emissions
 EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: San Bernardino
 Calendar Year: 2015
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Additional Segment	LM VMT/day	HD VMT/day
SB I-15 in the Victorville area Northbound	170,736	42,857
SB I-15 in the Victorville area Southbound	163,348	42,614
*I-15 in the Victorville area		
Total segment length		
Total Segment Length Northbound	4.32 miles	
Total Segment Length Southbound	4.39 miles	

										Emissions per Volume Source for 1-mile segment Model					
										Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdIYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
San Bernar	2015	HHDT	Aggregatec		55 GAS	1498.52									
San Bernar	2015	HHDT	Aggregatec		55 DSL	238609.31	42589.33	42348.30	0.064652943	6.07	6.04	58	58	1.27E-04	1.24E-04
					HHDT Total	240107.82									
San Bernar	2015	LDA	Aggregatec		65 GAS	3384933.90									
San Bernar	2015	LDA	Aggregatec		65 DSL	26056.95	706.99	676.40	0.027732343	0.043	0.041				
San Bernar	2015	LDT1	Aggregatec		65 GAS	282279.07									
San Bernar	2015	LDT1	Aggregatec		65 DSL	343.58	9.32	8.92	0.172149303	0.004	0.003				
San Bernar	2015	LDT2	Aggregatec		65 GAS	1168763.88									
San Bernar	2015	LDT2	Aggregatec		65 DSL	1479.55	40.14	38.41	0.0085998	0.001	0.001				
San Bernar	2015	LHDT1	Aggregatec		65 GAS	129391.39									
San Bernar	2015	LHDT1	Aggregatec		65 DSL	147063.55	3990.19	3817.52	0.034902873	0.307	0.294				
San Bernar	2015	LHDT2	Aggregatec		65 GAS	21213.83									
San Bernar	2015	LHDT2	Aggregatec		65 DSL	52935.62	1436.27	1374.12	0.029111634	0.092	0.088				
San Bernar	2015	MDV	Aggregatec		65 GAS	896162.09									
San Bernar	2015	MDV	Aggregatec		65 DSL	8976.64	243.56	233.02	0.015758862	0.008	0.008				
San Bernar	2015	MH	Aggregatec		65 GAS	12045.78									
San Bernar	2015	MH	Aggregatec		65 DSL	3445.84	93.49	89.45	0.23710071	0.049	0.047				
San Bernar	2015	MHDT	Aggregatec		65 GAS	20064.86									
San Bernar	2015	MHDT	Aggregatec		65 DSL	117668.87	3192.65	3054.49	0.178073301	1.253	1.199				
San Bernar	2015	OBUS	Aggregatec		65 GAS	10235.27									
San Bernar	2015	OBUS	Aggregatec		65 DSL	3966.84	107.63	102.97	0.070308049	0.017	0.016				
San Bernar	2015	SBUS	Aggregatec		55 GAS	459.36									
San Bernar	2015	SBUS	Aggregatec		55 DSL	1790.07	48.57	46.47	0.067061152	0.007	0.007				
San Bernar	2015	UBUS	Aggregatec		65 GAS	1377.61									
San Bernar	2015	UBUS	Aggregatec		65 DSL	2034.92	55.21	52.82	0.127329139	0.015	0.015				
					LM Total	6292689.45									
								Total LM Diesel Emissions		1.80	1.72	58	58	3.76E-05	3.54E-05
								Total Diesel Emissions		7.87	7.76	Total Emissions per Volume Source for Modeling		1.65E-04	1.60E-04

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Project: Regional Transportation Plan Risk Assessment Emissions

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: San Bernardino

Calendar Year: 2015

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment	LM VMT/day	HD VMT/day
SB SR-60 in Ontario Eastbound	257,591	44,530
SB SR-60 in Ontario Westbound	248,515	42,065
*SR 60 in Ontario, west of the I-15 interchange		
Total Segment Length Eastbound	2.35 miles	
Total Segment Length Westbound	2.22 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Emissions per Volume Source for 1-mile segment Model		
							Diesel VMT/day	Diesel VMT/day		PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
San Bernar	2015	HHDT	Aggregatec	55	GAS	1498.52										
San Bernar	2015	HHDT	Aggregatec	55	DSL	238609.31	44252.13	41802.80	0.064652943	6.31	5.96	38	38	3.71E-04	3.71E-04	
						HHDT Total	240107.82									
San Bernar	2015	LDA	Aggregatec	65	GAS	3384933.90										
San Bernar	2015	LDA	Aggregatec	65	DSL	26056.95	1066.64	1029.06	0.027732343	0.065	0.063					
San Bernar	2015	LDT1	Aggregatec	65	GAS	282279.07										
San Bernar	2015	LDT1	Aggregatec	65	DSL	343.58	14.06	13.57	0.172149303	0.005	0.005					
San Bernar	2015	LDT2	Aggregatec	65	GAS	1168763.88										
San Bernar	2015	LDT2	Aggregatec	65	DSL	1479.55	60.57	58.43	0.0085998	0.001	0.001					
San Bernar	2015	LHDT1	Aggregatec	65	GAS	129391.39										
San Bernar	2015	LHDT1	Aggregatec	65	DSL	147063.55	6020.03	5807.92	0.034902873	0.463	0.447					
San Bernar	2015	LHDT2	Aggregatec	65	GAS	21213.83										
San Bernar	2015	LHDT2	Aggregatec	65	DSL	52935.62	2166.91	2090.57	0.029111634	0.139	0.134					
San Bernar	2015	MDV	Aggregatec	65	GAS	896162.09										
San Bernar	2015	MDV	Aggregatec	65	DSL	8976.64	367.46	354.51	0.015758862	0.013	0.012					
San Bernar	2015	MH	Aggregatec	65	GAS	12045.78										
San Bernar	2015	MH	Aggregatec	65	DSL	3445.84	141.06	136.09	0.23710071	0.074	0.071					
San Bernar	2015	MHDT	Aggregatec	65	GAS	20064.86										
San Bernar	2015	MHDT	Aggregatec	65	DSL	117668.87	4816.76	4647.05	0.178073301	1.891	1.824					
San Bernar	2015	OBUS	Aggregatec	65	GAS	10235.27										
San Bernar	2015	OBUS	Aggregatec	65	DSL	3966.84	162.38	156.66	0.070308049	0.025	0.024					
San Bernar	2015	SBUS	Aggregatec	55	GAS	459.36										
San Bernar	2015	SBUS	Aggregatec	55	DSL	1790.07	73.28	70.69	0.067061152	0.011	0.010					
San Bernar	2015	UBUS	Aggregatec	65	GAS	1377.61										
San Bernar	2015	UBUS	Aggregatec	65	DSL	2034.92	83.30		0.127329139	0.023	0.023					
						LM Total	6292689.45									
									Total LM Diesel Emissions	2.71	2.62	38	38	1.59E-04	1.63E-04	
									Total Diesel Emissions	9.02	8.57	Total Emissions per Volume Source for Modeling		5.30E-04	5.34E-04	

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
 Project: Regional Transportation Plan Risk Assessment Emissions
 EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: Ventura
 Calendar Year: 2015
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT, lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment LM VMT/day HD VMT/day
 VEN US-101 SB Ventura Freeway Northbound 173,653 14,154
 VEN US-101 SB Ventura Freeway Southbound 168,566 15,027
 *US-101 Freeway in San Buenaventura near the Ventura Harbor
 Total segment length
 Total Segment Length Northbound 3.21 miles
 Total Segment Length Southbound 3.26 miles

Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Emissions per Volume Source for		
							Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec	
Ventura	2015	HHDT	Aggregatec	55	GAS	335.21										
Ventura	2015	HHDT	Aggregatec	55	DSL	29611.35	13995.99	14858.42	0.107501813	3.32	3.52	74	74	7.33E-05	7.66E-05	
						HHDT Total										
Ventura	2015	LDA	Aggregatec	65	GAS	920759.04										
Ventura	2015	LDA	Aggregatec	65	DSL	8615.05	845.43	820.66	0.030348885	0.057	0.055					
Ventura	2015	LDT1	Aggregatec	65	GAS	81906.81										
Ventura	2015	LDT1	Aggregatec	65	DSL	91.58	8.99	8.72	0.168476516	0.003	0.003					
Ventura	2015	LDT2	Aggregatec	65	GAS	337444.14										
Ventura	2015	LDT2	Aggregatec	65	DSL	517.92	50.83	49.34	0.006643074	0.001	0.001					
Ventura	2015	LHDT1	Aggregatec	65	GAS	38288.46										
Ventura	2015	LHDT1	Aggregatec	65	DSL	60910.47	5977.37	5802.27	0.033740837	0.445	0.432					
Ventura	2015	LHDT2	Aggregatec	65	GAS	7591.20										
Ventura	2015	LHDT2	Aggregatec	65	DSL	21325.51	2092.75	2031.45	0.028046912	0.129	0.126					
Ventura	2015	MDV	Aggregatec	65	GAS	233842.11										
Ventura	2015	MDV	Aggregatec	65	DSL	2628.44	257.94	250.38	0.010802137	0.006	0.006					
Ventura	2015	MH	Aggregatec	65	GAS	3635.42										
Ventura	2015	MH	Aggregatec	65	DSL	1306.31	128.19	124.44	0.239502418	0.068	0.066					
Ventura	2015	MHDT	Aggregatec	65	GAS	3791.01										
Ventura	2015	MHDT	Aggregatec	65	DSL	43747.33	4293.09	4167.33	0.183419467	1.736	1.685					
Ventura	2015	OBUS	Aggregatec	65	GAS	1419.45										
Ventura	2015	OBUS	Aggregatec	65	DSL	1068.15	104.82	101.75	0.072530335	0.017	0.016					
Ventura	2015	SBUS	Aggregatec	55	GAS	74.80										
Ventura	2015	SBUS	Aggregatec	55	DSL	215.75	21.17	20.55	0.067180797	0.003	0.003					
Ventura	2015	UBUS	Aggregatec	65	GAS	128.39										
Ventura	2015	UBUS	Aggregatec	65	DSL	246.99	24.24	23.53	0.070473691	0.004	0.004					
						LM Total	1769554.33									
									Total LM Diesel Emissions	2.47	2.40	74	74	5.46E-05	5.21E-05	
									Total Diesel Emissions	5.79	5.92	Total Emissions per Volume Source for Modeling		1.28E-04	1.29E-04	

Client: SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Project: Regional Transportation Plan Risk Assessment Emissions

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Ventura

Calendar Year: 2015

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT,lb/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment	LM VMT/day	HD VMT/day
VEN US-101 in Thousand Oaks Northbound	73,667	6,251
VEN US-101 in Thousand Oaks Southbound	87,499	7,614
*US 101 in Thousand Oaks, east of SR 23		
Total segment length		
Total Segment Length Northbound	0.79 miles	
Total Segment Length Southbound	0.94 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Northbound		Southbound		Emission Factor	Northbound DPM Emissions (lb/day)	Southbound DPM Emissions (lb/day)	Northbound No. of Vol Sources	Southbound No. of Vol Sources	Emissions per Volume Source for 1- mile segment Model	
							Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	PM10_RUNEX						g/sec	g/sec
Ventura	2015	HHDT	Aggregatec	55	GAS	335.21											
Ventura	2015	HHDT	Aggregatec	55	DSL	29611.35	6180.97	7528.85	0.107501813	1.46	1.78	36	36	2.14E-04	2.60E-04		
						HHDT Total											
						29946.56											
Ventura	2015	LDA	Aggregatec	65	GAS	920759.04											
Ventura	2015	LDA	Aggregatec	65	DSL	8615.05	358.65	425.99	0.030348885	0.024	0.029						
Ventura	2015	LDT1	Aggregatec	65	GAS	81906.81											
Ventura	2015	LDT1	Aggregatec	65	DSL	91.58	3.81	4.53	0.168476516	0.001	0.002						
Ventura	2015	LDT2	Aggregatec	65	GAS	337444.14											
Ventura	2015	LDT2	Aggregatec	65	DSL	517.92	21.56	25.61	0.006643074	0.000	0.000						
Ventura	2015	LHDT1	Aggregatec	65	GAS	38288.46											
Ventura	2015	LHDT1	Aggregatec	65	DSL	60910.47	2535.72	3011.85	0.033740837	0.189	0.224						
Ventura	2015	LHDT2	Aggregatec	65	GAS	7591.20											
Ventura	2015	LHDT2	Aggregatec	65	DSL	21325.51	887.79	1054.48	0.028046912	0.055	0.065						
Ventura	2015	MDV	Aggregatec	65	GAS	233842.11											
Ventura	2015	MDV	Aggregatec	65	DSL	2628.44	109.42	129.97	0.010802137	0.003	0.003						
Ventura	2015	MH	Aggregatec	65	GAS	3635.42											
Ventura	2015	MH	Aggregatec	65	DSL	1306.31	54.38	64.59	0.239502418	0.029	0.034						
Ventura	2015	MHDT	Aggregatec	65	GAS	3791.01											
Ventura	2015	MHDT	Aggregatec	65	DSL	43747.33	1821.21	2163.18	0.183419467	0.736	0.875						
Ventura	2015	OBUS	Aggregatec	65	GAS	1419.45											
Ventura	2015	OBUS	Aggregatec	65	DSL	1068.15	44.47	52.82	0.072530335	0.007	0.008						
Ventura	2015	SBUS	Aggregatec	55	GAS	74.80											
Ventura	2015	SBUS	Aggregatec	55	DSL	215.75	8.98	10.67	0.067180797	0.001	0.002						
Ventura	2015	UBUS	Aggregatec	65	GAS	128.39											
Ventura	2015	UBUS	Aggregatec	65	DSL	246.99	10.28	12.21	0.070473691	0.002	0.002						
						LM Total	1769554.33										
									Total LM Diesel Emissions	1.05	1.24	36	36	1.53E-04	1.81E-04		
									Total Diesel Emissions	2.51	3.03	Total Emissions per Volume Source		3.66E-04	4.42E-04		
												for Modeling					

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Imperial

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
IMP I-8 just east of El Centro Eastbound	191,039	30,683
IMP I-8 just east of El Centro Westbound	115,930	14,854
*IMP I-8 just east of El Centro		
Total Segment Length Eastbound	1.51 miles	
Total Segment Length Westbound	1.51 miles	

														Emissions per Volume Source for 1-mile segment Model			
														Eastbound	Westbound	Eastbound	Westbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Eastbound Diesel VMT/day	Westbound Diesel VMT/day	Emission Factor PM10_RUNEX	Eastbound DPM Emissions (lb/day)	Westbound DPM Emissions (lb/day)	Eastbound No. of Vol Sources	Westbound No. of Vol Sources	Eastbound g/sec	Westbound g/sec		
Imperial	2040	HHDT	Aggregatec	55	GAS	344.61											
Imperial	2040	HHDT	Aggregatec	55	DSL	112537.37	30589.12	14808.49	0.00444601	0.30	0.15	74	74	1.41E-05	6.82E-06		
						HHDT Total	112881.97										
Imperial	2040	SBUS	Aggregatec	55	GAS	106.81											
Imperial	2040	SBUS	Aggregatec	55	DSL	133.56	21.40	12.99	0.002371209	0.000	0.000						
Imperial	2040	LDA	Aggregatec	65	GAS	652537.91											
Imperial	2040	LDA	Aggregatec	65	DSL	9049.41	1450.31	880.10	0.000607682	0.002	0.001						
Imperial	2040	LDT1	Aggregatec	65	GAS	40817.67											
Imperial	2040	LDT1	Aggregatec	65	DSL	23.04	3.69	2.24	0.004422653	0.000	0.000						
Imperial	2040	LDT2	Aggregatec	65	GAS	231016.98											
Imperial	2040	LDT2	Aggregatec	65	DSL	506.71	81.21	49.28	0.003155957	0.001	0.000						
Imperial	2040	LHDT1	Aggregatec	65	GAS	9623.67											
Imperial	2040	LHDT1	Aggregatec	65	DSL	23096.13	3701.51	2246.22	0.007196915	0.059	0.036						
Imperial	2040	LHDT2	Aggregatec	65	GAS	3638.16											
Imperial	2040	LHDT2	Aggregatec	65	DSL	11199.01	1794.81	1089.16	0.005588946	0.022	0.013						
Imperial	2040	MDV	Aggregatec	65	GAS	131010.07											
Imperial	2040	MDV	Aggregatec	65	DSL	3580.16	573.77	348.19	0.000845033	0.001	0.001						
Imperial	2040	MH	Aggregatec	65	GAS	1208.45											
Imperial	2040	MH	Aggregatec	65	DSL	380.40	60.96	37.00	0.02146537	0.003	0.002						
Imperial	2040	MHDT	Aggregatec	65	GAS	8871.92											
Imperial	2040	MHDT	Aggregatec	65	DSL	50973.55	8169.29	4957.45	0.002559514	0.046	0.028						
Imperial	2040	OBUS	Aggregatec	65	GAS	3105.57											
Imperial	2040	OBUS	Aggregatec	65	DSL	10460.70	1676.49	1017.36	0.002730687	0.010	0.006						
Imperial	2040	UBUS	Aggregatec	65	GAS	340.65											
Imperial	2040	UBUS	Aggregatec	65	DSL	336.86	53.99	32.76	0.008915933	0.001	0.001						
						LM Total	1192017.37					74	74	6.80E-06	4.13E-06		
									Total LM Diesel Emissions	0.14	0.09						
									Total Diesel Emissions	0.44	0.23						
												Total Emissions per Volume Source for Modeling					
														2.09E-05	1.09E-05		

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Imperial

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
IMP SR-78 Eastbound	83,147	17,539
IMP SR-78 Westbound	83,147	17,539
*IMP SR-78: State Road 78 Freeway in Westmorland		
Total segment length		
Total Segment Length Eastbound	0.88 miles	
Total Segment Length Westbound	0.88 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	Emission Factor	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
															Eastbound	Westbound
Imperial	2040	HHDT	Aggregate	55	GAS	344.61										
Imperial	2040	HHDT	Aggregate	55	DSL	112537.37	17485.07	17485.07	0.00444601	0.17	0.17	81	81	1.11E-05	1.11E-05	
						HHDT Total										
						112881.97										
Imperial	2040	SBUS	Aggregate	55	GAS	106.81										
Imperial	2040	SBUS	Aggregate	55	DSL	133.56	9.32	9.32	0.002371209	0.000	0.000					
Imperial	2040	LDA	Aggregate	65	GAS	652537.91										
Imperial	2040	LDA	Aggregate	65	DSL	9049.41	631.22	631.22	0.000607682	0.001	0.001					
Imperial	2040	LDT1	Aggregate	65	GAS	40817.67										
Imperial	2040	LDT1	Aggregate	65	DSL	23.04	1.61	1.61	0.004422653	0.000	0.000					
Imperial	2040	LDT2	Aggregate	65	GAS	231016.98										
Imperial	2040	LDT2	Aggregate	65	DSL	506.71	35.34	35.34	0.003155957	0.000	0.000					
Imperial	2040	LHDT1	Aggregate	65	GAS	9623.67										
Imperial	2040	LHDT1	Aggregate	65	DSL	23096.13	1611.02	1611.02	0.007196915	0.026	0.026					
Imperial	2040	LHDT2	Aggregate	65	GAS	3638.16										
Imperial	2040	LHDT2	Aggregate	65	DSL	11199.01	781.16	781.16	0.005588946	0.010	0.010					
Imperial	2040	MDV	Aggregate	65	GAS	131010.07										
Imperial	2040	MDV	Aggregate	65	DSL	3580.16	249.73	249.73	0.000845033	0.000	0.000					
Imperial	2040	MH	Aggregate	65	GAS	1208.45										
Imperial	2040	MH	Aggregate	65	DSL	380.40	26.53	26.53	0.02146537	0.001	0.001					
Imperial	2040	MHDT	Aggregate	65	GAS	8871.92										
Imperial	2040	MHDT	Aggregate	65	DSL	50973.55	3555.56	3555.56	0.002559514	0.020	0.020					
Imperial	2040	OBUS	Aggregate	65	GAS	3105.57										
Imperial	2040	OBUS	Aggregate	65	DSL	10460.70	729.67	729.67	0.002730687	0.004	0.004					
Imperial	2040	UBUS	Aggregate	65	GAS	340.65										
Imperial	2040	UBUS	Aggregate	65	DSL	336.86	23.50	23.50	0.008915933	0.000	0.000					
						LM Total	1192017.37									
									Total LM Diesel Emissions	0.06	0.06	81	81	4.08E-06	4.08E-06	
									Total Diesel Emissions	0.23	0.23	Total Emissions per Volume Source for Modeling		1.52E-05	1.52E-05	

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
LA I-110 Northbound	185,613	41,203
LA I-110 Southbound	143,830	27,204
*LA I-110 in the LA County area, Carson		
Total segment length		
Total Segment Length Northbound	1.98 miles	
Total Segment Length Southbound	1.92 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	Emission Factor	Northbound	Southbound	Northbound	Southbound	Emissions per Volume Source for 1-mile segment Model				
														Northbound	Southbound	Northbound	Southbound	
														No. of Vol Sources	No. of Vol Sources	g/sec	g/sec	
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56												
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	40937.08	27028.15	0.004705303	0.42	0.28			45	45	2.50E-05	1.70E-05	
						HHDT Total	1362297.90											
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05												
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	116.36	90.17	0.002363056	0.001	0.000							
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24												
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	1198.84	928.97	0.000638477	0.002	0.001							
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74												
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	4.77	3.70	0.005414579	0.000	0.000							
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22												
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	88.13	68.29	0.003206373	0.001	0.000							
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68												
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	7791.06	6037.22	0.005312212	0.091	0.071							
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09												
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	3978.78	3083.13	0.005548914	0.049	0.038							
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09												
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	606.81	470.21	0.000810979	0.001	0.001							
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81												
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	82.96	64.29	0.019049327	0.003	0.003							
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07												
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	9505.28	7365.56	0.002356509	0.049	0.038							
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64												
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	937.42	726.40	0.003145968	0.007	0.005							
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08												
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	61.24	47.46	0.008638593	0.001	0.001							
						LM Total	7934485.95							45	45	1.21E-05	9.63E-06	
								Total LM Diesel Emissions		0.20	0.16							
								Total Diesel Emissions		0.63	0.44							
														Total Emissions per Volume Source for Modeling				
																3.71E-05	2.67E-05	

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
LA I-710 in Compton Northbound	172,963	28,986
LA I-710 in Compton Southbound	143,043	23,015
*LA I-710 in Compton, north of the intersection with SR 91		
Total Segment Length Northbound	1.34 miles	
Total Segment Length Southbound	1.34 miles	

														Emissions per Volume Source for 1-mile segment Model	
														Northbound	Southbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele:	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele:	2040	HHDT	Aggregatec	55	DSL	1353513.34	28798.81	22867.06	0.004705303	0.30	0.24	34	34	3.44E-05	2.73E-05
						HHDT Total	1362297.90								
Los Angele:	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele:	2040	SBUS	Aggregatec	55	DSL	4974.29	108.43	89.68	0.002363056	0.001	0.000				
Los Angele:	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele:	2040	LDA	Aggregatec	65	DSL	51247.27	1117.14	923.89	0.000638477	0.002	0.001				
Los Angele:	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele:	2040	LDT1	Aggregatec	65	DSL	203.88	4.44	3.68	0.005414579	0.000	0.000				
Los Angele:	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele:	2040	LDT2	Aggregatec	65	DSL	3767.19	82.12	67.92	0.003206373	0.001	0.000				
Los Angele:	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele:	2040	LHDT1	Aggregatec	65	DSL	333048.29	7260.10	6004.20	0.005312212	0.085	0.070				
Los Angele:	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele:	2040	LHDT2	Aggregatec	65	DSL	170083.04	3707.63	3066.26	0.005548914	0.045	0.038				
Los Angele:	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele:	2040	MDV	Aggregatec	65	DSL	25939.59	565.46	467.64	0.000810979	0.001	0.001				
Los Angele:	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele:	2040	MH	Aggregatec	65	DSL	3546.36	77.31	63.93	0.019049327	0.003	0.003				
Los Angele:	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele:	2040	MHDT	Aggregatec	65	DSL	406327.01	8857.50	7325.27	0.002356509	0.046	0.038				
Los Angele:	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele:	2040	OBUS	Aggregatec	65	DSL	40072.26	873.53	722.42	0.003145968	0.006	0.005				
Los Angele:	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele:	2040	UBUS	Aggregatec	65	DSL	2618.07	57.07	47.20	0.008638593	0.001	0.001				
						LM Total	7934485.95					34	34	2.20E-05	1.82E-05
									Total LM Diesel Emissions	0.19	0.16			5.64E-05	4.55E-05
									Total Diesel Emissions	0.49	0.39	Total Emissions per Volume Source for Modeling			

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
LA SR-60 DB Eastbound	433,407	63,590
LA SR-60 DB Westbound	441,273	76,771
*LA SR-60 near Diamond Bar		
Total Segment Length Eastbound	3.14 miles	
Total Segment Length Westbound	3.12 miles	

										Emissions per Volume Source for 1-mile segment Model					
										Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	63180.40	76276.21	0.004705303	0.66	0.79	46	46	2.38E-05	2.89E-05
						HHDT Total	1362297.90								
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	271.71	276.64	0.002363056	0.001	0.001				
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	2799.29	2850.10	0.000638477	0.004	0.004				
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	11.14	11.34	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	205.78	209.51	0.003206373	0.001	0.001				
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	18192.15	18522.34	0.005312212	0.213	0.217				
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	9290.47	9459.10	0.005548914	0.114	0.116				
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	1416.90	1442.62	0.000810979	0.003	0.003				
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	193.71	197.23	0.019049327	0.008	0.008				
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	22194.86	22597.71	0.002356509	0.115	0.117				
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	2188.87	2228.60	0.003145968	0.015	0.015				
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	143.01	145.60	0.008638593	0.003	0.003				
						LM Total	7934486					46	46	1.74E-05	1.78E-05
									Total LM Diesel Emissions	0.478	0.486				
									Total Diesel Emissions	1.13	1.28				
												Total Emissions per Volume Source for Modeling		4.12E-05	4.67E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
LA SR-60 SEM, El Monte Eastbound	212,331	20,564
LA SR-60 SEM, El Monte Westbound	205,494	24,648
*LA SR-60 in the El Monte / Peck Rd area		
Total segment length		
Total Segment Length Eastbound	1.52 miles	
Total Segment Length Westbound	1.50 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
														Eastbound	Westbound
Los Angeles	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angeles	2040	HHDT	Aggregatec	55	DSL	1353513.34	20431.74	24488.77	0.004705303	0.21	0.25	39	39	1.88E-05	2.28E-05
						HHDT Total									
						1362297.90									
Los Angeles	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angeles	2040	SBUS	Aggregatec	55	DSL	4974.29	133.11	128.83	0.002363056	0.001	0.001				
Los Angeles	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angeles	2040	LDA	Aggregatec	65	DSL	51247.27	1371.40	1327.25	0.000638477	0.002	0.002				
Los Angeles	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angeles	2040	LDT1	Aggregatec	65	DSL	203.88	5.46	5.28	0.005414579	0.000	0.000				
Los Angeles	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angeles	2040	LDT2	Aggregatec	65	DSL	3767.19	100.81	97.57	0.003206373	0.001	0.001				
Los Angeles	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angeles	2040	LHDT1	Aggregatec	65	DSL	333048.29	8912.55	8625.58	0.005312212	0.104	0.101				
Los Angeles	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angeles	2040	LHDT2	Aggregatec	65	DSL	170083.04	4551.51	4404.96	0.005548914	0.056	0.054				
Los Angeles	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angeles	2040	MDV	Aggregatec	65	DSL	25939.59	694.16	671.81	0.000810979	0.001	0.001				
Los Angeles	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angeles	2040	MH	Aggregatec	65	DSL	3546.36	94.90	91.85	0.019049327	0.004	0.004				
Los Angeles	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angeles	2040	MHDT	Aggregatec	65	DSL	406327.01	10873.52	10523.42	0.002356509	0.056	0.055				
Los Angeles	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angeles	2040	OBUS	Aggregatec	65	DSL	40072.26	1072.35	1037.83	0.003145968	0.007	0.007				
Los Angeles	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angeles	2040	UBUS	Aggregatec	65	DSL	2618.07	70.06	67.81	0.008638593	0.001	0.001				
						LM Total	7934485.951								
									Total LM Diesel Emissions	0.234	0.226	39	39	2.07E-05	2.03E-05
									Total Diesel Emissions	0.45	0.48	Total Emissions per Volume Source for Modeling		3.95E-05	4.31E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Orange

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
ORA I-5 Northbound	134,257	21,222
ORA I-5 Southbound	147,059	20,241
*ORA I-5 in Orange County, near intersection of SR 57 and SR 22		
Total segment length		
Total Segment Length Northbound	1.32 miles	
Total Segment Length Southbound	0.81 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
														Northbound	Southbound
Orange	2040	HHDT	Aggregatec	55	GAS	2257.31									
Orange	2040	HHDT	Aggregatec	55	DSL	176773.19	20954.18	19986.18	0.004511043	0.21	0.20	26	26	3.19E-05	4.01E-05
						HHDT Total									
						179030.51									
Orange	2040	SBUS	Aggregatec	55	GAS	1129.72									
Orange	2040	SBUS	Aggregatec	55	DSL	1458.16	46.51	50.95	0.002362087	0.000	0.000				
Orange	2040	LDA	Aggregatec	65	GAS	2230959.18									
Orange	2040	LDA	Aggregatec	65	DSL	30932.11	986.69	1080.78	0.000592181	0.001	0.001				
Orange	2040	LDT1	Aggregatec	65	GAS	197767.78									
Orange	2040	LDT1	Aggregatec	65	DSL	109.07	3.48	3.81	0.003645739	0.000	0.000				
Orange	2040	LDT2	Aggregatec	65	GAS	973824.14									
Orange	2040	LDT2	Aggregatec	65	DSL	2140.08	68.27	74.78	0.003112028	0.000	0.001				
Orange	2040	LHDT1	Aggregatec	65	GAS	18088.63									
Orange	2040	LHDT1	Aggregatec	65	DSL	69687.29	2222.91	2434.89	0.005689391	0.028	0.031				
Orange	2040	LHDT2	Aggregatec	65	GAS	7858.38									
Orange	2040	LHDT2	Aggregatec	65	DSL	35192.00	1122.57	1229.62	0.005579285	0.014	0.015				
Orange	2040	MDV	Aggregatec	65	GAS	466835.18									
Orange	2040	MDV	Aggregatec	65	DSL	13123.32	418.61	458.53	0.000770465	0.001	0.001				
Orange	2040	MH	Aggregatec	65	GAS	2227.68									
Orange	2040	MH	Aggregatec	65	DSL	861.58	27.48	30.10	0.027778475	0.002	0.002				
Orange	2040	MHDT	Aggregatec	65	GAS	7648.92									
Orange	2040	MHDT	Aggregatec	65	DSL	138331.51	4412.56	4833.34	0.002357575	0.023	0.025				
Orange	2040	OBUS	Aggregatec	65	GAS	3771.10									
Orange	2040	OBUS	Aggregatec	65	DSL	5834.17	186.10	203.85	0.003107651	0.001	0.001				
Orange	2040	UBUS	Aggregatec	65	GAS	542.98									
Orange	2040	UBUS	Aggregatec	65	DSL	558.15	17.80	19.50	0.005885378	0.000	0.000				
						LM Total	4208881.127		Total LM Diesel Emissions	0.071	0.077	26	26	1.08E-05	1.56E-05
									Total Diesel Emissions	0.28	0.28	Total Emissions per Volume Source for Modeling		4.27E-05	5.57E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Orange

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
ORA I-405 Seal Beach, Corona Northbound	211,720	32,533
ORA I-405 Seal Beach, Corona Southbound	204,150	35,706
*I-405 in Seal Beach, east of the I-605 interchange		
Total Segment Length Northbound	1.09 miles	
Total Segment Length Southbound	1.02 miles	

											Emissions per Volume Source for 1-mile segment Model				
											Northbound	Southbound	Northbound	Southbound	
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Orange	2040	HHDT	Aggregatec	55	GAS	2257.31									
Orange	2040	HHDT	Aggregatec	55	DSL	176773.19	32122.89	35255.38	0.004511043	0.32	0.35	28	28	5.50E-05	6.45E-05
						HHDT Total	179030.51								
Orange	2040	SBUS	Aggregatec	55	GAS	1129.72									
Orange	2040	SBUS	Aggregatec	55	DSL	1458.16	73.35	70.73	0.002362087	0.000	0.000				
Orange	2040	LDA	Aggregatec	65	GAS	2230959.18									
Orange	2040	LDA	Aggregatec	65	DSL	30932.11	1555.98	1500.35	0.000592181	0.002	0.002				
Orange	2040	LDT1	Aggregatec	65	GAS	197767.78									
Orange	2040	LDT1	Aggregatec	65	DSL	109.07	5.49	5.29	0.003645739	0.000	0.000				
Orange	2040	LDT2	Aggregatec	65	GAS	973824.14									
Orange	2040	LDT2	Aggregatec	65	DSL	2140.08	107.65	103.80	0.003112028	0.001	0.001				
Orange	2040	LHDT1	Aggregatec	65	GAS	18088.63									
Orange	2040	LHDT1	Aggregatec	65	DSL	69687.29	3505.48	3380.15	0.005689391	0.044	0.042				
Orange	2040	LHDT2	Aggregatec	65	GAS	7858.38									
Orange	2040	LHDT2	Aggregatec	65	DSL	35192.00	1770.26	1706.97	0.005579285	0.022	0.021				
Orange	2040	MDV	Aggregatec	65	GAS	466835.18									
Orange	2040	MDV	Aggregatec	65	DSL	13123.32	660.14	636.54	0.000770465	0.001	0.001				
Orange	2040	MH	Aggregatec	65	GAS	2227.68									
Orange	2040	MH	Aggregatec	65	DSL	861.58	43.34	41.79	0.027778475	0.003	0.003				
Orange	2040	MHDT	Aggregatec	65	GAS	7648.92									
Orange	2040	MHDT	Aggregatec	65	DSL	138331.51	6958.50	6709.71	0.002357575	0.036	0.035				
Orange	2040	OBUS	Aggregatec	65	GAS	3771.10									
Orange	2040	OBUS	Aggregatec	65	DSL	5834.17	293.48	282.98	0.003107651	0.002	0.002				
Orange	2040	UBUS	Aggregatec	65	GAS	542.98									
Orange	2040	UBUS	Aggregatec	65	DSL	558.15	28.08	27.07	0.005885378	0.000	0.000				
						LM Total	4208881.1	Total LM Diesel Emissions		0.11	0.11	28	28	1.91E-05	1.97E-05
								Total Diesel Emissions		0.43	0.46	Total Emissions per Volume Source for Modeling			
														7.41E-05	8.42E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Riverside

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
RIV I-10 in the Banning area Eastbound	345,401	142,725
RIV I-10 in the Banning area Westbound	439,457	142,301
*RIV I-10 in the Banning area		
Total segment length		
Total Segment Length Eastbound	5.01 miles	
Total Segment Length Westbound	4.98 miles	

														Emissions per Volume Source for 1-mile segment Model					
														Eastbound	Westbound				
														Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec				
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49													
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	142025.48	141603.36	0.004476464	1.40	1.40	45	45	3.26E-05	3.27E-05				
						HHDT Total													
						652957.96													
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58													
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	90.51	115.16	0.00236367	0.000	0.001								
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18													
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	2596.72	3303.84	0.000623643	0.004	0.005								
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94													
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	7.33	9.33	0.003565448	0.000	0.000								
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82													
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	166.12	211.35	0.003153393	0.001	0.001								
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39													
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	6159.40	7836.67	0.006306578	0.086	0.109								
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48													
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	3083.93	3923.72	0.005487154	0.037	0.047								
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26													
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	1070.78	1362.36	0.000795775	0.002	0.002								
Riverside	2040	MH	Aggregatec	65	GAS	4466.36													
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	85.25	108.46	0.036584456	0.007	0.009								
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11													
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	11368.37	14464.09	0.002461834	0.062	0.079								
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87													
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	605.76	770.71	0.002890411	0.004	0.005								
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26													
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	63.34	80.59	0.001999034	0.000	0.000								
						LM Total	6452267.66		Total LM Diesel Emissions	0.20	0.26	45	45	4.72E-06	6.04E-06				
									Total Diesel Emissions	1.60	1.66	Total Emissions per Volume Source for Modeling		3.74E-05	3.88E-05				

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Riverside

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
RIV I-15, Riverside Northbound	357,646	52,487
RIV I-15, Riverside Southbound	393,680	62,533
*RIV I-15, Riverside County, near Temecula		
Total segment length		
Total Segment Length Northbound	4.81 miles	
Total Segment Length Southbound	5.83 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
														Eastbound	Westbound
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49									
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	52229.98	62225.93	0.004476464	0.52	0.61	45	45	1.25E-05	1.23E-05
						HHDT Total									
						652957.96									
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58									
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	93.72	103.16	0.00236367	0.000	0.001				
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18									
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	2688.78	2959.68	0.000623643	0.004	0.004				
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94									
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	7.59	8.36	0.003565448	0.000	0.000				
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82									
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	172.01	189.34	0.003153393	0.001	0.001				
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39									
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	6377.76	7020.33	0.006306578	0.089	0.098				
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48									
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	3193.27	3514.99	0.005487154	0.039	0.043				
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26									
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	1108.74	1220.45	0.000795775	0.002	0.002				
Riverside	2040	MH	Aggregatec	65	GAS	4466.36									
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	88.27	97.16	0.036584456	0.007	0.008				
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11									
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	11771.40	12957.38	0.002461834	0.064	0.070				
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87									
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	627.23	690.43	0.002890411	0.004	0.004				
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26									
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	65.59	72.20	0.001999034	0.000	0.000				
						LM Total	6452267.7								
									Total LM Diesel Emissions	0.21	0.23				
									Total Diesel Emissions	0.73	0.85	45	45	5.09E-06	4.63E-06
												Total Emissions per Volume Source for Modeling		1.76E-05	1.69E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Riverside

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
RIV SR-91 in Corona Eastbound	166,975	30,609
RIV SR-91 in Corona Westbound	332,865	72,033
*SR 91 in Corona, east of the intersection with SR 71		
Total Segment Length Eastbound	2.01 miles	
Total Segment Length Westbound	1.76 miles	

										Emissions per Volume Source for 1-mile segment Model					
										Eastbound	Westbound	Eastbound	Westbound		
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49									
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	30459.13	71679.48	0.004476464	0.30	0.71	35	35	2.24E-05	6.03E-05
						HHDT Total	652957.96								
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58									
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	43.76	87.23	0.00236367	0.000	0.000				
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18									
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	1255.32	2502.48	0.000623643	0.002	0.003				
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94									
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	3.55	7.07	0.003565448	0.000	0.000				
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82									
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	80.30	160.09	0.003153393	0.001	0.001				
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39									
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	2977.61	5935.85	0.006306578	0.041	0.083				
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48									
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	1490.85	2972.01	0.005487154	0.018	0.036				
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26									
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	517.64	1031.92	0.000795775	0.001	0.002				
Riverside	2040	MH	Aggregatec	65	GAS	4466.36									
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	41.21	82.15	0.036584456	0.003	0.007				
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11									
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	5495.75	10955.76	0.002461834	0.030	0.059				
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87									
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	292.84	583.77	0.002890411	0.002	0.004				
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26									
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	30.62	61.04	0.001999034	0.000	0.000				
						LM Total	6452267.66								
								Total LM Diesel Emissions	0.10	0.20	35	35	7.32E-06	1.67E-05	
								Total Diesel Emissions	0.40	0.90	Total Emissions per Volume Source for Modeling				
														2.97E-05	7.69E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
SB I-15 in Ontario Northbound	233,190	76,099
SB I-15 in Ontario Southbound	602,894	126,917
*SB I-15 in Ontario		
Total Segment Length Northbound	2.95 miles	
Total Segment Length Southbound	2.97 miles	

											Emissions per Volume Source for 1-mile segment Model				
		Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99									
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	75836.89	126480.24	0.004549501	0.76	1.27	38	38	3.56E-05	5.90E-05
						HHDT Total	605585.43								
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29									
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	54.50	140.90	0.002367195	0.0003	0.0007				
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35									
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1829.16	4729.15	0.000628079	0.0025	0.0065				
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98									
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	5.00	12.93	0.004148062	0.0000	0.0001				
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18									
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	109.63	283.43	0.003170803	0.0008	0.0020				
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79									
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	3024.83	7820.45	0.006471347	0.0432	0.1116				
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24									
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	1485.37	3840.31	0.005641162	0.0185	0.0478				
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18									
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	714.61	1847.57	0.000818397	0.0013	0.0033				
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92									
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	56.18	145.25	0.035762098	0.0044	0.0115				
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83									
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	5032.63	13011.46	0.002347392	0.0260	0.0673				
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91									
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	178.64	461.86	0.003061533	0.0012	0.0031				
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59									
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	53.86	139.24	0.005096589	0.0006	0.0016				
						LM Total	7755529.37								
								Total LM Diesel Emissions		0.10	0.26	38	38	4.63E-06	1.19E-05
								Total Diesel Emissions		0.86	1.52	Total Emissions per Volume Source for Modeling			
														4.03E-05	7.09E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
SB I-15 in the Victorville area Northbound	127,704	46,847
SB I-15 in the Victorville area Southbound	250,931	74,054
*I-15 in the Victorville area		
Total segment length		
Total Segment Length Northbound	4.32 miles	
Total Segment Length Southbound	4.39 miles	

														Emissions per Volume Source for 1-mile segment Model	
														Northbound	Southbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99									
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	46685.46	73799.05	0.004549501	0.47	0.74	58	58	9.81E-06	1.53E-05
						HHDT Total									
						605585.43									
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29									
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	29.85	58.64	0.002367195	0.000	0.000				
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35									
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1001.72	1968.32	0.000628079	0.001	0.003				
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98									
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	2.74	5.38	0.004148062	0.000	0.000				
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18									
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	60.04	117.97	0.003170803	0.000	0.001				
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79									
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	1656.51	3254.95	0.006471347	0.024	0.046				
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24									
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	813.45	1598.38	0.005641162	0.010	0.020				
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18									
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	391.35	768.98	0.000818397	0.001	0.001				
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92									
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	30.77	60.45	0.035762098	0.002	0.005				
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83									
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	2756.06	5415.51	0.002347392	0.014	0.028				
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91									
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	97.83	192.23	0.003061533	0.001	0.001				
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59									
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	29.49	57.95	0.005096589	0.000	0.001				
						LM Total	7755529.37								
									Total LM Diesel Emissions	0.05	0.11			1.13E-06	2.19E-06
									Total Diesel Emissions	0.52	0.85	Total Emissions per Volume Source		1.09E-05	1.75E-05
												for Modeling			

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
SB SR-60 in Ontario Eastbound	226,731	43,641
SB SR-60 in Ontario Westbound	156,404	34,971
*SR 60 in Ontario, west of the I-15 interchange		
Total Segment Length Eastbound	2.35 miles	
Total Segment Length Westbound	2.22 miles	

													Emissions per Volume Source for 1-mile segment Model		
							Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99									
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	43490.48	34850.99	0.004549501	0.44	0.35	38	38	2.56E-05	2.18E-05
						HHDT Total	605585.43								
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29									
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	52.99	36.55	0.002367195	0.000	0.000				
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35									
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1778.50	1226.85	0.000628079	0.002	0.002				
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98									
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	4.86	3.36	0.004148062	0.000	0.000				
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18									
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	106.59	73.53	0.003170803	0.001	0.001				
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79									
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	2941.05	2028.80	0.006471347	0.042	0.029				
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24									
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	1444.23	996.26	0.005641162	0.018	0.012				
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18									
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	694.82	479.30	0.000818397	0.001	0.001				
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92									
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	54.62	37.68	0.035762098	0.004	0.003				
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83									
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	4893.24	3375.47	0.002347392	0.025	0.017				
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91									
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	173.69	119.82	0.003061533	0.001	0.001				
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59									
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	52.36	36.12	0.005096589	0.001	0.000				
						LM Total	7755529.4	Total LM Diesel Emissions		0.10	0.07	38	38	5.65E-06	4.13E-06
								Total Diesel Emissions		0.53	0.42	Total Emissions per Volume Source for Modeling		3.13E-05	2.59E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Ventura

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
VEN US-101 SB Ventura Freeway Northbound	278,353	45,072
VEN US-101 SB Ventura Freeway Southbound	105,970	16,030
*US-101 Freeway in San Buenaventura near the Ventura Harbor		
Total segment length		
Total Segment Length Northbound	3.21 miles	
Total Segment Length Southbound	3.26 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
														Northbound	Southbound
Ventura	2040	HHDT	Aggregatec	55	GAS	574.78									
Ventura	2040	HHDT	Aggregatec	55	DSL	40656.62	44443.95	15806.89	0.004456099	0.44	0.16	74	74	9.65E-06	3.38E-06
						HHDT Total	41231.40								
Ventura	2040	SBUS	Aggregatec	55	GAS	236.72									
Ventura	2040	SBUS	Aggregatec	55	DSL	216.06	35.16	13.39	0.002368973	0.000	0.000				
Ventura	2040	LDA	Aggregatec	65	GAS	970214.24									
Ventura	2040	LDA	Aggregatec	65	DSL	13436.49	2186.54	832.42	0.000640157	0.003	0.001				
Ventura	2040	LDT1	Aggregatec	65	GAS	71327.90									
Ventura	2040	LDT1	Aggregatec	65	DSL	39.64	6.45	2.46	0.004119509	0.000	0.000				
Ventura	2040	LDT2	Aggregatec	65	GAS	351421.41									
Ventura	2040	LDT2	Aggregatec	65	DSL	772.46	125.70	47.86	0.003097864	0.001	0.000				
Ventura	2040	LHDT1	Aggregatec	65	GAS	8740.89									
Ventura	2040	LHDT1	Aggregatec	65	DSL	35099.94	5711.86	2174.52	0.006651495	0.084	0.032				
Ventura	2040	LHDT2	Aggregatec	65	GAS	3704.61									
Ventura	2040	LHDT2	Aggregatec	65	DSL	17306.58	2816.32	1072.18	0.005632767	0.035	0.013				
Ventura	2040	MDV	Aggregatec	65	GAS	173106.80									
Ventura	2040	MDV	Aggregatec	65	DSL	4862.35	791.26	301.23	0.000733245	0.001	0.000				
Ventura	2040	MH	Aggregatec	65	GAS	1073.74									
Ventura	2040	MH	Aggregatec	65	DSL	426.61	69.42	26.43	0.04421314	0.007	0.003				
Ventura	2040	MHDT	Aggregatec	65	GAS	3429.98									
Ventura	2040	MHDT	Aggregatec	65	DSL	51809.22	8430.98	3209.70	0.002371846	0.044	0.017				
Ventura	2040	OBUS	Aggregatec	65	GAS	1565.61									
Ventura	2040	OBUS	Aggregatec	65	DSL	1256.95	204.55	77.87	0.003032481	0.001	0.001				
Ventura	2040	UBUS	Aggregatec	65	GAS	226.50									
Ventura	2040	UBUS	Aggregatec	65	DSL	230.13	37.45	14.26	0.002390041	0.000	0.000				
						LM Total	1710504.85								
								Total LM Diesel Emissions		0.18	0.07	74	74	3.90E-06	1.46E-06
								Total Diesel Emissions		0.61	0.22	Total Emissions per Volume Source for Modeling		1.36E-05	4.84E-06

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Ventura

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
VEN US-101 in Thousand Oaks Northbound	59,994	10,385
VEN US-101 in Thousand Oaks Southbound	121,575	16,092
*US 101 in Thousand Oaks, east of SR 23		
Total segment length		
Total Segment Length Northbound	0.79 miles	
Total Segment Length Southbound	0.94 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	Emission Factor	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
															Northbound	Southbound
Ventura	2040	HHDT	Aggregatec	55	GAS	574.78										
Ventura	2040	HHDT	Aggregatec	55	DSL	40656.62	10240.22	15868.07	0.004456099	0.10	0.16	36	36	1.47E-05	2.27E-05	
						HHDT Total	41231.40									
Ventura	2040	SBUS	Aggregatec	55	GAS	236.72										
Ventura	2040	SBUS	Aggregatec	55	DSL	216.06	7.58	15.36	0.002368973	0.000	0.000					
Ventura	2040	LDA	Aggregatec	65	GAS	970214.24										
Ventura	2040	LDA	Aggregatec	65	DSL	13436.49	471.27	955.01	0.000640157	0.001	0.001					
Ventura	2040	LDT1	Aggregatec	65	GAS	71327.90										
Ventura	2040	LDT1	Aggregatec	65	DSL	39.64	1.39	2.82	0.004119509	0.000	0.000					
Ventura	2040	LDT2	Aggregatec	65	GAS	351421.41										
Ventura	2040	LDT2	Aggregatec	65	DSL	772.46	27.09	54.90	0.003097864	0.000	0.000					
Ventura	2040	LHDT1	Aggregatec	65	GAS	8740.89										
Ventura	2040	LHDT1	Aggregatec	65	DSL	35099.94	1231.09	2494.76	0.006651495	0.018	0.037					
Ventura	2040	LHDT2	Aggregatec	65	GAS	3704.61										
Ventura	2040	LHDT2	Aggregatec	65	DSL	17306.58	607.01	1230.08	0.005632767	0.008	0.015					
Ventura	2040	MDV	Aggregatec	65	GAS	173106.80										
Ventura	2040	MDV	Aggregatec	65	DSL	4862.35	170.54	345.60	0.000733245	0.000	0.001					
Ventura	2040	MH	Aggregatec	65	GAS	1073.74										
Ventura	2040	MH	Aggregatec	65	DSL	426.61	14.96	30.32	0.04421314	0.001	0.003					
Ventura	2040	MHDT	Aggregatec	65	GAS	3429.98										
Ventura	2040	MHDT	Aggregatec	65	DSL	51809.22	1817.15	3682.38	0.002371846	0.010	0.019					
Ventura	2040	OBUS	Aggregatec	65	GAS	1565.61										
Ventura	2040	OBUS	Aggregatec	65	DSL	1256.95	44.09	89.34	0.003032481	0.000	0.001					
Ventura	2040	UBUS	Aggregatec	65	GAS	226.50										
Ventura	2040	UBUS	Aggregatec	65	DSL	230.13	8.07	16.36	0.002390041	0.000	0.000					
						LM Total	1710504.85									
									Total LM Diesel Emissions	0.04	0.08					
									Total Diesel Emissions	0.14	0.23	36	36	5.55E-06	1.12E-05	
												Total Emissions per Volume Source for Modeling		2.02E-05	3.40E-05	

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Imperial

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
IMP SR-78 Eastbound	13,739	2,337
IMP SR-78 Westbound	8,242	2,492
*IMP SR-78: State Road 78 Freeway in Westmorland		
Total segment length		
Total Segment Length Eastbound	0.88 miles	
Total Segment Length Westbound	0.88 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Emissions per Volume Source for 1-mile segment Model		Emission Factor	DPM Emissions		No. of Vol Sources		g/sec	
							Eastbound	Westbound		Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Imperial	2040	HHDT	Aggregatec	55	GAS	344.61									
Imperial	2040	HHDT	Aggregatec	55	DSL	112537.37	2329.52	2484.77	0.00444601	0.02	0.02	81	81	1.48E-06	1.58E-06
						HHDT Total	112881.97								
Imperial	2040	SBUS	Aggregatec	55	GAS	106.81									
Imperial	2040	SBUS	Aggregatec	55	DSL	133.56	1.54	0.92	0.002371209	0.000	0.000				
Imperial	2040	LDA	Aggregatec	65	GAS	652537.91									
Imperial	2040	LDA	Aggregatec	65	DSL	9049.41	104.30	62.57	0.000607682	0.000	0.000				
Imperial	2040	LDT1	Aggregatec	65	GAS	40817.67									
Imperial	2040	LDT1	Aggregatec	65	DSL	23.04	0.27	0.16	0.004422653	0.000	0.000				
Imperial	2040	LDT2	Aggregatec	65	GAS	231016.98									
Imperial	2040	LDT2	Aggregatec	65	DSL	506.71	5.84	3.50	0.003155957	0.000	0.000				
Imperial	2040	LHDT1	Aggregatec	65	GAS	9623.67									
Imperial	2040	LHDT1	Aggregatec	65	DSL	23096.13	266.20	159.69	0.007196915	0.004	0.003				
Imperial	2040	LHDT2	Aggregatec	65	GAS	3638.16									
Imperial	2040	LHDT2	Aggregatec	65	DSL	11199.01	129.07	77.43	0.005588946	0.002	0.001				
Imperial	2040	MDV	Aggregatec	65	GAS	131010.07									
Imperial	2040	MDV	Aggregatec	65	DSL	3580.16	41.26	24.75	0.000845033	0.000	0.000				
Imperial	2040	MH	Aggregatec	65	GAS	1208.45									
Imperial	2040	MH	Aggregatec	65	DSL	380.40	4.38	2.63	0.02146537	0.000	0.000				
Imperial	2040	MHDT	Aggregatec	65	GAS	8871.92									
Imperial	2040	MHDT	Aggregatec	65	DSL	50973.55	587.50	352.44	0.002559514	0.003	0.002				
Imperial	2040	OBUS	Aggregatec	65	GAS	3105.57									
Imperial	2040	OBUS	Aggregatec	65	DSL	10460.70	120.57	72.33	0.002730687	0.001	0.000				
Imperial	2040	UBUS	Aggregatec	65	GAS	340.65									
Imperial	2040	UBUS	Aggregatec	65	DSL	336.86	3.88	2.33	0.008915933	0.000	0.000				
						LM Total	1192017.37					81	81	6.75E-07	4.05E-07
									Total LM Diesel Emissions	0.01	0.01				
									Total Diesel Emissions	0.03	0.03				
												Total Emissions per Volume Source for Modeling		2.15E-06	1.98E-06

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
LA I-110 Northbound	146,588	24,157
LA I-110 Southbound	144,655	21,464
*LA I-110 in the LA County area, Carson		
Total segment length		
Total Segment Length Northbound	1.98 miles	
Total Segment Length Southbound	1.92 miles	

										Emissions per Volume Source for 1-					
										Northbound	Southbound				
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2040	HHDT	Aggregated	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregated	55	DSL	1353513.34	24001.72	21325.93	0.004705303	0.25	0.22	45	45	1.47E-05	1.30E-05
			HHDT Total			1362297.90									
Los Angele	2040	SBUS	Aggregated	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregated	55	DSL	4974.29	91.90	90.69	0.002363056	0.000	0.000				
Los Angele	2040	LDA	Aggregated	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregated	65	DSL	51247.27	946.78	934.30	0.000638477	0.001	0.001				
Los Angele	2040	LDT1	Aggregated	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregated	65	DSL	203.88	3.77	3.72	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregated	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregated	65	DSL	3767.19	69.60	68.68	0.003206373	0.000	0.000				
Los Angele	2040	LHDT1	Aggregated	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregated	65	DSL	333048.29	6153.00	6071.88	0.005312212	0.072	0.071				
Los Angele	2040	LHDT2	Aggregated	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregated	65	DSL	170083.04	3142.25	3100.82	0.005548914	0.038	0.038				
Los Angele	2040	MDV	Aggregated	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregated	65	DSL	25939.59	479.23	472.91	0.000810979	0.001	0.001				
Los Angele	2040	MH	Aggregated	65	GAS	8959.81									
Los Angele	2040	MH	Aggregated	65	DSL	3546.36	65.52	64.65	0.019049327	0.003	0.003				
Los Angele	2040	MHDT	Aggregated	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregated	65	DSL	406327.01	7506.81	7407.84	0.002356509	0.039	0.038				
Los Angele	2040	OBUS	Aggregated	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregated	65	DSL	40072.26	740.33	730.57	0.003145968	0.005	0.005				
Los Angele	2040	UBUS	Aggregated	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregated	65	DSL	2618.07	48.37	47.73	0.008638593	0.001	0.001				
			LM Total			7934485.95						45	45	9.52E-06	9.68E-06
									Total LM Diesel Emissions	0.16	0.16				
									Total Diesel Emissions	0.41	0.38	Total Emissions per Volume Source for Modeling		2.42E-05	2.27E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
LA I-710 in Compton Northbound	168,817	24,245
LA I-710 in Compton Southbound	162,915	21,235
*LA I-710 in Compton, north of the intersection with SR 91		
Total Segment Length Northbound	1.34 miles	
Total Segment Length Southbound	1.34 miles	

										Emissions per Volume Source for 1-mile segment Model					
										Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	24089.15	21098.24	0.004705303	0.25	0.22	34	34	2.88E-05	2.52E-05
						HHDT Total									
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	105.83	102.13	0.002363056	0.001	0.001				
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	1090.35	1052.23	0.000638477	0.002	0.001				
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	4.34	4.19	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	80.15	77.35	0.003206373	0.001	0.001				
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	7086.04	6838.30	0.005312212	0.083	0.080				
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	3618.74	3492.22	0.005548914	0.044	0.043				
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	551.90	532.60	0.000810979	0.001	0.001				
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	75.45	72.82	0.019049327	0.003	0.003				
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	8645.14	8342.89	0.002356509	0.045	0.043				
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	852.59	822.78	0.003145968	0.006	0.006				
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	55.70	53.76	0.008638593	0.001	0.001				
						LM Total	7934485.95	Total LM Diesel Emissions	0.19	0.18	34	34	2.14E-05	2.07E-05	
								Total Diesel Emissions	0.44	0.40	Total Emissions per Volume Source for Modeling				
														5.02E-05	4.59E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
LA SR-60 DB Eastbound	324,880	38,900
LA SR-60 DB Westbound	365,183	35,510
*LA SR-60 near Diamond Bar		
Total Segment Length Eastbound	3.14 miles	
Total Segment Length Westbound	3.12 miles	

										Emissions per Volume Source for 1-mile segment Model					
		Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	38648.87	35281.12	0.004705303	0.40	0.37	46	46	1.46E-05	1.34E-05
						HHDT Total	1362297.90								
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	203.67	228.94	0.002363056	0.001	0.001				
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	2098.33	2358.65	0.000638477	0.003	0.003				
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	8.35	9.38	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	154.25	173.38	0.003206373	0.001	0.001				
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	13636.75	15328.48	0.005312212	0.160	0.180				
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	6964.09	7828.04	0.005548914	0.085	0.096				
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	1062.10	1193.86	0.000810979	0.002	0.002				
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	145.21	163.22	0.019049327	0.006	0.007				
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	16637.16	18701.12	0.002356509	0.086	0.097				
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	1640.77	1844.32	0.003145968	0.011	0.013				
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	107.20	120.50	0.008638593	0.002	0.002				
						LM Total	7934485.95								
								Total LM Diesel Emissions		0.36	0.40	46	46	1.30E-05	1.47E-05
								Total Diesel Emissions		0.76	0.77	Total Emissions per Volume Source for Modeling		2.76E-05	2.81E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
LA SR-60 SEM, El Monte Eastbound	184,513	14,118
LA SR-60 SEM, El Monte Westbound	198,120	16,318
*LA SR-60 in the El Monte / Peck Rd area		
Total segment length		
Total Segment Length Eastbound	1.52 miles	
Total Segment Length Westbound	1.50 miles	

														Emissions per Volume Source for 1-mile segment Model	
														Northbound	Southbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Northbound Diesel VMT/day	Southbound Diesel VMT/day	Emission Factor PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	14026.95	16212.62	0.004705303	0.15	0.17	39	39	1.29E-05	1.51E-05
						HHDT Total	1362297.90								
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	115.67	124.21	0.002363056	0.001	0.001				
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	1191.73	1279.62	0.000638477	0.002	0.002				
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	4.74	5.09	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	87.60	94.07	0.003206373	0.001	0.001				
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	7744.89	8316.06	0.005312212	0.091	0.097				
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	3955.21	4246.90	0.005548914	0.048	0.052				
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	603.21	647.70	0.000810979	0.001	0.001				
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	82.47	88.55	0.019049327	0.003	0.004				
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	9448.95	10145.80	0.002356509	0.049	0.053				
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	931.86	1000.59	0.003145968	0.006	0.007				
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	60.88		0.008638593	0.001	0.001				
						LM Total	7934485.95			0.20	0.22	39	39	1.80E-05	1.96E-05
										0.35	0.39	Total Emissions per Volume Source for Modeling		3.09E-05	3.47E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Orange

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
ORA I-5 Northbound	197,793	19,225
ORA I-5 Southbound	120,747	12,079
*ORA I-5 in Orange County, near intersection of SR 57 and SR 22		
Total segment length		
Total Segment Length Northbound	1.32 miles	
Total Segment Length Southbound	0.81 miles	

														Emissions per Volume Source for 1-mile segment Model			
							Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound		
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec		
Orange	2040	HHDT	Aggregatec	55	GAS	2257.31											
Orange	2040	HHDT	Aggregatec	55	DSL	176773.19	18982.99	11926.73	0.004511043	0.19	0.12	26	26	2.89E-05	2.40E-05		
						HHDT Total	179030.51										
Orange	2040	SBUS	Aggregatec	55	GAS	1129.72											
Orange	2040	SBUS	Aggregatec	55	DSL	1458.16	68.53	41.83	0.002362087	0.000	0.000						
Orange	2040	LDA	Aggregatec	65	GAS	2230959.18											
Orange	2040	LDA	Aggregatec	65	DSL	30932.11	1453.63	887.40	0.000592181	0.002	0.001						
Orange	2040	LDT1	Aggregatec	65	GAS	197767.78											
Orange	2040	LDT1	Aggregatec	65	DSL	109.07	5.13	3.13	0.003645739	0.000	0.000						
Orange	2040	LDT2	Aggregatec	65	GAS	973824.14											
Orange	2040	LDT2	Aggregatec	65	DSL	2140.08	100.57	61.40	0.003112028	0.001	0.000						
Orange	2040	LHDT1	Aggregatec	65	GAS	18088.63											
Orange	2040	LHDT1	Aggregatec	65	DSL	69687.29	3274.90	1999.22	0.005689391	0.041	0.025						
Orange	2040	LHDT2	Aggregatec	65	GAS	7858.38											
Orange	2040	LHDT2	Aggregatec	65	DSL	35192.00	1653.82	1009.61	0.005579285	0.020	0.012						
Orange	2040	MDV	Aggregatec	65	GAS	466835.18											
Orange	2040	MDV	Aggregatec	65	DSL	13123.32	616.72	376.49	0.000770465	0.001	0.001						
Orange	2040	MH	Aggregatec	65	GAS	2227.68											
Orange	2040	MH	Aggregatec	65	DSL	861.58	40.49	24.72	0.027778475	0.002	0.002						
Orange	2040	MHDT	Aggregatec	65	GAS	7648.92											
Orange	2040	MHDT	Aggregatec	65	DSL	138331.51	6500.78	3968.53	0.002357575	0.034	0.021						
Orange	2040	OBUS	Aggregatec	65	GAS	3771.10											
Orange	2040	OBUS	Aggregatec	65	DSL	5834.17	274.17	167.37	0.003107651	0.002	0.001						
Orange	2040	UBUS	Aggregatec	65	GAS	542.98											
Orange	2040	UBUS	Aggregatec	65	DSL	558.15	26.23	16.01	0.005885378	0.000	0.000						
						LM Total	4208881.13										
									Total LM Diesel Emissions	0.10	0.06	26	26	1.59E-05	1.28E-05		
									Total Diesel Emissions	0.29	0.18	Total Emissions per Volume Source for Modeling					
														4.48E-05	3.68E-05		

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Orange

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
ORA I-405 Seal Beach, Corona Northbound	221,577	33,797
ORA I-405 Seal Beach, Corona Southbound	203,061	31,231
*I-405 in Seal Beach, east of the I-605 interchange		
Total Segment Length Northbound	1.09 miles	
Total Segment Length Southbound	1.02 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	Emission Factor	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
															Northbound	Southbound
Orange	2040	HHDT	Aggregatec	55	GAS	2257.31										
Orange	2040	HHDT	Aggregatec	55	DSL	176773.19	33371.16	30837.62	0.004511043	0.33	0.31	28	28	5.71E-05	5.64E-05	
						HHDT Total	179030.51									
Orange	2040	SBUS	Aggregatec	55	GAS	1129.72										
Orange	2040	SBUS	Aggregatec	55	DSL	1458.16	76.77	70.35	0.002362087	0.000	0.000					
Orange	2040	LDA	Aggregatec	65	GAS	2230959.18										
Orange	2040	LDA	Aggregatec	65	DSL	30932.11	1628.43	1492.34	0.000592181	0.002	0.002					
Orange	2040	LDT1	Aggregatec	65	GAS	197767.78										
Orange	2040	LDT1	Aggregatec	65	DSL	109.07	5.74	5.26	0.003645739	0.000	0.000					
Orange	2040	LDT2	Aggregatec	65	GAS	973824.14										
Orange	2040	LDT2	Aggregatec	65	DSL	2140.08	112.67	103.25	0.003112028	0.001	0.001					
Orange	2040	LHDT1	Aggregatec	65	GAS	18088.63										
Orange	2040	LHDT1	Aggregatec	65	DSL	69687.29	3668.70	3362.11	0.005689391	0.046	0.042					
Orange	2040	LHDT2	Aggregatec	65	GAS	7858.38										
Orange	2040	LHDT2	Aggregatec	65	DSL	35192.00	1852.69	1697.86	0.005579285	0.023	0.021					
Orange	2040	MDV	Aggregatec	65	GAS	466835.18										
Orange	2040	MDV	Aggregatec	65	DSL	13123.32	690.88	633.14	0.000770465	0.001	0.001					
Orange	2040	MH	Aggregatec	65	GAS	2227.68										
Orange	2040	MH	Aggregatec	65	DSL	861.58	45.36	41.57	0.027778475	0.003	0.003					
Orange	2040	MHDT	Aggregatec	65	GAS	7648.92										
Orange	2040	MHDT	Aggregatec	65	DSL	138331.51	7282.49	6673.91	0.002357575	0.038	0.035					
Orange	2040	OBUS	Aggregatec	65	GAS	3771.10										
Orange	2040	OBUS	Aggregatec	65	DSL	5834.17	307.14	281.47	0.003107651	0.002	0.002					
Orange	2040	UBUS	Aggregatec	65	GAS	542.98										
Orange	2040	UBUS	Aggregatec	65	DSL	558.15	29.38	26.93	0.005885378	0.000	0.000					
						LM Total	4208881.13									
									Total LM Diesel Emissions	0.12	0.11	28	28	2.00E-05	1.96E-05	
									Total Diesel Emissions	0.45	0.41	Total Emissions per Volume Source for Modeling		7.71E-05	7.60E-05	

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Riverside

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
RIV I-10 in the Banning area Eastbound	317,387	144,829
RIV I-10 in the Banning area Westbound	372,726	143,184
*RIV I-10 in the Banning area		
Total segment length		
Total Segment Length Eastbound	5.01 miles	
Total Segment Length Westbound	4.98 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	Emission Factor	PM10_RUNEX	DPM Emissions		No. of Vol Sources		Emissions per Volume Source for 1-mile segment Model	
											(lb/day)	(lb/day)	Eastbound	Westbound	Eastbound	Westbound
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49										
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	144118.86	142482.00	0.004476464	1.42	1.41	45	45	3.31E-05	3.29E-05	
						HHDT Total										
						652957.96										
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58										
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	83.17	97.67	0.00236367	0.000	0.001					
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18										
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	2386.11	2802.15	0.000623643	0.003	0.004					
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94										
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	6.74	7.91	0.003565448	0.000	0.000					
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82										
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	152.64	179.26	0.003153393	0.001	0.001					
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39										
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	5659.84	6646.67	0.006306578	0.079	0.092					
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48										
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	2833.81	3327.90	0.005487154	0.034	0.040					
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26										
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	983.93	1155.49	0.000795775	0.002	0.002					
Riverside	2040	MH	Aggregatec	65	GAS	4466.36										
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	78.33	91.99	0.036584456	0.006	0.007					
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11										
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	10446.32	12267.71	0.002461834	0.057	0.067					
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87										
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	556.63	653.68	0.002890411	0.004	0.004					
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26										
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	58.21	68.35	0.001999034	0.000	0.000					
						LM Total	6452267.66									
									Total LM Diesel Emissions	0.19	0.22	45	45	4.34E-06	5.13E-06	
									Total Diesel Emissions	1.61	1.62	Total Emissions per Volume Source for Modeling		3.75E-05	3.81E-05	

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Riverside

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
RIV I-15, Riverside Northbound	469,031	75,978
RIV I-15, Riverside Southbound	555,310	91,002
*RIV I-15, Riverside County, near Temecula		
Total segment length		
Total Segment Length Northbound	4.81 miles	
Total Segment Length Southbound	5.83 miles	

Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	Emission Factor	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
															Eastbound	Westbound
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49										
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	75605.33	90555.32	0.004476464	0.75	0.89	45	45	1.81E-05	1.79E-05	
						HHDT Total										
						652957.96										
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58										
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	122.91	145.52	0.00236367	0.001	0.001					
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18										
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	3526.17	4174.81	0.000623643	0.005	0.006					
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94										
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	9.96	11.79	0.003565448	0.000	0.000					
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82										
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	225.58	267.07	0.003153393	0.002	0.002					
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39										
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	8364.05	9902.62	0.006306578	0.116	0.138					
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48										
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	4187.77	4958.12	0.005487154	0.051	0.060					
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26										
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	1454.05	1721.52	0.000795775	0.003	0.003					
Riverside	2040	MH	Aggregatec	65	GAS	4466.36										
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	115.76	137.06	0.036584456	0.009	0.011					
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11										
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	15437.47	18277.20	0.002461834	0.084	0.099					
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87										
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	822.58	973.89	0.002890411	0.005	0.006					
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26										
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	86.01	101.84	0.001999034	0.000	0.000					
						LM Total	6452267.66									
									Total LM Diesel Emissions	0.28	0.33	45	45	6.68E-06	6.52E-06	
									Total Diesel Emissions	1.02	1.22	Total Emissions per Volume Source for Modeling		2.48E-05	2.44E-05	

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Riverside

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
RIV SR-91 in Corona Eastbound	279,241	42,928
RIV SR-91 in Corona Westbound	261,128	45,127
*SR 91 in Corona, east of the intersection with SR 71		
Total Segment Length Eastbound	2.01 miles	
Total Segment Length Westbound	1.76 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
														Eastbound	Westbound
Riverside	2040	HHDT	Aggregate	55	GAS	3201.49									
Riverside	2040	HHDT	Aggregate	55	DSL	649756.47	42717.23	44906.14	0.004476464	0.42	0.44	35	35	3.15E-05	3.78E-05
						HHDT Total									
						652957.96									
Riverside	2040	SBUS	Aggregate	55	GAS	776.58									
Riverside	2040	SBUS	Aggregate	55	DSL	1690.78	73.17	68.43	0.00236367	0.000	0.000				
Riverside	2040	LDA	Aggregate	65	GAS	3501914.18									
Riverside	2040	LDA	Aggregate	65	DSL	48508.09	2099.33	1963.16	0.000623643	0.003	0.003				
Riverside	2040	LDT1	Aggregate	65	GAS	248324.94									
Riverside	2040	LDT1	Aggregate	65	DSL	137.00	5.93	5.54	0.003565448	0.000	0.000				
Riverside	2040	LDT2	Aggregate	65	GAS	1414362.82									
Riverside	2040	LDT2	Aggregate	65	DSL	3103.14	134.30	125.59	0.003153393	0.001	0.001				
Riverside	2040	LHDT1	Aggregate	65	GAS	39326.39									
Riverside	2040	LHDT1	Aggregate	65	DSL	115060.74	4979.59	4656.60	0.006306578	0.069	0.065				
Riverside	2040	LHDT2	Aggregate	65	GAS	14891.48									
Riverside	2040	LHDT2	Aggregate	65	DSL	57609.46	2493.22	2331.50	0.005487154	0.030	0.028				
Riverside	2040	MDV	Aggregate	65	GAS	719958.26									
Riverside	2040	MDV	Aggregate	65	DSL	20002.70	865.68	809.53	0.000795775	0.002	0.001				
Riverside	2040	MH	Aggregate	65	GAS	4466.36									
Riverside	2040	MH	Aggregate	65	DSL	1592.49	68.92	64.45	0.036584456	0.006	0.005				
Riverside	2040	MHDT	Aggregate	65	GAS	24915.11									
Riverside	2040	MHDT	Aggregate	65	DSL	212366.83	9190.80	8594.66	0.002461834	0.050	0.047				
Riverside	2040	OBUS	Aggregate	65	GAS	9566.87									
Riverside	2040	OBUS	Aggregate	65	DSL	11315.88	489.73	457.96	0.002890411	0.003	0.003				
Riverside	2040	UBUS	Aggregate	65	GAS	1194.26									
Riverside	2040	UBUS	Aggregate	65	DSL	1183.27	51.21	47.89	0.001999034	0.000	0.000				
						LM Total	6452267.66		Total LM Diesel Emissions	0.16	0.15	35	35	1.22E-05	1.31E-05
									Total Diesel Emissions	0.59	0.60	Total Emissions per Volume Source for Modeling		4.37E-05	5.08E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
SB I-15 in Ontario Northbound	244,700	56,894
SB I-15 in Ontario Southbound	227,670	58,753
*SB I-15 in Ontario		
Total Segment Length Northbound	2.95 miles	
Total Segment Length Southbound	2.97 miles	

													Emissions per Volume Source for 1-mile segment Model			
													Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec	
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99										
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	56698.73	58551.02	0.004549501	0.57	0.59	38	38	2.66E-05	2.73E-05	
						HHDT Total										
						605585.43										
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29										
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	57.19	53.21	0.002367195	0.000	0.000					
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35										
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1919.45	1785.87	0.000628079	0.003	0.002					
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98										
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	5.25	4.88	0.004148062	0.000	0.000					
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18										
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	115.04	107.03	0.003170803	0.001	0.001					
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79										
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	3174.13	2953.23	0.006471347	0.045	0.042					
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24										
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	1558.69	1450.21	0.005641162	0.019	0.018					
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18										
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	749.88	697.70	0.000818397	0.001	0.001					
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92										
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	58.95	54.85	0.035762098	0.005	0.004					
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83										
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	5281.03	4913.50	0.002347392	0.027	0.025					
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91										
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	187.46	174.41	0.003061533	0.001	0.001					
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59										
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	56.51	52.58	0.005096589	0.001	0.001					
						LM Total	7755529.37									
								Total LM Diesel Emissions		0.10	0.10	38	38	4.86E-06	4.49E-06	
								Total Diesel Emissions		0.67	0.68	Total Emissions per Volume Source		3.15E-05	3.18E-05	
												for Modeling				

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
SB I-15 in the Victorville area Northbound	191,852	85,830
SB I-15 in the Victorville area Southbound	178,052	88,524
*I-15 in the Victorville area		
Total segment length		
Total Segment Length Northbound	4.32 miles	
Total Segment Length Southbound	4.39 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	Emission Factor	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
															Eastbound	Westbound
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99										
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	85534.46	88219.93	0.004549501	0.86	0.88	58	58	1.80E-05	1.82E-05	
						HHDT Total										
						605585.43										
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29										
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	44.84	41.61	0.002367195	0.000	0.000					
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35										
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1504.90	1396.66	0.000628079	0.002	0.002					
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98										
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	4.12	3.82	0.004148062	0.000	0.000					
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18										
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	90.19	83.70	0.003170803	0.001	0.001					
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79										
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	2488.61	2309.61	0.006471347	0.036	0.033					
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24										
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	1222.06	1134.16	0.005641162	0.015	0.014					
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18										
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	587.93	545.64	0.000818397	0.001	0.001					
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92										
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	46.22	42.90	0.035762098	0.004	0.003					
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83										
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	4140.48	3842.66	0.002347392	0.021	0.020					
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91										
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	146.97	136.40	0.003061533	0.001	0.001					
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59										
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	44.31	41.12	0.005096589	0.000	0.000					
						LM Total	7755529.37									
									Total LM Diesel Emissions	0.08	0.08	58	58	1.70E-06	1.56E-06	
									Total Diesel Emissions	0.94	0.96	Total Emissions per Volume Source for Modeling		1.97E-05	1.98E-05	

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
SB SR-60 in Ontario Eastbound	243,107	33,829
SB SR-60 in Ontario Westbound	236,083	30,221
*SR 60 in Ontario, west of the I-15 interchange		
Total Segment Length Eastbound	2.35 miles	
Total Segment Length Westbound	2.22 miles	

Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Emission Factor		DPM Emissions		No. of Vol Sources		Emissions per Volume Source for 1-mile segment Model		
							Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99									
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	33712.84	30117.11	0.004549501	0.34	0.30	38	38	1.99E-05	1.88E-05
			HHDT Total			605585.43									
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29									
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	56.82	55.17	0.002367195	0.000	0.000				
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35									
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1906.96	1851.86	0.000628079	0.003	0.003				
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98									
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	5.21	5.06	0.004148062	0.000	0.000				
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18									
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	114.29	110.99	0.003170803	0.001	0.001				
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79									
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	3153.47	3062.36	0.006471347	0.045	0.044				
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24									
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	1548.54	1503.80	0.005641162	0.019	0.019				
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18									
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	745.00	723.48	0.000818397	0.001	0.001				
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92									
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	58.57	56.88	0.035762098	0.005	0.004				
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83									
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	5246.66	5095.06	0.002347392	0.027	0.026				
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91									
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	186.24	180.86	0.003061533	0.001	0.001				
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59									
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	56.15	54.52	0.005096589	0.001	0.001				
			LM Total			7755529.37			Total LM Diesel Emissions	0.10	0.10	38	38	6.06E-06	6.23E-06
									Total Diesel Emissions	0.44	0.40	Total Emissions per Volume Source for Modeling		2.59E-05	2.50E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Ventura

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
VEN US-101 SB Ventura Freeway Northbound	163,426	29,060
VEN US-101 SB Ventura Freeway Southbound	163,698	30,050
*US-101 Freeway in San Buenaventura near the Ventura Harbor		
Total segment length		
Total Segment Length Northbound	3.21 miles	
Total Segment Length Southbound	3.26 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
														Northbound	Southbound
Ventura	2040	HHDT	Aggregatec	55	GAS	574.78									
Ventura	2040	HHDT	Aggregatec	55	DSL	40656.62	28654.62	29631.55	0.004456099	0.28	0.29	74	74	6.22E-06	6.34E-06
						HHDT Total	41231.40								
Ventura	2040	SBUS	Aggregatec	55	GAS	236.72									
Ventura	2040	SBUS	Aggregatec	55	DSL	216.06	20.64	20.68	0.002368973	0.000	0.000				
Ventura	2040	LDA	Aggregatec	65	GAS	970214.24									
Ventura	2040	LDA	Aggregatec	65	DSL	13436.49	1283.75	1285.89	0.000640157	0.002	0.002				
Ventura	2040	LDT1	Aggregatec	65	GAS	71327.90									
Ventura	2040	LDT1	Aggregatec	65	DSL	39.64	3.79	3.79	0.004119509	0.000	0.000				
Ventura	2040	LDT2	Aggregatec	65	GAS	351421.41									
Ventura	2040	LDT2	Aggregatec	65	DSL	772.46	73.80	73.93	0.003097864	0.001	0.001				
Ventura	2040	LHDT1	Aggregatec	65	GAS	8740.89									
Ventura	2040	LHDT1	Aggregatec	65	DSL	35099.94	3353.53	3359.11	0.006651495	0.049	0.049				
Ventura	2040	LHDT2	Aggregatec	65	GAS	3704.61									
Ventura	2040	LHDT2	Aggregatec	65	DSL	17306.58	1653.51	1656.26	0.005632767	0.021	0.021				
Ventura	2040	MDV	Aggregatec	65	GAS	173106.80									
Ventura	2040	MDV	Aggregatec	65	DSL	4862.35	464.56	465.33	0.000733245	0.001	0.001				
Ventura	2040	MH	Aggregatec	65	GAS	1073.74									
Ventura	2040	MH	Aggregatec	65	DSL	426.61	40.76	40.83	0.04421314	0.004	0.004				
Ventura	2040	MHDT	Aggregatec	65	GAS	3429.98									
Ventura	2040	MHDT	Aggregatec	65	DSL	51809.22	4949.97	4958.22	0.002371846	0.026	0.026				
Ventura	2040	OBUS	Aggregatec	65	GAS	1565.61									
Ventura	2040	OBUS	Aggregatec	65	DSL	1256.95	120.09	120.29	0.003032481	0.001	0.001				
Ventura	2040	UBUS	Aggregatec	65	GAS	226.50									
Ventura	2040	UBUS	Aggregatec	65	DSL	230.13	21.99	22.02	0.002390041	0.000	0.000				
						LM Total	1710504.85		Total LM Diesel Emissions	0.10	0.10	74	74	2.29E-06	2.26E-06
									Total Diesel Emissions	0.39	0.39	Total Emissions per Volume Source for Modeling		8.51E-06	8.60E-06

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Ventura

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment

VEN US-101 in Thousand Oaks Northbound

VEN US-101 in Thousand Oaks Southbound

*US 101 in Thousand Oaks, east of SR 23

Total segment length

Total Segment Length Northbound

Total Segment Length Southbound

LM VMT/day

67,736

81,120

HD VMT/day

10,476

12,661

0.79 miles

0.94 miles

										Emissions per Volume Source for 1-mile segment Model					
										Northbound	Southbound	Northbound	Southbound		
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Ventura	2040	HHDT	Aggregatec	55	GAS	574.78									
Ventura	2040	HHDT	Aggregatec	55	DSL	40656.62	10330.18	12484.63	0.004456099	0.10	0.12	36	36	1.48E-05	1.79E-05
						HHDT Total									
Ventura	2040	SBUS	Aggregatec	55	GAS	236.72									
Ventura	2040	SBUS	Aggregatec	55	DSL	216.06	8.56	10.25	0.002368973	0.000	0.000				
Ventura	2040	LDA	Aggregatec	65	GAS	970214.24									
Ventura	2040	LDA	Aggregatec	65	DSL	13436.49	532.08	637.22	0.000640157	0.001	0.001				
Ventura	2040	LDT1	Aggregatec	65	GAS	71327.90									
Ventura	2040	LDT1	Aggregatec	65	DSL	39.64	1.57	1.88	0.004119509	0.000	0.000				
Ventura	2040	LDT2	Aggregatec	65	GAS	351421.41									
Ventura	2040	LDT2	Aggregatec	65	DSL	772.46	30.59	36.63	0.003097864	0.000	0.000				
Ventura	2040	LHDT1	Aggregatec	65	GAS	8740.89									
Ventura	2040	LHDT1	Aggregatec	65	DSL	35099.94	1389.96	1664.59	0.006651495	0.020	0.024				
Ventura	2040	LHDT2	Aggregatec	65	GAS	3704.61									
Ventura	2040	LHDT2	Aggregatec	65	DSL	17306.58	685.34	820.75	0.005632767	0.009	0.010				
Ventura	2040	MDV	Aggregatec	65	GAS	173106.80									
Ventura	2040	MDV	Aggregatec	65	DSL	4862.35	192.55	230.59	0.000733245	0.000	0.000				
Ventura	2040	MH	Aggregatec	65	GAS	1073.74									
Ventura	2040	MH	Aggregatec	65	DSL	426.61	16.89	20.23	0.04421314	0.002	0.002				
Ventura	2040	MHDT	Aggregatec	65	GAS	3429.98									
Ventura	2040	MHDT	Aggregatec	65	DSL	51809.22	2051.64	2457.02	0.002371846	0.011	0.013				
Ventura	2040	OBUS	Aggregatec	65	GAS	1565.61									
Ventura	2040	OBUS	Aggregatec	65	DSL	1256.95	49.78	59.61	0.003032481	0.000	0.000				
Ventura	2040	UBUS	Aggregatec	65	GAS	226.50									
Ventura	2040	UBUS	Aggregatec	65	DSL	230.13	9.11	10.91	0.002390041	0.000	0.000				
						LM Total	1710504.85					36	36	6.27E-06	7.51E-06
										Total LM Diesel Emissions	0.04	0.05			
										Total Diesel Emissions	0.14	0.17			
												Total Emissions per Volume Source for Modeling		2.11E-05	2.54E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Imperial

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
IMP I-8 just east of El Centro Eastbound	25,684	11,364
IMP I-8 just east of El Centro Westbound	26,567	11,519
*IMP I-8 just east of El Centro		
Total Segment Length Eastbound	1.51 miles	
Total Segment Length Westbound	1.51 miles	

														Emissions per Volume Source for 1-mile segment Model			
														Eastbound	Westbound	Eastbound	Westbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec		
Imperial	2040	HHDT	Aggregatec	55	GAS	344.61											
Imperial	2040	HHDT	Aggregatec	55	DSL	112537.37	11329.68	11483.86	0.00444601	0.11	0.11	74	74	5.22E-06	5.29E-06		
						HHDT Total											
Imperial	2040	SBUS	Aggregatec	55	GAS	106.81											
Imperial	2040	SBUS	Aggregatec	55	DSL	133.56	2.88	2.98	0.002371209	0.000	0.000						
Imperial	2040	LDA	Aggregatec	65	GAS	652537.91											
Imperial	2040	LDA	Aggregatec	65	DSL	9049.41	194.98	201.69	0.000607682	0.000	0.000						
Imperial	2040	LDT1	Aggregatec	65	GAS	40817.67											
Imperial	2040	LDT1	Aggregatec	65	DSL	23.04	0.50	0.51	0.004422653	0.000	0.000						
Imperial	2040	LDT2	Aggregatec	65	GAS	231016.98											
Imperial	2040	LDT2	Aggregatec	65	DSL	506.71	10.92	11.29	0.003155957	0.000	0.000						
Imperial	2040	LHDT1	Aggregatec	65	GAS	9623.67											
Imperial	2040	LHDT1	Aggregatec	65	DSL	23096.13	497.64	514.75	0.007196915	0.008	0.008						
Imperial	2040	LHDT2	Aggregatec	65	GAS	3638.16											
Imperial	2040	LHDT2	Aggregatec	65	DSL	11199.01	241.30	249.59	0.005588946	0.003	0.003						
Imperial	2040	MDV	Aggregatec	65	GAS	131010.07											
Imperial	2040	MDV	Aggregatec	65	DSL	3580.16	77.14	79.79	0.000845033	0.000	0.000						
Imperial	2040	MH	Aggregatec	65	GAS	1208.45											
Imperial	2040	MH	Aggregatec	65	DSL	380.40	8.20	8.48	0.02146537	0.000	0.000						
Imperial	2040	MHDT	Aggregatec	65	GAS	8871.92											
Imperial	2040	MHDT	Aggregatec	65	DSL	50973.55	1098.29	1136.05	0.002559514	0.006	0.006						
Imperial	2040	OBUS	Aggregatec	65	GAS	3105.57											
Imperial	2040	OBUS	Aggregatec	65	DSL	10460.70	225.39	233.14	0.002730687	0.001	0.001						
Imperial	2040	UBUS	Aggregatec	65	GAS	340.65											
Imperial	2040	UBUS	Aggregatec	65	DSL	336.86	7.26	7.51	0.008915933	0.000	0.000						
						LM Total	1192017.37										
									Total LM Diesel Emissions	0.02	0.02	74	74	9.14E-07	9.45E-07		
									Total Diesel Emissions	0.13	0.13	Total Emissions per Volume Source for Modeling					
														6.13E-06	6.23E-06		

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Imperial

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMB and PMTW

Original Segment	LM VMT/day	HD VMT/day
IMP SR-78 Eastbound	13,729	2,263
IMP SR-78 Westbound	8,221	2,418
*IMP SR-78: State Road 78 Freeway in Westmorland		
Total segment length		
Total Segment Length Eastbound	0.88 miles	
Total Segment Length Westbound	0.88 miles	

														Emissions per Volume Source for 1-mile segment Model	
														Eastbound	Westbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Eastbound Diesel VMT/day	Westbound Diesel VMT/day	Emission Factor PM10_RUNEX	Eastbound DPM Emissions (lb/day)	Westbound DPM Emissions (lb/day)	Eastbound No. of Vol Sources	Westbound No. of Vol Sources	Eastbound g/sec	Westbound g/sec
Imperial	2040	HHDT	Aggregatec	55	GAS	344.61									
Imperial	2040	HHDT	Aggregatec	55	DSL	112537.91	2256.25	2410.12	0.00444601	0.02	0.02	81	81	1.43E-06	1.53E-06
						HHDT Total									
						112881.97									
Imperial	2040	SBUS	Aggregatec	55	GAS	106.81									
Imperial	2040	SBUS	Aggregatec	55	DSL	133.56	1.54	0.92	0.002371209	0.000	0.000				
Imperial	2040	LDA	Aggregatec	65	GAS	652537.91									
Imperial	2040	LDA	Aggregatec	65	DSL	9049.41	104.23	62.41	0.000607682	0.000	0.000				
Imperial	2040	LDT1	Aggregatec	65	GAS	40817.67									
Imperial	2040	LDT1	Aggregatec	65	DSL	23.04	0.27	0.16	0.004422653	0.000	0.000				
Imperial	2040	LDT2	Aggregatec	65	GAS	231016.98									
Imperial	2040	LDT2	Aggregatec	65	DSL	506.71	5.84	3.49	0.003155957	0.000	0.000				
Imperial	2040	LHDT1	Aggregatec	65	GAS	9623.67									
Imperial	2040	LHDT1	Aggregatec	65	DSL	23096.13	266.01	159.29	0.007196915	0.004	0.003				
Imperial	2040	LHDT2	Aggregatec	65	GAS	3638.16									
Imperial	2040	LHDT2	Aggregatec	65	DSL	11199.01	128.99	77.24	0.005588946	0.002	0.001				
Imperial	2040	MDV	Aggregatec	65	GAS	131010.07									
Imperial	2040	MDV	Aggregatec	65	DSL	3580.16	41.24	24.69	0.000845033	0.000	0.000				
Imperial	2040	MH	Aggregatec	65	GAS	1208.45									
Imperial	2040	MH	Aggregatec	65	DSL	380.40	4.38	2.62	0.02146537	0.000	0.000				
Imperial	2040	MHDT	Aggregatec	65	GAS	8871.92									
Imperial	2040	MHDT	Aggregatec	65	DSL	50973.55	587.10	351.56	0.002559514	0.003	0.002				
Imperial	2040	OBUS	Aggregatec	65	GAS	3105.57									
Imperial	2040	OBUS	Aggregatec	65	DSL	10460.70	120.48	72.15	0.002730687	0.001	0.000				
Imperial	2040	UBUS	Aggregatec	65	GAS	340.65									
Imperial	2040	UBUS	Aggregatec	65	DSL	336.86	3.88	2.32	0.008915933	0.000	0.000				
						LM Total									
						1192017.37									
									Total LM Diesel Emissions	0.010	0.006				
									Total Diesel Emissions	0.03	0.03				
												81	81	6.74E-07	4.04E-07
												Total Emissions per Volume Source for Modeling		2.11E-06	1.93E-06

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
LA I-110 Northbound	138,972	23,539
LA I-110 Southbound	138,737	20,874
*LA I-110 in the LA County area, Carson		
Total segment length		
Total Segment Length Northbound	1.98 miles	
Total Segment Length Southbound	1.92 miles	

										Emissions per Volume Source for 1-mile segment Model					
										Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	23387.00	20739.59	0.004705303	0.24	0.22	45	45	1.43E-05	1.31E-05
						HHDT Total									
						1362297.90									
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	87.12	86.98	0.002363056	0.000	0.000				
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	897.59	896.07	0.000638477	0.001	0.001				
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	3.57	3.56	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	65.98	65.87	0.003206373	0.000	0.000				
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	5833.33	5823.46	0.005312212	0.068	0.068				
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	2979.00	2973.96	0.005548914	0.036	0.036				
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	454.33	453.56	0.000810979	0.001	0.001				
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	62.11	62.01	0.019049327	0.003	0.003				
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	7116.81	7104.76	0.002356509	0.037	0.037				
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	701.86	700.68	0.003145968	0.005	0.005				
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	45.86	45.78	0.008638593	0.001	0.001				
						LM Total	7934485.95								
									Total LM Diesel Emissions	0.15	0.15	45	45	9.02E-06	9.29E-06
									Total Diesel Emissions	0.40	0.37	Total Emissions per Volume Source for Modeling		2.33E-05	2.24E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
LA I-710 in Compton Northbound	165,574	24,677
LA I-710 in Compton Southbound	158,749	21,609
*LA I-710 in Compton, north of the intersection with SR 91		
Total Segment Length Northbound	1.34 miles	
Total Segment Length Southbound	1.34 miles	

Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Emissions per Volume Source for 1-mile segment Model			Emissions per Volume Source for 1-mile segment Model					
							Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound		
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	24518.18	21469.48	0.004705303	0.25	0.22	34	34	2.93E-05	2.57E-05
						HHDT Total									
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	103.80	99.52	0.002363056	0.001	0.001				
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	1069.41	1025.33	0.000638477	0.002	0.001				
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	4.25	4.08	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	78.61	75.37	0.003206373	0.001	0.001				
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	6949.93	6663.46	0.005312212	0.081	0.078				
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	3549.23	3402.94	0.005548914	0.043	0.042				
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	541.30	518.99	0.000810979	0.001	0.001				
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	74.00	70.95	0.019049327	0.003	0.003				
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	8479.08	8129.59	0.002356509	0.044	0.042				
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	836.21	801.75	0.003145968	0.006	0.006				
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	54.63	52.38	0.008638593	0.001	0.001				
						LM Total	7934485.95								
									Total LM Diesel Emissions	0.18	0.17	34	34	2.10E-05	2.02E-05
									Total Diesel Emissions	0.44	0.40	Total Emissions per Volume Source for Modeling		5.03E-05	4.58E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
LA SR-60 DB Eastbound	322,875	39,502
LA SR-60 DB Westbound	361,180	36,844
*LA SR-60 near Diamond Bar		
Total Segment Length Eastbound	3.14 miles	
Total Segment Length Westbound	3.12 miles	

										Emissions per Volume Source for 1-mile segment Model					
		Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound			
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele:	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele:	2040	HHDT	Aggregatec	55	DSL	1353513.34	39247.41	36606.89	0.004705303	0.41	0.38	46	46	1.48E-05	1.39E-05
						HHDT Total									
Los Angele:	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele:	2040	SBUS	Aggregatec	55	DSL	4974.29	202.42	226.43	0.002363056	0.001	0.001				
Los Angele:	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele:	2040	LDA	Aggregatec	65	DSL	51247.27	2085.39	2332.79	0.000638477	0.003	0.003				
Los Angele:	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele:	2040	LDT1	Aggregatec	65	DSL	203.88	8.30	9.28	0.005414579	0.000	0.000				
Los Angele:	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele:	2040	LDT2	Aggregatec	65	DSL	3767.19	153.30	171.48	0.003206373	0.001	0.001				
Los Angele:	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele:	2040	LHDT1	Aggregatec	65	DSL	333048.29	13552.62	15160.45	0.005312212	0.159	0.178				
Los Angele:	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele:	2040	LHDT2	Aggregatec	65	DSL	170083.04	6921.13	7742.23	0.005548914	0.085	0.095				
Los Angele:	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele:	2040	MDV	Aggregatec	65	DSL	25939.59	1055.55	1180.78	0.000810979	0.002	0.002				
Los Angele:	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele:	2040	MH	Aggregatec	65	DSL	3546.36	144.31	161.43	0.019049327	0.006	0.007				
Los Angele:	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele:	2040	MHDT	Aggregatec	65	DSL	406327.01	16534.53	18496.11	0.002356509	0.086	0.096				
Los Angele:	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele:	2040	OBUS	Aggregatec	65	DSL	40072.26	1630.65	1824.10	0.003145968	0.011	0.013				
Los Angele:	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele:	2040	UBUS	Aggregatec	65	DSL	2618.07	106.54	119.18	0.008638593	0.002	0.002				
						LM Total	7934485.95								
										Total LM Diesel Emissions	0.36	0.40			
										Total Diesel Emissions	0.76	0.78			
												46	46	1.29E-05	1.46E-05
												Total Emissions per Volume Source for Modeling		2.77E-05	2.84E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
LA SR-60 SEM, El Monte Eastbound	182,089	14,039
LA SR-60 SEM, El Monte Westbound	196,074	16,103
*LA SR-60 in the El Monte / Peck Rd area		
Total segment length		
Total Segment Length Eastbound	1.52 miles	
Total Segment Length Westbound	1.50 miles	

														Emissions per Volume Source for 1-mile segment Model	
		Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	g/sec	g/sec	
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	13948.19	15998.74	0.004705303	0.14	0.17	39	39	1.28E-05	1.49E-05
						HHDT Total	1362297.90								
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	114.16	122.92	0.002363056	0.001	0.001				
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	1176.08	1266.40	0.000638477	0.002	0.002				
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	4.68	5.04	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	86.45	93.09	0.003206373	0.001	0.001				
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	7643.14	8230.15	0.005312212	0.090	0.096				
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	3903.25	4203.02	0.005548914	0.048	0.051				
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	595.29	641.01	0.000810979	0.001	0.001				
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	81.39	87.64	0.019049327	0.003	0.004				
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	9324.82	10040.98	0.002356509	0.048	0.052				
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	919.62	990.25	0.003145968	0.006	0.007				
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	60.08	64.70	0.008638593	0.001	0.001				
						LM Total	7934485.95	Total LM Diesel Emissions	0.20	0.22	39	39	1.78E-05	1.94E-05	
								Total Diesel Emissions	0.35	0.38	Total Emissions per Volume		3.06E-05	3.43E-05	
														Source for Modeling	

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Orange

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
ORA I-5 Northbound	197,857	19,018
ORA I-5 Southbound	120,743	12,045
*ORA I-5 in Orange County, near intersection of SR 57 and SR 22		
Total segment length		
Total Segment Length Northbound	1.32 miles	
Total Segment Length Southbound	0.81 miles	

														Emissions per Volume Source for 1-mile segment Model					
														Northbound	Southbound				
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound				
														DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Orange	2040	HHDT	Aggregatec	55	GAS	2257.31													
Orange	2040	HHDT	Aggregatec	55	DSL	176773.19	18777.75	11893.16	0.004511043	0.19	0.12	26	26	2.86E-05	2.39E-05				
						HHDT Total													
Orange	2040	SBUS	Aggregatec	55	GAS	1129.72													
Orange	2040	SBUS	Aggregatec	55	DSL	1458.16	68.55	41.83	0.002362087	0.000	0.000								
Orange	2040	LDA	Aggregatec	65	GAS	2230959.18													
Orange	2040	LDA	Aggregatec	65	DSL	30932.11	1454.10	887.37	0.000592181	0.002	0.001								
Orange	2040	LDT1	Aggregatec	65	GAS	197767.78													
Orange	2040	LDT1	Aggregatec	65	DSL	109.07	5.13	3.13	0.003645739	0.000	0.000								
Orange	2040	LDT2	Aggregatec	65	GAS	973824.14													
Orange	2040	LDT2	Aggregatec	65	DSL	2140.08	100.60	61.39	0.003112028	0.001	0.000								
Orange	2040	LHDT1	Aggregatec	65	GAS	18088.63													
Orange	2040	LHDT1	Aggregatec	65	DSL	69687.29	3275.95	1999.17	0.005689391	0.041	0.025								
Orange	2040	LHDT2	Aggregatec	65	GAS	7858.38													
Orange	2040	LHDT2	Aggregatec	65	DSL	35192.00	1654.35	1009.58	0.005579285	0.020	0.012								
Orange	2040	MDV	Aggregatec	65	GAS	466835.18													
Orange	2040	MDV	Aggregatec	65	DSL	13123.32	616.92	376.48	0.000770465	0.001	0.001								
Orange	2040	MH	Aggregatec	65	GAS	2227.68													
Orange	2040	MH	Aggregatec	65	DSL	861.58	40.50	24.72	0.027778475	0.002	0.002								
Orange	2040	MHDT	Aggregatec	65	GAS	7648.92													
Orange	2040	MHDT	Aggregatec	65	DSL	138331.51	6502.88	3968.42	0.002357575	0.034	0.021								
Orange	2040	OBUS	Aggregatec	65	GAS	3771.10													
Orange	2040	OBUS	Aggregatec	65	DSL	5834.17	274.26	167.37	0.003107651	0.002	0.001								
Orange	2040	UBUS	Aggregatec	65	GAS	542.98													
Orange	2040	UBUS	Aggregatec	65	DSL	558.15	26.24	16.01	0.005885378	0.000	0.000								
						LM Total	4208881.13					26	26	1.59E-05	1.28E-05				
										Total LM Diesel Emissions	0.10	0.06							
										Total Diesel Emissions	0.29	0.18	Total Emissions per Volume Source for Modeling		4.45E-05	3.67E-05			

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Orange

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
ORA I-405 Seal Beach, Corona Northbound	217,162	33,790
ORA I-405 Seal Beach, Corona Southbound	200,359	31,149
*I-405 in Seal Beach, east of the I-605 interchange		
Total Segment Length Northbound	1.09 miles	
Total Segment Length Southbound	1.02 miles	

														Emissions per Volume Source for 1-mile segment Model	
														Northbound	Southbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Orange	2040	HHDT	Aggregatec	55	GAS	2257.31									
Orange	2040	HHDT	Aggregatec	55	DSL	176773.19	33363.64	30756.34	0.004511043	0.33	0.31	28	28	5.71E-05	5.62E-05
						HHDT Total									
						179030.51									
Orange	2040	SBUS	Aggregatec	55	GAS	1129.72									
Orange	2040	SBUS	Aggregatec	55	DSL	1458.16	75.24	69.41	0.002362087	0.000	0.000				
Orange	2040	LDA	Aggregatec	65	GAS	2230959.18									
Orange	2040	LDA	Aggregatec	65	DSL	30932.11	1595.98	1472.49	0.000592181	0.002	0.002				
Orange	2040	LDT1	Aggregatec	65	GAS	197767.78									
Orange	2040	LDT1	Aggregatec	65	DSL	109.07	5.63	5.19	0.003645739	0.000	0.000				
Orange	2040	LDT2	Aggregatec	65	GAS	973824.14									
Orange	2040	LDT2	Aggregatec	65	DSL	2140.08	110.42	101.88	0.003112028	0.001	0.001				
Orange	2040	LHDT1	Aggregatec	65	GAS	18088.63									
Orange	2040	LHDT1	Aggregatec	65	DSL	69687.29	3595.60	3317.39	0.005689391	0.045	0.042				
Orange	2040	LHDT2	Aggregatec	65	GAS	7858.38									
Orange	2040	LHDT2	Aggregatec	65	DSL	35192.00	1815.77	1675.28	0.005579285	0.022	0.021				
Orange	2040	MDV	Aggregatec	65	GAS	466835.18									
Orange	2040	MDV	Aggregatec	65	DSL	13123.32	677.11	624.72	0.000770465	0.001	0.001				
Orange	2040	MH	Aggregatec	65	GAS	2227.68									
Orange	2040	MH	Aggregatec	65	DSL	861.58	44.45	41.01	0.027778475	0.003	0.003				
Orange	2040	MHDT	Aggregatec	65	GAS	7648.92									
Orange	2040	MHDT	Aggregatec	65	DSL	138331.51	7137.37	6585.13	0.002357575	0.037	0.034				
Orange	2040	OBUS	Aggregatec	65	GAS	3771.10									
Orange	2040	OBUS	Aggregatec	65	DSL	5834.17	301.02	277.73	0.003107651	0.002	0.002				
Orange	2040	UBUS	Aggregatec	65	GAS	542.98									
Orange	2040	UBUS	Aggregatec	65	DSL	558.15	28.80		0.005885378	0.000	0.000				
						LM Total	4208881.13					28	28	1.96E-05	1.94E-05
									Total LM Diesel Emissions	0.11	0.11				
									Total Diesel Emissions	0.45	0.41	Total Emissions per Volume Source for Modeling		7.67E-05	7.56E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Riverside

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
RIV I-10 in the Banning area Eastbound	309,956	143,499
RIV I-10 in the Banning area Westbound	365,219	141,836
*RIV I-10 in the Banning area		
Total segment length		
Total Segment Length Eastbound	5.01 miles	
Total Segment Length Westbound	4.98 miles	

Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model		
														Eastbound	Westbound	g/sec
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49										
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	142795.75	141140.91	0.004476464	1.41	1.39	45	45	3.28E-05	3.26E-05	
						HHDT Total										
						652957.96										
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58										
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	81.22	95.70	0.00236367	0.000	0.000					
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18										
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	2330.24	2745.71	0.000623643	0.003	0.004					
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94										
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	6.58	7.75	0.003565448	0.000	0.000					
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82										
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	149.07	175.65	0.003153393	0.001	0.001					
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39										
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	5527.32	6512.81	0.006306578	0.077	0.091					
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48										
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	2767.46	3260.88	0.005487154	0.033	0.039					
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26										
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	960.90	1132.22	0.000795775	0.002	0.002					
Riverside	2040	MH	Aggregatec	65	GAS	4466.36										
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	76.50	90.14	0.036584456	0.006	0.007					
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11										
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	10201.74	12020.64	0.002461834	0.055	0.065					
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87										
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	543.60	640.52	0.002890411	0.003	0.004					
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26										
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	56.84	66.98	0.001999034	0.000	0.000					
						LM Total	6452267.66									
									Total LM Diesel Emissions	0.18	0.21	45	45	4.24E-06	5.02E-06	
									Total Diesel Emissions	1.59	1.61	Total Emissions per Volume Source for Modeling		3.71E-05	3.77E-05	

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Riverside

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
RIV I-15, Riverside Northbound	467,052	75,882
RIV I-15, Riverside Southbound	553,597	90,864
*RIV I-15, Riverside County, near Temecula		
Total segment length		
Total Segment Length Northbound	4.81 miles	
Total Segment Length Southbound	5.83 miles	

														Emissions per Volume Source for 1-mile segment Model	
														Eastbound	Westbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49									
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	75510.30	90418.23	0.004476464	0.75	0.89	45	45	1.81E-05	1.79E-05
						HHDT Total									
						652957.96									
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58									
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	122.39	145.07	0.00236367	0.001	0.001				
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18									
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	3511.29	4161.93	0.000623643	0.005	0.006				
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94									
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	9.92	11.75	0.003565448	0.000	0.000				
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82									
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	224.62	266.25	0.003153393	0.002	0.002				
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39									
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	8328.76	9872.07	0.006306578	0.116	0.137				
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48									
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	4170.10	4942.82	0.005487154	0.050	0.060				
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26									
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	1447.91	1716.21	0.000795775	0.003	0.003				
Riverside	2040	MH	Aggregatec	65	GAS	4466.36									
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	115.27	136.63	0.036584456	0.009	0.011				
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11									
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	15372.34	18220.82	0.002461834	0.083	0.099				
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87									
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	819.11	970.89	0.002890411	0.005	0.006				
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26									
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	85.65	101.52	0.001999034	0.000	0.000				
						LM Total	6452267.66		Total LM Diesel Emissions	0.27	0.33	45	45	6.65E-06	6.50E-06
									Total Diesel Emissions	1.02	1.22	Total Emissions per Volume Source for Modeling		2.47E-05	2.44E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Riverside

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
RIV SR-91 in Corona Eastbound	279,032	43,468
RIV SR-91 in Corona Westbound	261,691	45,686
*SR 91 in Corona, east of the intersection with SR 71		
Total Segment Length Eastbound	2.01 miles	
Total Segment Length Westbound	1.74 miles	

										Emissions per Volume Source for 1-mile segment Model					
		Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound			
Region	CalYr	VehClass	MdIYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49									
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	43254.63	45461.53	0.00476464	0.43	0.45	35	35	3.19E-05	3.87E-05
			HHDT Total			652957.96									
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58									
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	73.12	68.57	0.00236367	0.000	0.000				
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18									
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	2097.76	1967.39	0.000623643	0.003	0.003				
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94									
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	5.92	5.56	0.003565448	0.000	0.000				
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82									
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	134.20	125.86	0.003153393	0.001	0.001				
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39									
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	4975.88	4666.64	0.006306578	0.069	0.065				
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48									
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	2491.36	2336.53	0.005487154	0.030	0.028				
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26									
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	865.03	811.27	0.000795775	0.002	0.001				
Riverside	2040	MH	Aggregatec	65	GAS	4466.36									
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	68.87	64.59	0.036584456	0.006	0.005				
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11									
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	9183.94	8613.18	0.002461834	0.050	0.047				
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87									
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	489.36	458.95	0.002890411	0.003	0.003				
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26									
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	51.17	47.99	0.001999034	0.000	0.000				
			LM Total			6452267.66			Total LM Diesel Emissions	0.16	0.15	35	35	1.22E-05	1.32E-05
									Total Diesel Emissions	0.59	0.60	Total Emissions per Volume Source for Modeling		4.41E-05	5.19E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
SB I-15 in Ontario Northbound	242,855	56,315
SB I-15 in Ontario Southbound	226,754	58,633
*SB I-15 in Ontario		
Total Segment Length Northbound	2.95 miles	
Total Segment Length Southbound	2.97 miles	

Region	CalYr	VehClass	MdiYr	Speed	Fuel	VMT	Northbound		Southbound		Emission Factor		DPM Emissions		No. of Vol Sources		Emissions per Volume Source for 1-mile segment Model		
							Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	(lb/day)	(lb/day)	g/sec	g/sec						
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99													
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	56121.21	58431.20	0.004549501	0.56	0.59	38	38	2.64E-05	2.73E-05				
						HHDT Total	605585.43												
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29													
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	56.76	52.99	0.002367195	0.000	0.000								
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35													
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1904.98	1778.68	0.000628079	0.003	0.002								
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98													
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	5.21	4.86	0.004148062	0.000	0.000								
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18													
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	114.17	106.60	0.003170803	0.001	0.001								
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79													
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	3150.20	2941.35	0.006471347	0.045	0.042								
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24													
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	1546.94	1444.38	0.005641162	0.019	0.018								
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18													
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	744.23	694.89	0.000818397	0.001	0.001								
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92													
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	58.51	54.63	0.035762098	0.005	0.004								
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83													
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	5241.21	4893.74	0.002347392	0.027	0.025								
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91													
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	186.04	173.71	0.003061533	0.001	0.001								
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59													
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	56.09	52.37	0.005096589	0.001	0.001								
						LM Total	7755529.37												
									Total LM Diesel Emissions	0.10	0.10	38	38	4.82E-06	4.47E-06				
									Total Diesel Emissions	0.67	0.68	Total Emissions per Volume Source for Modeling		3.12E-05	3.17E-05				

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Additional Segment	LM VMT/day	HD VMT/day
SB I-15 in the Victorville area Northbound	191,880	85,605
SB I-15 in the Victorville area Southbound	177,731	88,343
*I-15 in the Victorville area		
Total segment length		
Total Segment Length Northbound	4.32 miles	
Total Segment Length Southbound	4.39 miles	

Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	Emission Factor	PM10_RUNEX	DPM Emissions		Emissions per Volume Source for 1-mile segment Model		
											Eastbound	Westbound	Eastbound	Westbound	Eastbound
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99									
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	85310.21	88039.57	0.004549501	0.86	0.88	58	58	1.79E-05	1.82E-05
						HHDT Total									
						605585.43									
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29									
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	44.84	41.54	0.002367195	0.000	0.000				
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35									
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1505.12	1394.14	0.000628079	0.002	0.002				
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98									
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	4.12	3.81	0.004148062	0.000	0.000				
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18									
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	90.21	83.55	0.003170803	0.001	0.001				
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79									
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	2488.98	2305.44	0.006471347	0.036	0.033				
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24									
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	1222.24	1132.11	0.005641162	0.015	0.014				
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18									
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	588.02	544.66	0.000818397	0.001	0.001				
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92									
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	46.23	42.82	0.035762098	0.004	0.003				
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83									
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	4141.09	3835.74	0.002347392	0.021	0.020				
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91									
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	146.99	136.15	0.003061533	0.001	0.001				
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59									
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	44.31	41.05	0.005096589	0.000	0.000				
						LM Total	7755529.37								
									Total LM Diesel Emissions	0.08	0.08	58	58	1.70E-06	1.55E-06
									Total Diesel Emissions	0.94	0.96	Total Emissions per Volume Source for Modeling		1.96E-05	1.98E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
SB SR-60 in Ontario Eastbound	239,792	34,038
SB SR-60 in Ontario Westbound	232,920	30,838
*SR 60 in Ontario, west of the I-15 interchange		
Total Segment Length Eastbound	2.35 miles	
Total Segment Length Westbound	2.22 miles	

														Emissions per Volume Source for 1-mile segment Model	
		Eastbound	Westbound	Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99									
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	33920.97	30732.42	0.004549501	0.34	0.31	38	38	2.00E-05	1.92E-05
						HHDT Total	605585.43								
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29									
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	56.04	54.43	0.002367195	0.000	0.000				
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35									
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1880.95	1827.05	0.000628079	0.003	0.003				
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98									
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	5.14	5.00	0.004148062	0.000	0.000				
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18									
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	112.73	109.50	0.003170803	0.001	0.001				
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79									
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	3110.47	3021.33	0.006471347	0.044	0.043				
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24									
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	1527.43	1483.65	0.005641162	0.019	0.018				
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18									
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	734.84	713.78	0.000818397	0.001	0.001				
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92									
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	57.77	56.11	0.035762098	0.005	0.004				
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83									
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	5175.12	5026.81	0.002347392	0.027	0.026				
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91									
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	183.70	178.43	0.003061533	0.001	0.001				
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59									
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	55.38	53.79	0.005096589	0.001	0.001				
						LM Total	7755529.37								
								Total LM Diesel Emissions		0.10	0.10	38	38	5.97E-06	6.14E-06
								Total Diesel Emissions		0.44	0.41	Total Emissions per Volume Source for Modeling		2.60E-05	2.53E-05

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Ventura

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
VEN US-101 SB Ventura Freeway Northbound	163,992	28,969
VEN US-101 SB Ventura Freeway Southbound	164,327	30,022
*US-101 Freeway in San Buenaventura near the Ventura Harbor		
Total segment length		
Total Segment Length Northbound	3.21 miles	
Total Segment Length Southbound	3.26 miles	

														Emissions per Volume Source for 1-mile segment Model	
														Northbound	Southbound
														Northbound	Southbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Ventura	2040	HHDT	Aggregatec	55	GAS	574.78									
Ventura	2040	HHDT	Aggregatec	55	DSL	40656.62	28564.98	29603.05	0.004456099	0.28	0.29	74	74	6.20E-06	6.33E-06
						HHDT Total									
						41231.40									
Ventura	2040	SBUS	Aggregatec	55	GAS	236.72									
Ventura	2040	SBUS	Aggregatec	55	DSL	216.06	20.71	20.76	0.002368973	0.000	0.000				
Ventura	2040	LDA	Aggregatec	65	GAS	970214.24									
Ventura	2040	LDA	Aggregatec	65	DSL	13436.49	1288.21	1290.84	0.000640157	0.002	0.002				
Ventura	2040	LDT1	Aggregatec	65	GAS	71327.90									
Ventura	2040	LDT1	Aggregatec	65	DSL	39.64	3.80	3.81	0.004119509	0.000	0.000				
Ventura	2040	LDT2	Aggregatec	65	GAS	351421.41									
Ventura	2040	LDT2	Aggregatec	65	DSL	772.46	74.06	74.21	0.003097864	0.001	0.001				
Ventura	2040	LHDT1	Aggregatec	65	GAS	8740.89									
Ventura	2040	LHDT1	Aggregatec	65	DSL	35099.94	3365.16	3372.03	0.006651495	0.049	0.049				
Ventura	2040	LHDT2	Aggregatec	65	GAS	3704.61									
Ventura	2040	LHDT2	Aggregatec	65	DSL	17306.58	1659.25	1662.63	0.005632767	0.021	0.021				
Ventura	2040	MDV	Aggregatec	65	GAS	173106.80									
Ventura	2040	MDV	Aggregatec	65	DSL	4862.35	466.17	467.12	0.000733245	0.001	0.001				
Ventura	2040	MH	Aggregatec	65	GAS	1073.74									
Ventura	2040	MH	Aggregatec	65	DSL	426.61	40.90	40.98	0.04421314	0.004	0.004				
Ventura	2040	MHDT	Aggregatec	65	GAS	3429.98									
Ventura	2040	MHDT	Aggregatec	65	DSL	51809.22	4967.14	4977.28	0.002371846	0.026	0.026				
Ventura	2040	OBUS	Aggregatec	65	GAS	1565.61									
Ventura	2040	OBUS	Aggregatec	65	DSL	1256.95	120.51	120.75	0.003032481	0.001	0.001				
Ventura	2040	UBUS	Aggregatec	65	GAS	226.50									
Ventura	2040	UBUS	Aggregatec	65	DSL	230.13	22.06		0.002390041	0.000	0.000				
						LM Total	1710504.85								
									Total LM Diesel Emissions	0.10	0.10			2.30E-06	2.27E-06
									Total Diesel Emissions	0.38	0.40			8.50E-06	8.60E-06
												Total Emissions per Volume Source for Modeling			

EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Ventura

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Original Segment	LM VMT/day	HD VMT/day
VEN US-101 in Thousand Oaks Northbound	66,450	10,473
VEN US-101 in Thousand Oaks Southbound	79,638	12,646
*US 101 in Thousand Oaks, east of SR 23		
Total segment length		
Total Segment Length Northbound	0.79 miles	
Total Segment Length Southbound	0.94 miles	

														Emissions per Volume Source for 1-mile segment Model	
														Northbound	Southbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Northbound Diesel VMT/day	Southbound Diesel VMT/day	Emission Factor PM10_RUNEX	Northbound DPM Emissions (lb/day)	Southbound DPM Emissions (lb/day)	Northbound No. of Vol Sources	Southbound No. of Vol Sources	Northbound g/sec	Southbound g/sec
Ventura	2040	HHDT	Aggregatec	55	GAS	574.78									
Ventura	2040	HHDT	Aggregatec	55	DSL	40656.62	10326.54	12469.90	0.004456099	0.10	0.12	36	36	1.48E-05	1.79E-05
						HHDT Total	41231.40								
Ventura	2040	SBUS	Aggregatec	55	GAS	236.72									
Ventura	2040	SBUS	Aggregatec	55	DSL	216.06	8.39	10.06	0.002368973	0.000	0.000				
Ventura	2040	LDA	Aggregatec	65	GAS	970214.24									
Ventura	2040	LDA	Aggregatec	65	DSL	13436.49	521.98	625.58	0.000640157	0.001	0.001				
Ventura	2040	LDT1	Aggregatec	65	GAS	71327.90									
Ventura	2040	LDT1	Aggregatec	65	DSL	39.64	1.54	1.85	0.004119509	0.000	0.000				
Ventura	2040	LDT2	Aggregatec	65	GAS	351421.41									
Ventura	2040	LDT2	Aggregatec	65	DSL	772.46	30.01	35.96	0.003097864	0.000	0.000				
Ventura	2040	LHDT1	Aggregatec	65	GAS	8740.89									
Ventura	2040	LHDT1	Aggregatec	65	DSL	35099.94	1363.57	1634.20	0.006651495	0.020	0.024				
Ventura	2040	LHDT2	Aggregatec	65	GAS	3704.61									
Ventura	2040	LHDT2	Aggregatec	65	DSL	17306.58	672.33	805.77	0.005632767	0.008	0.010				
Ventura	2040	MDV	Aggregatec	65	GAS	173106.80									
Ventura	2040	MDV	Aggregatec	65	DSL	4862.35	188.89	226.38	0.000733245	0.000	0.000				
Ventura	2040	MH	Aggregatec	65	GAS	1073.74									
Ventura	2040	MH	Aggregatec	65	DSL	426.61	16.57	19.86	0.04421314	0.002	0.002				
Ventura	2040	MHDT	Aggregatec	65	GAS	3429.98									
Ventura	2040	MHDT	Aggregatec	65	DSL	51809.22	2012.70	2412.15	0.002371846	0.011	0.013				
Ventura	2040	OBUS	Aggregatec	65	GAS	1565.61									
Ventura	2040	OBUS	Aggregatec	65	DSL	1256.95	48.83	58.52	0.003032481	0.000	0.000				
Ventura	2040	UBUS	Aggregatec	65	GAS	226.50									
Ventura	2040	UBUS	Aggregatec	65	DSL	230.13	8.94	10.71	0.002390041	0.000	0.000				
						LM Total	1710504.85		Total LM Diesel Emissions	0.04	0.05	36	36	6.15E-06	7.37E-06
									Total Diesel Emissions	0.14	0.17	Total Emissions per Volume Source for Modeling		2.09E-05	2.52E-05

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Imperial

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment
 IMP I-8 just east of El Centro Eastbound
 IMP I-8 just east of El Centro Westbound
 *IMP I-8 just east of El Centro
 Total Segment Length Eastbound
 Total Segment Length Westbound

LM VMT/day HD VMT/day
 25,734 11,339
 26,612 11,487
 1.51 miles
 1.51 miles

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	Emission Factor	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model	
															Eastbound	Westbound
Imperial	2040	HHDT	Aggregatec	55	GAS	344.61										
Imperial	2040	HHDT	Aggregatec	55	DSL	112537.37	11304.00	11451.65	0.0044460	0.11	0.11	74	74	5.21E-06	5.27E-06	
						HHDT Total										
						112881.97										
Imperial	2040	LDA	Aggregatec	65	GAS	652537.91										
Imperial	2040	LDA	Aggregatec	65	DSL	9049.41	195.36	202.03	0.0006077	0.000	0.000					
Imperial	2040	LDT1	Aggregatec	65	GAS	40817.67										
Imperial	2040	LDT1	Aggregatec	65	DSL	23.04	0.50	0.51	0.0044227	0.000	0.000					
Imperial	2040	LDT2	Aggregatec	65	GAS	231016.98										
Imperial	2040	LDT2	Aggregatec	65	DSL	506.71	10.94	11.31	0.0031560	0.000	0.000					
Imperial	2040	LHDT1	Aggregatec	65	GAS	9623.67										
Imperial	2040	LHDT1	Aggregatec	65	DSL	23096.13	498.62	515.63	0.0071969	0.008	0.008					
Imperial	2040	LHDT2	Aggregatec	65	GAS	3638.16										
Imperial	2040	LHDT2	Aggregatec	65	DSL	11199.01	241.77	250.02	0.0055889	0.003	0.003					
Imperial	2040	MDV	Aggregatec	65	GAS	131010.07										
Imperial	2040	MDV	Aggregatec	65	DSL	3580.16	77.29	79.93	0.0008450	0.000	0.000					
Imperial	2040	MH	Aggregatec	65	GAS	1208.45										
Imperial	2040	MH	Aggregatec	65	DSL	380.40	8.21	8.49	0.0214654	0.000	0.000					
Imperial	2040	MHDT	Aggregatec	65	GAS	8871.92										
Imperial	2040	MHDT	Aggregatec	65	DSL	50973.55	1100.45	1138.00	0.0025595	0.006	0.006					
Imperial	2040	OBUS	Aggregatec	65	GAS	3105.57										
Imperial	2040	OBUS	Aggregatec	65	DSL	10460.70	225.83	233.54	0.0027307	0.001	0.001					
Imperial	2040	SBUS	Aggregatec	55	GAS	106.81										
Imperial	2040	SBUS	Aggregatec	55	DSL	133.56	2.88	0.00	0.0023712	0.000	0.000					
Imperial	2040	UBUS	Aggregatec	65	GAS	340.65										
Imperial	2040	UBUS	Aggregatec	65	DSL	336.86	7.27	7.52	0.0089159	0.000	0.000					
						LM Total	1192017.37		Total LM Diesel Emissions	0.02	0.02	74	74	9.16E-07	9.46E-07	
									Total Diesel Emissions	0.13	0.13	Total Emissions per Volume Source for Modeling		6.12E-06	6.22E-06	

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Imperial

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment

IMP SR-78 Eastbound

IMP SR-78 Westbound

*IMP SR-78: State Road 78 Freeway in Westmorland

Total Segment Length Eastbound

Total Segment Length Westbound

LM VMT/day

13,731

8,225

HD VMT/day

2,287

2,427

0.88 miles

0.88 miles

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Emissions per Volume Source for 1-mile segment Model		Emission Factor	DPM Emissions		No. of Vol Sources		g/sec	
							Eastbound	Westbound		Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Imperial	2040	HHDT	Aggregatec	55	GAS	344.61									
Imperial	2040	HHDT	Aggregatec	55	DSL	112537.37	2279.86	2420.05	0.0044460	0.02	0.02	81	81	1.45E-06	1.54E-06
					HHDT Total	112881.97									
Imperial	2040	LDA	Aggregatec	65	GAS	652537.91									
Imperial	2040	LDA	Aggregatec	65	DSL	9049.41	104.24	62.44	0.0006077	0.000	0.000				
Imperial	2040	LDT1	Aggregatec	65	GAS	40817.67									
Imperial	2040	LDT1	Aggregatec	65	DSL	23.04	0.27	0.16	0.0044227	0.000	0.000				
Imperial	2040	LDT2	Aggregatec	65	GAS	231016.98									
Imperial	2040	LDT2	Aggregatec	65	DSL	506.71	5.84	3.50	0.0031560	0.000	0.000				
Imperial	2040	LHDT1	Aggregatec	65	GAS	9623.67									
Imperial	2040	LHDT1	Aggregatec	65	DSL	23096.13	266.05	159.37	0.0071969	0.004	0.003				
Imperial	2040	LHDT2	Aggregatec	65	GAS	3638.16									
Imperial	2040	LHDT2	Aggregatec	65	DSL	11199.01	129.00	77.28	0.0055889	0.002	0.001				
Imperial	2040	MDV	Aggregatec	65	GAS	131010.07									
Imperial	2040	MDV	Aggregatec	65	DSL	3580.16	41.24	24.70	0.0008450	0.000	0.000				
Imperial	2040	MH	Aggregatec	65	GAS	1208.45									
Imperial	2040	MH	Aggregatec	65	DSL	380.40	4.38	2.62	0.0214654	0.000	0.000				
Imperial	2040	MHDT	Aggregatec	65	GAS	8871.92									
Imperial	2040	MHDT	Aggregatec	65	DSL	50973.55	587.17	351.73	0.0025595	0.003	0.002				
Imperial	2040	OBUS	Aggregatec	65	GAS	3105.57									
Imperial	2040	OBUS	Aggregatec	65	DSL	10460.70	120.50	72.18	0.0027307	0.001	0.000				
Imperial	2040	SBUS	Aggregatec	55	GAS	106.81									
Imperial	2040	SBUS	Aggregatec	55	DSL	133.56	1.54	0.00	0.0023712	0.000	0.000				
Imperial	2040	UBUS	Aggregatec	65	GAS	340.65									
Imperial	2040	UBUS	Aggregatec	65	DSL	336.86	3.88	2.32	0.0089159	0.000	0.000				
					LM Total	1192017.37			Total LM Diesel Emissions	0.01	0.01	81	81	6.74E-07	4.04E-07
									Total Diesel Emissions	0.03	0.03	Total Emissions per Volume Source for Modeling		2.12E-06	1.94E-06

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Additional Segment	LM VMT/day	HD VMT/day
LA I-110 Northbound	139,279	23,686
LA I-110 Southbound	137,658	21,046
*LA I-110 in the LA County area, Carson		
Total Segment Length Northbound	1.98 miles	
Total Segment Length Southbound	1.92 miles	

													Emissions per Volume Source for 1-mile segment Model		
							Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	23533.73	20910.78	0.004705303	0.24	0.22	45	45	1.44E-05	1.32E-05
						HHDT Total	1362297.90								
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	899.58	889.11	0.000638477	0.001	0.001				
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	3.58	3.54	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	66.13	65.36	0.003206373	0.000	0.000				
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	5846.22	5778.18	0.005312212	0.068	0.068				
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	2985.58	2950.84	0.005548914	0.037	0.036				
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	455.34	450.04	0.000810979	0.001	0.001				
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	62.25	61.53	0.019049327	0.003	0.003				
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	7132.53	7049.53	0.002356509	0.037	0.037				
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	703.42	695.23	0.003145968	0.005	0.005				
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	87.32	86.30	0.002363056	0.000	0.000				
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	45.96	45.42	0.008638593	0.001	0.001				
						LM Total	7934485.95	Total LM Diesel Emissions		0.15	0.15	45	45	9.04E-06	9.22E-06
								Total Diesel Emissions		0.40	0.37	Total Emissions per Volume Source for Modeling		2.34E-05	2.24E-05

EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: Los Angeles
 Calendar Year: 2040
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment
 LA I-710 in Compton Northbound LM VMT/day 167,305 HD VMT/day 24,030
 LA I-710 in Compton Southbound 160,316 21,136
 *LA I-710 in Compton, north of the intersection with SR 91
 Total Segment Length Northbound 1.34 miles
 Total Segment Length Southbound 1.34 miles

													Emissions per Volume Source for 1-mile segment Model			
													Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdIVr	Speed	Fuel	VMT	Northbound Diesel VMT/day	Southbound Diesel VMT/day	Emission Factor	Northbound DPM Emissions (lb/day)	Southbound DPM Emissions (lb/day)	Northbound No. of Vol Sources	Southbound No. of Vol Sources	Northbound g/sec	Southbound g/sec	
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56										
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	23875.38	20999.24	0.004705303	0.25	0.22	34	34	2.85E-05	2.51E-05	
						HHDT Total	1362297.90									
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24										
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	2030.03	1945.22	0.000638477	0.003	0.003					
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74										
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	8.08	7.74	0.005414579	0.000	0.000					
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22										
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	149.23	142.99	0.003206373	0.001	0.001					
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68										
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	13192.83	12641.71	0.005312212	0.155	0.148					
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09										
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	6737.39	6455.94	0.005548914	0.082	0.079					
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09										
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	1027.53	984.60	0.000810979	0.002	0.002					
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81										
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	140.48	134.61	0.019049327	0.006	0.006					
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07										
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	16095.57	15423.19	0.002356509	0.084	0.080					
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64										
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	1587.36	1521.05	0.003145968	0.011	0.011					
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05										
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	197.04	188.81	0.002363056	0.001	0.001					
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08										
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	103.71	99.38	0.008638593	0.002	0.002					
						LM Total	4223555.71									
								Total LM Diesel Emissions	0.35	0.33	34	34	3.99E-05	3.82E-05		
								Total Diesel Emissions	0.59	0.55	Total Emissions per Volume Source for Modeling		6.84E-05	6.33E-05		

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment

LA SR-60 DB Eastbound

LA SR-60 DB Westbound

*LA SR-60 near Diamond Bar

Total Segment Length Eastbound

Total Segment Length Westbound

LM VMT/day

320,534

362,669

HD VMT/day

39,881

36,647

3.14 miles

3.12 miles

										Emissions per Volume Source for 1-mile segment Model					
										Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	39623.96	36410.36	0.004705303	0.41	0.38	46	46	1.49E-05	1.38E-05
						HHDT Total	1362297.90								
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	2070.27	2342.41	0.000638477	0.003	0.003				
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	8.24	9.32	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	152.19	172.19	0.003206373	0.001	0.001				
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	13454.35	15222.96	0.005312212	0.158	0.178				
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	6870.95	7774.15	0.005548914	0.084	0.095				
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	1047.90	1185.65	0.000810979	0.002	0.002				
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	143.26	162.10	0.019049327	0.006	0.007				
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	16414.63	18572.38	0.002356509	0.085	0.096				
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	1618.82	1831.62	0.003145968	0.011	0.013				
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	200.95	227.36	0.002363056	0.001	0.001				
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	105.76	119.67	0.008638593	0.002	0.002				
						LM Total	7934485.95	Total LM Diesel Emissions		0.35	0.40	46	46	1.28E-05	1.46E-05
								Total Diesel Emissions		0.76	0.78	Total Emissions per Volume Source for Modeling		2.78E-05	2.84E-05

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Additional Segment

LA SR-60 SEM, El Monte Eastbound

LA SR-60 SEM, El Monte Westbound

*LA SR-60 in the El Monte / Peck Rd area

Total Segment Length Eastbound

Total Segment Length Westbound

LM VMT/day HD VMT/day

181,977 14,103

197,128 15,975

1.52 miles

1.50 miles

														Emissions per Volume Source for 1-mile segment Model	
							Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Los Angele	2040	HHDT	Aggregatec	55	GAS	8784.56									
Los Angele	2040	HHDT	Aggregatec	55	DSL	1353513.34	14012.33	15872.11	0.004705303	0.15	0.16	39	39	1.29E-05	1.48E-05
						HHDT Total	1362297.90								
Los Angele	2040	LDA	Aggregatec	65	GAS	3710930.24									
Los Angele	2040	LDA	Aggregatec	65	DSL	51247.27	1175.36	1273.21	0.000638477	0.002	0.002				
Los Angele	2040	LDT1	Aggregatec	65	GAS	357689.74									
Los Angele	2040	LDT1	Aggregatec	65	DSL	203.88	4.68	5.07	0.005414579	0.000	0.000				
Los Angele	2040	LDT2	Aggregatec	65	GAS	1717339.22									
Los Angele	2040	LDT2	Aggregatec	65	DSL	3767.19	86.40	93.59	0.003206373	0.001	0.001				
Los Angele	2040	LHDT1	Aggregatec	65	GAS	79906.68									
Los Angele	2040	LHDT1	Aggregatec	65	DSL	333048.29	7638.46	8274.41	0.005312212	0.089	0.097				
Los Angele	2040	LHDT2	Aggregatec	65	GAS	34998.09									
Los Angele	2040	LHDT2	Aggregatec	65	DSL	170083.04	3900.85	4225.62	0.005548914	0.048	0.052				
Los Angele	2040	MDV	Aggregatec	65	GAS	925711.09									
Los Angele	2040	MDV	Aggregatec	65	DSL	25939.59	594.92	644.46	0.000810979	0.001	0.001				
Los Angele	2040	MH	Aggregatec	65	GAS	8959.81									
Los Angele	2040	MH	Aggregatec	65	DSL	3546.36	81.34	88.11	0.019049327	0.003	0.004				
Los Angele	2040	MHDT	Aggregatec	65	GAS	35781.07									
Los Angele	2040	MHDT	Aggregatec	65	DSL	406327.01	9319.10	10094.98	0.002356509	0.048	0.052				
Los Angele	2040	OBUS	Aggregatec	65	GAS	15205.64									
Los Angele	2040	OBUS	Aggregatec	65	DSL	40072.26	919.06	995.57	0.003145968	0.006	0.007				
Los Angele	2040	SBUS	Aggregatec	55	GAS	3729.05									
Los Angele	2040	SBUS	Aggregatec	55	DSL	4974.29	114.09	123.58	0.002363056	0.001	0.001				
Los Angele	2040	UBUS	Aggregatec	65	GAS	2408.08									
Los Angele	2040	UBUS	Aggregatec	65	DSL	2618.07	60.05	65.04	0.008638593	0.001	0.001				
						LM Total	7934485.95	Total LM Diesel Emissions		0.20	0.22	39	39	1.78E-05	1.95E-05
								Total Diesel Emissions		0.35	0.38	Total Emissions per Volume Source for Modeling		3.06E-05	3.43E-05

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Orange

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment	LM VMT/day	HD VMT/day
ORA I-5 Northbound	195,497	19,319
ORA I-5 Southbound	119,133	12,062
*ORA I-5 in Orange County, near intersection of SR 57 and SR 22		
Total Segment Length Northbound	1.32 miles	
Total Segment Length Eastbound	0.81 miles	

														Emissions per Volume Source for 1-mile segment Model	
							Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Orange	2040	HHDT	Aggregatec	55	GAS	2257.31									
Orange	2040	HHDT	Aggregatec	55	DSL	176773.19	19075.73	11910.32	0.004511043	0.19	0.12	26	26	2.90E-05	2.39E-05
						HHDT Total	179030.51								
Orange	2040	LDA	Aggregatec	65	GAS	2230959.18									
Orange	2040	LDA	Aggregatec	65	DSL	30932.11	1436.76	875.54	0.000592181	0.002	0.001				
Orange	2040	LDT1	Aggregatec	65	GAS	197767.78									
Orange	2040	LDT1	Aggregatec	65	DSL	109.07	5.07	3.09	0.003645739	0.000	0.000				
Orange	2040	LDT2	Aggregatec	65	GAS	973824.14									
Orange	2040	LDT2	Aggregatec	65	DSL	2140.08	99.40	60.58	0.003112028	0.001	0.000				
Orange	2040	LHDT1	Aggregatec	65	GAS	18088.63									
Orange	2040	LHDT1	Aggregatec	65	DSL	69687.29	3236.89	1972.50	0.005689391	0.041	0.025				
Orange	2040	LHDT2	Aggregatec	65	GAS	7858.38									
Orange	2040	LHDT2	Aggregatec	65	DSL	35192.00	1634.62	996.11	0.005579285	0.020	0.012				
Orange	2040	MDV	Aggregatec	65	GAS	466835.18									
Orange	2040	MDV	Aggregatec	65	DSL	13123.32	609.56	371.46	0.000770465	0.001	0.001				
Orange	2040	MH	Aggregatec	65	GAS	2227.68									
Orange	2040	MH	Aggregatec	65	DSL	861.58	40.02	24.39	0.027778475	0.002	0.001				
Orange	2040	MHDT	Aggregatec	65	GAS	7648.92									
Orange	2040	MHDT	Aggregatec	65	DSL	138331.51	6425.32	3915.48	0.002357575	0.033	0.020				
Orange	2040	OBUS	Aggregatec	65	GAS	3771.10									
Orange	2040	OBUS	Aggregatec	65	DSL	5834.17	270.99	165.14	0.003107651	0.002	0.001				
Orange	2040	SBUS	Aggregatec	55	GAS	1129.72									
Orange	2040	SBUS	Aggregatec	55	DSL	1458.16	67.73	41.27	0.002362087	0.000	0.000				
Orange	2040	UBUS	Aggregatec	65	GAS	542.98									
Orange	2040	UBUS	Aggregatec	65	DSL	558.15	25.93	15.80	0.005885378	0.000	0.000				
						LM Total	4208881.13	Total LM Diesel Emissions		0.10	0.06	26	26	1.57E-05	1.26E-05
								Total Diesel Emissions		0.29	0.18	Total Emissions per Volume Source for Modeling		4.47E-05	3.66E-05

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Orange

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment

ORA I-405 Seal Beach, Corona Northbound 217,036 33,923

ORA I-405 Seal Beach, Corona Southbound 199,867 31,326

*I-405 in Seal Beach, east of the I-605 interchange

Total Segment Length Northbound 1.09 miles

Total Segment Length Southbound 1.02 miles

										Emissions per Volume Source for 1-mile segment Model								
										Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec			
Orange	2040	HHDT	Aggregatec	55	GAS	2257.31												
Orange	2040	HHDT	Aggregatec	55	DSL	176773.19	33495.77	30930.93	0.004511043	0.333	0.308	28	28	5.73E-05	5.65E-05			
						HHDT Total	179030.51											
Orange	2040	LDA	Aggregatec	65	GAS	2230959.18												
Orange	2040	LDA	Aggregatec	65	DSL	30932.11	1595.05	1468.87	0.000592181	0.002	0.002							
Orange	2040	LDT1	Aggregatec	65	GAS	197767.78												
Orange	2040	LDT1	Aggregatec	65	DSL	109.07	5.62	5.18	0.003645739	0.000	0.000							
Orange	2040	LDT2	Aggregatec	65	GAS	973824.14												
Orange	2040	LDT2	Aggregatec	65	DSL	2140.08	110.36	101.63	0.003112028	0.001	0.001							
Orange	2040	LHDT1	Aggregatec	65	GAS	18088.63												
Orange	2040	LHDT1	Aggregatec	65	DSL	69687.29	3593.51	3309.23	0.005689391	0.045	0.042							
Orange	2040	LHDT2	Aggregatec	65	GAS	7858.38												
Orange	2040	LHDT2	Aggregatec	65	DSL	35192.00	1814.72	1671.16	0.005579285	0.022	0.021							
Orange	2040	MDV	Aggregatec	65	GAS	466835.18												
Orange	2040	MDV	Aggregatec	65	DSL	13123.32	676.72	623.19	0.000770465	0.001	0.001							
Orange	2040	MH	Aggregatec	65	GAS	2227.68												
Orange	2040	MH	Aggregatec	65	DSL	861.58	44.43	40.91	0.027778475	0.003	0.003							
Orange	2040	MHDT	Aggregatec	65	GAS	7648.92												
Orange	2040	MHDT	Aggregatec	65	DSL	138331.51	7133.24	6568.93	0.002357575	0.037	0.034							
Orange	2040	OBUS	Aggregatec	65	GAS	3771.10												
Orange	2040	OBUS	Aggregatec	65	DSL	5834.17	300.85	277.05	0.003107651	0.002	0.002							
Orange	2040	SBUS	Aggregatec	55	GAS	1129.72												
Orange	2040	SBUS	Aggregatec	55	DSL	1458.16	75.19	69.24	0.002362087	0.000	0.000							
Orange	2040	UBUS	Aggregatec	65	GAS	542.98												
Orange	2040	UBUS	Aggregatec	65	DSL	558.15	28.78	26.50	0.005885378	0.000	0.000							
						LM Total	4208881.13											
								Total LM Diesel Emissions		0.114052001	0.10502939	28	28	1.96E-05	1.93E-05			
								Total Diesel Emissions		0.45	0.41	Total Emissions per Volume Source for Modeling		7.69E-05	7.59E-05			

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Riverside

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Additional Segment	LM VMT/day	HD VMT/day
RIV I-10 in the Banning area Eastbound	307,953	141,302
RIV I-10 in the Banning area Westbound	362,630	139,692
*RIV I-10 in the Banning area		
Total Segment Length Eastbound	5.01 miles	
Total Segment Length Westbound	4.98 miles	

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Emissions per Volume Source for 1-mile segment Model		Emission Factor	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-mile segment Model		
							Eastbound	Westbound										Eastbound	Westbound	g/sec
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49														
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	140608.70	139007.49	0.004476464	1.39	1.37	45	45	3.23E-05	3.21E-05					
						HHDT Total	652957.96													
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18														
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	2315.19	2726.25	0.000623643	0.003	0.004									
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94														
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	6.54	7.70	0.003565448	0.000	0.000									
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82														
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	148.11	174.40	0.003153393	0.001	0.001									
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39														
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	5491.61	6466.64	0.006306578	0.076	0.090									
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48														
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	2749.58	3237.77	0.005487154	0.033	0.039									
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26														
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	954.69	1124.19	0.000795775	0.002	0.002									
Riverside	2040	MH	Aggregatec	65	GAS	4466.36														
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	76.01	89.50	0.036584456	0.006	0.007									
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11														
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	10135.82	11935.44	0.002461834	0.055	0.065									
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87														
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	540.08	635.97	0.002890411	0.003	0.004									
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58														
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	80.70	95.03	0.00236367	0.000	0.000									
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26														
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	56.48	66.50	0.001999034	0.000	0.000									
						LM Total	6452267.66													
								Total LM Diesel Emissions		0.18	0.21	45	45	4.21E-06	4.99E-06					
								Total Diesel Emissions		1.57	1.58	Total Emissions per Volume Source for Modeling		3.65E-05	3.71E-05					

EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: Riverside
 Calendar Year: 2040
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Additional Segment	LM VMT/day	HD VMT/day
RIV 1-15, Riverside Northbound	467,016	75,897
RIV 1-15, Riverside Southbound	553,334	90,970
*RIV 1-15, Riverside County, near Temecula		
Total Segment Length Northbound	4.81 miles	
Total Segment Length Southbound	5.83 miles	

														Emissions per Volume Source for 1-mile segment Model	
							Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49									
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	75524.59	90523.72	0.004476464	0.75	0.89	45	45	1.81E-05	1.79E-05
			HHDT Total			652957.96									
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18									
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	3511.02	4159.96	0.00623643	0.005	0.006				
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94									
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	9.92	11.75	0.003565448	0.000	0.000				
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82									
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	224.61	266.12	0.003153393	0.002	0.002				
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39									
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	8328.11	9867.38	0.006306578	0.116	0.137				
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48									
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	4169.78	4940.47	0.005487154	0.050	0.060				
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26									
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	1447.80	1715.39	0.000795775	0.003	0.003				
Riverside	2040	MH	Aggregatec	65	GAS	4466.36									
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	115.26	136.57	0.036584456	0.009	0.011				
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11									
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	15371.13	18212.15	0.002461834	0.083	0.099				
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87									
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	819.04	970.43	0.002890411	0.005	0.006				
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58									
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	122.38	145.00	0.00236367	0.001	0.001				
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26									
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	85.65	101.48	0.001999034	0.000	0.000				
			LM Total			6452267.66									
								Total LM Diesel Emissions		0.27	0.32	45	45	6.65E-06	6.50E-06
								Total Diesel Emissions		1.02	1.22	Total Emissions per Volume Source for Modeling		2.47E-05	2.44E-05

EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: Riverside
 Calendar Year: 2040
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment
 RIV SR-91 in Corona Eastbound 276,171 43,193
 RIV SR-91 in Corona Westbound 259,551 45,549
 *SR 91 in Corona, east of the intersection with SR 71
 Total Segment Length Eastbound 2.01 miles
 Total Segment Length Westbound 1.76 miles

														Emissions per Volume Source for 1-mile segment Model	
														Eastbound	Westbound
Region	CalYr	VehClass	MdIYr	Speed	Fuel	VMT	Eastbound Diesel VMT/day	Westbound Diesel VMT/day	Emission Factor PM10_RUNEX	Eastbound DPM Emissions (lb/day)	Westbound DPM Emissions (lb/day)	Eastbound No. of Vol Sources	Westbound No. of Vol Sources	Eastbound g/sec	Westbound g/sec
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49									
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	42981.28	45326.09	0.004476464	0.42	0.45	35	35	3.17E-05	3.81E-05
						HHDT Total	652957.96								
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18									
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	2076.25	1951.30	0.000623643	0.003	0.003				
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94									
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	5.86	5.51	0.003565448	0.000	0.000				
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82									
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	132.82	124.83	0.003153393	0.001	0.001				
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39									
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	4924.85	4628.47	0.006306578	0.068	0.064				
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48									
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	2465.81	2317.41	0.005487154	0.030	0.028				
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26									
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	856.16	804.63	0.000795775	0.002	0.001				
Riverside	2040	MH	Aggregatec	65	GAS	4466.36									
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	68.16	64.06	0.036584456	0.005	0.005				
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11									
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	9089.76	8542.73	0.002461834	0.049	0.046				
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87									
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	484.34	455.20	0.002890411	0.003	0.003				
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58									
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	72.37	68.01	0.00236367	0.000	0.000				
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26									
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	50.65	47.60	0.001999034	0.000	0.000				
						LM Total	6452267.66	Total LM Diesel Emissions		0.16	0.15	35	35	1.21E-05	1.30E-05
								Total Diesel Emissions		0.59	0.60	Total Emissions per Volume Source for Modeling		4.38E-05	5.11E-05

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment

SB I-15 in Ontario Northbound

SB I-15 in Ontario Southbound

*SB I-15 in Ontario

Total Segment Length Northbound

Total Segment Length Southbound

LM VMT/day

237,047

219,210

2.95 miles

2.97 miles

HD VMT/day

55,236

57,152

										Emissions per Volume Source for 1-mile segment Model					
										Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99									
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	55045.89	56955.40	0.004549501	0.55	0.57	38	38	2.59E-05	2.66E-05
						HHDT Total	605585.43								
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35									
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1859.42	1719.50	0.000628079	0.003	0.002				
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98									
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	5.09	4.70	0.004148062	0.000	0.000				
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18									
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	111.44	103.05	0.003170803	0.001	0.001				
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79									
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	3074.86	2843.49	0.006471347	0.044	0.041				
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24									
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	1509.94	1396.32	0.005641162	0.019	0.017				
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18									
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	726.43	671.77	0.000818397	0.001	0.001				
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92									
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	57.11	52.81	0.035762098	0.005	0.004				
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83									
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	5115.88	4730.92	0.002347392	0.026	0.024				
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91									
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	181.59	167.93	0.003061533	0.001	0.001				
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29									
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	55.40	51.23	0.002367195	0.000	0.000				
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59									
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	54.75	50.63	0.005096589	0.001	0.001				
						LM Total	7755529.37	Total LM Diesel Emissions		0.10	0.09	38	38	4.71E-06	4.32E-06
								Total Diesel Emissions		0.65	0.66	Total Emissions per Volume Source for Modeling		3.06E-05	3.09E-05

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: San Bernardino

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Additional Segment

SB I-15 in the Victorville area Northbound

LM VMT/day

HD VMT/day

186,288

83,910

SB I-15 in the Victorville area Southbound

171,351

86,521

*I-15 in the Victorville area

Total Segment Length Northbound

4.32 miles

Total Segment Length Southbound

4.39 miles

										Emissions per Volume Source for 1-mile segment Model								
										Northbound	Southbound	Emission Factor	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Region	CalYr	VehClass	MdYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec			
San Bernar	2040	HHDT	Aggregatec	55	GAS	2082.99												
San Bernar	2040	HHDT	Aggregatec	55	DSL	603502.45	83620.99	86223.17	0.004549501	0.84	0.86	58	58	1.76E-05	1.78E-05			
						HHDT Total	605585.43											
San Bernar	2040	LDA	Aggregatec	65	GAS	4394414.35												
San Bernar	2040	LDA	Aggregatec	65	DSL	60835.08	1461.26	1344.09	0.000628079	0.002	0.002							
San Bernar	2040	LDT1	Aggregatec	65	GAS	297115.98												
San Bernar	2040	LDT1	Aggregatec	65	DSL	166.37	4.00	3.68	0.004148062	0.000	0.000							
San Bernar	2040	LDT2	Aggregatec	65	GAS	1662936.18												
San Bernar	2040	LDT2	Aggregatec	65	DSL	3645.97	87.58	80.55	0.003170803	0.001	0.001							
San Bernar	2040	LHDT1	Aggregatec	65	GAS	49719.79												
San Bernar	2040	LHDT1	Aggregatec	65	DSL	100601.03	2416.44	2222.68	0.006471347	0.034	0.032							
San Bernar	2040	LHDT2	Aggregatec	65	GAS	18595.24												
San Bernar	2040	LHDT2	Aggregatec	65	DSL	49401.15	1186.62	1091.47	0.005641162	0.015	0.014							
San Bernar	2040	MDV	Aggregatec	65	GAS	858133.18												
San Bernar	2040	MDV	Aggregatec	65	DSL	23766.83	570.88	525.10	0.000818397	0.001	0.001							
San Bernar	2040	MH	Aggregatec	65	GAS	6284.92												
San Bernar	2040	MH	Aggregatec	65	DSL	1868.41	44.88	41.28	0.035762098	0.004	0.003							
San Bernar	2040	MHDT	Aggregatec	65	GAS	32168.83												
San Bernar	2040	MHDT	Aggregatec	65	DSL	167377.33	4020.40	3698.03	0.002347392	0.021	0.019							
San Bernar	2040	OBUS	Aggregatec	65	GAS	16247.91												
San Bernar	2040	OBUS	Aggregatec	65	DSL	5941.27	142.71	131.27	0.003061533	0.001	0.001							
San Bernar	2040	SBUS	Aggregatec	55	GAS	948.29												
San Bernar	2040	SBUS	Aggregatec	55	DSL	1812.51	43.54	40.05	0.002367195	0.000	0.000							
San Bernar	2040	UBUS	Aggregatec	65	GAS	1757.59												
San Bernar	2040	UBUS	Aggregatec	65	DSL	1791.14	43.02	39.57	0.005096589	0.000	0.000							
						LM Total	7755529.37											
								Total LM Diesel Emissions		0.08	0.07	58	58	1.65E-06	1.50E-06			
								Total Diesel Emissions		0.92	0.94	Total Emissions per Volume Source for Modeling		1.92E-05	1.93E-05			

EMFAC2014 (v1.0.7) Emissions Inventory
 Region Type: County
 Region: Riverside
 Calendar Year: 2040
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories
 Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment
 SB SR-60 in Ontario Eastbound LM VMT/day 291,240 HD VMT/day 38,446
 SB SR-60 in Ontario Westbound 231,384 31,159
 *SR 60 in Ontario, west of the I-15 interchange
 Total Segment Length Eastbound 2.35 miles
 Total Segment Length Westbound 2.22 miles

														Emissions per Volume Source for 1-mile segment Model	
										Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	DPM Emissions (lb/day)	DPM Emissions (lb/day)	No. of Vol Sources	No. of Vol Sources	g/sec	g/sec
Riverside	2040	HHDT	Aggregatec	55	GAS	3201.49									
Riverside	2040	HHDT	Aggregatec	55	DSL	649756.47	38257.33	31006.34	0.004549501	0.38	0.31	38	38	2.26E-05	1.94E-05
						HHDT Total									
						652957.96									
Riverside	2040	LDA	Aggregatec	65	GAS	3501914.18									
Riverside	2040	LDA	Aggregatec	65	DSL	48508.09	2189.54	1739.54	0.000628079	0.003	0.002				
Riverside	2040	LDT1	Aggregatec	65	GAS	248324.94									
Riverside	2040	LDT1	Aggregatec	65	DSL	137.00	6.18	4.91	0.004148062	0.000	0.000				
Riverside	2040	LDT2	Aggregatec	65	GAS	1414362.82									
Riverside	2040	LDT2	Aggregatec	65	DSL	3103.14	140.07	111.28	0.003170803	0.001	0.001				
Riverside	2040	LHDT1	Aggregatec	65	GAS	39326.39									
Riverside	2040	LHDT1	Aggregatec	65	DSL	115060.74	5193.58	4126.17	0.006471347	0.074	0.059				
Riverside	2040	LHDT2	Aggregatec	65	GAS	14891.48									
Riverside	2040	LHDT2	Aggregatec	65	DSL	57609.46	2600.36	2065.92	0.005641162	0.032	0.026				
Riverside	2040	MDV	Aggregatec	65	GAS	719958.26									
Riverside	2040	MDV	Aggregatec	65	DSL	20002.70	902.88	717.31	0.000818397	0.002	0.001				
Riverside	2040	MH	Aggregatec	65	GAS	4466.36									
Riverside	2040	MH	Aggregatec	65	DSL	1592.49	71.88	57.11	0.035762098	0.006	0.005				
Riverside	2040	MHDT	Aggregatec	65	GAS	24915.11									
Riverside	2040	MHDT	Aggregatec	65	DSL	212366.83	9585.75	7615.65	0.002347392	0.050	0.039				
Riverside	2040	OBUS	Aggregatec	65	GAS	9566.87									
Riverside	2040	OBUS	Aggregatec	65	DSL	11315.88	510.77	405.80	0.003061533	0.003	0.003				
Riverside	2040	SBUS	Aggregatec	55	GAS	776.58									
Riverside	2040	SBUS	Aggregatec	55	DSL	1690.78	76.32	60.63	0.002367195	0.000	0.000				
Riverside	2040	UBUS	Aggregatec	65	GAS	1194.26									
Riverside	2040	UBUS	Aggregatec	65	DSL	1183.27	53.41	42.43	0.005096589	0.001	0.000				
						LM Total	6452267.66								
								Total LM Diesel Emissions	0.17	0.14	38	38		1.01E-05	8.50E-06
								Total Diesel Emissions	0.56	0.45	Total Emissions per Volume Source for Modeling		3.27E-05	2.79E-05	

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Ventura

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment

VEN US-101 SB Ventura Freeway Northbound

VEN US-101 SB Ventura Freeway Southbound

*US-101 Freeway in San Buenaventura near the Ventura Harbor

Total segment length

Total Segment Length Northbound

Total Segment Length Southbound

LM VMT/day

163,132

163,677

3.21 miles

3.26 miles

HD VMT/day

28,992

30,100

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Northbound		Southbound		Emission Factor	DPM Emissions		No. of Vol Sources		Emissions per Volume Source for 1-mile segment Model		
							Diesel VMT/day	Diesel VMT/day	PM10_RUNEX	(lb/day)		(lb/day)	g/sec	g/sec	Northbound	Southbound	Northbound	Southbound
Ventura	2040	HHDT	Aggregatec	55	GAS	574.78												
Ventura	2040	HHDT	Aggregatec	55	DSL	40656.62	28588.20	29680.70	0.004456099	0.28	0.29	74	74	6.21E-06	6.35E-06			
						HHDT Total	41231.40											
Ventura	2040	LDA	Aggregatec	65	GAS	970214.24												
Ventura	2040	LDA	Aggregatec	65	DSL	13436.49	1281.45	1285.73	0.000640157	0.002	0.002							
Ventura	2040	LDT1	Aggregatec	65	GAS	71327.90												
Ventura	2040	LDT1	Aggregatec	65	DSL	39.64	3.78	3.79	0.004119509	0.000	0.000							
Ventura	2040	LDT2	Aggregatec	65	GAS	351421.41												
Ventura	2040	LDT2	Aggregatec	65	DSL	772.46	73.67	73.92	0.003097864	0.001	0.001							
Ventura	2040	LHDT1	Aggregatec	65	GAS	8740.89												
Ventura	2040	LHDT1	Aggregatec	65	DSL	35099.94	3347.50	3358.69	0.006651495	0.049	0.049							
Ventura	2040	LHDT2	Aggregatec	65	GAS	3704.61												
Ventura	2040	LHDT2	Aggregatec	65	DSL	17306.58	1650.54	1656.05	0.005632767	0.020	0.021							
Ventura	2040	MDV	Aggregatec	65	GAS	173106.80												
Ventura	2040	MDV	Aggregatec	65	DSL	4862.35	463.72	465.27	0.000733245	0.001	0.001							
Ventura	2040	MH	Aggregatec	65	GAS	1073.74												
Ventura	2040	MH	Aggregatec	65	DSL	426.61	102.40	102.75	0.04421314	0.010	0.010							
Ventura	2040	MHDT	Aggregatec	65	GAS	3429.98												
Ventura	2040	MHDT	Aggregatec	65	DSL	51809.22	327.12	328.21	0.002371846	0.002	0.002							
Ventura	2040	OBUS	Aggregatec	65	GAS	1565.61												
Ventura	2040	OBUS	Aggregatec	65	DSL	1256.95	149.31	149.81	0.003032481	0.001	0.001							
Ventura	2040	SBUS	Aggregatec	55	GAS	236.72												
Ventura	2040	SBUS	Aggregatec	55	DSL	216.06	22.58	22.65	0.002368973	0.000	0.000							
Ventura	2040	UBUS	Aggregatec	65	GAS	226.50												
Ventura	2040	UBUS	Aggregatec	65	DSL	230.13	21.60	21.67	0.002390041	0.000	0.000							
						LM Total	1710504.85											
								Total LM Diesel Emissions	0.09	0.09	74	74	1.89E-06	1.87E-06				
								Total Diesel Emissions	0.37	0.38	Total Emissions per Volume Source for Modeling		8.10E-06	8.21E-06				

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Ventura

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Original Segment

VEN US-101 in Thousand Oaks Northbound

VEN US-101 in Thousand Oaks Southbound

*US 101 in Thousand Oaks, east of SR 23

Total segment length

Total Segment Length Northbound

Total Segment Length Southbound

LM VMT/day

66,525

79,292

HD VMT/day

10,447

12,626

0.79 miles

0.94 miles

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Northbound	Southbound	Emission Factor	Northbound	Southbound	No. of Vol Sources	No. of Vol Sources	Emissions per Volume Source for 1-		
							Diesel VMT/day	Diesel VMT/day		PM10_RUNEX	DPM Emissions (lb/day)			DPM Emissions (lb/day)	Northbound	Southbound
Ventura	2040	HHDT	Aggregatec	55	GAS	574.78										
Ventura	2040	HHDT	Aggregatec	55	DSL	40656.62	10301.06	12449.58	0.004456099	0.10	0.12	36	36	1.48E-05	1.78E-05	
						HHDT Total	41231.40									
Ventura	2040	LDA	Aggregatec	65	GAS	970214.24										
Ventura	2040	LDA	Aggregatec	65	DSL	13436.49	522.57	622.86	0.000640157	0.001	0.001					
Ventura	2040	LDT1	Aggregatec	65	GAS	71327.90										
Ventura	2040	LDT1	Aggregatec	65	DSL	39.64	1.54	1.84	0.004119509	0.000	0.000					
Ventura	2040	LDT2	Aggregatec	65	GAS	351421.41										
Ventura	2040	LDT2	Aggregatec	65	DSL	772.46	30.04	35.81	0.003097864	0.000	0.000					
Ventura	2040	LHDT1	Aggregatec	65	GAS	8740.89										
Ventura	2040	LHDT1	Aggregatec	65	DSL	35099.94	1365.10	1627.10	0.006651495	0.020	0.024					
Ventura	2040	LHDT2	Aggregatec	65	GAS	3704.61										
Ventura	2040	LHDT2	Aggregatec	65	DSL	17306.58	673.08	802.27	0.005632767	0.008	0.010					
Ventura	2040	MDV	Aggregatec	65	GAS	173106.80										
Ventura	2040	MDV	Aggregatec	65	DSL	4862.35	189.11	225.40	0.000733245	0.000	0.000					
Ventura	2040	MH	Aggregatec	65	GAS	1073.74										
Ventura	2040	MH	Aggregatec	65	DSL	426.61	41.76	49.77	0.04421314	0.004	0.005					
Ventura	2040	MHDT	Aggregatec	65	GAS	3429.98										
Ventura	2040	MHDT	Aggregatec	65	DSL	51809.22	133.40	159.00	0.002371846	0.001	0.001					
Ventura	2040	OBUS	Aggregatec	65	GAS	1565.61										
Ventura	2040	OBUS	Aggregatec	65	DSL	1256.95	60.89	72.58	0.003032481	0.000	0.000					
Ventura	2040	SBUS	Aggregatec	55	GAS	236.72										
Ventura	2040	SBUS	Aggregatec	55	DSL	216.06	9.21	10.97	0.002368973	0.000	0.000					
Ventura	2040	UBUS	Aggregatec	65	GAS	226.50										
Ventura	2040	UBUS	Aggregatec	65	DSL	230.13	8.81	10.50	0.002390041	0.000	0.000					
						LM Total	1710504.85					36	36	5.09E-06	6.07E-06	
									Total LM Diesel Emissions	0.03	0.04					
									Total Diesel Emissions	0.14	0.16	Total Emissions per Volume Source for Modeling		1.98E-05	2.39E-05	

APPENDIX C

Location of Modeled Receptors for Each Transportation Segment

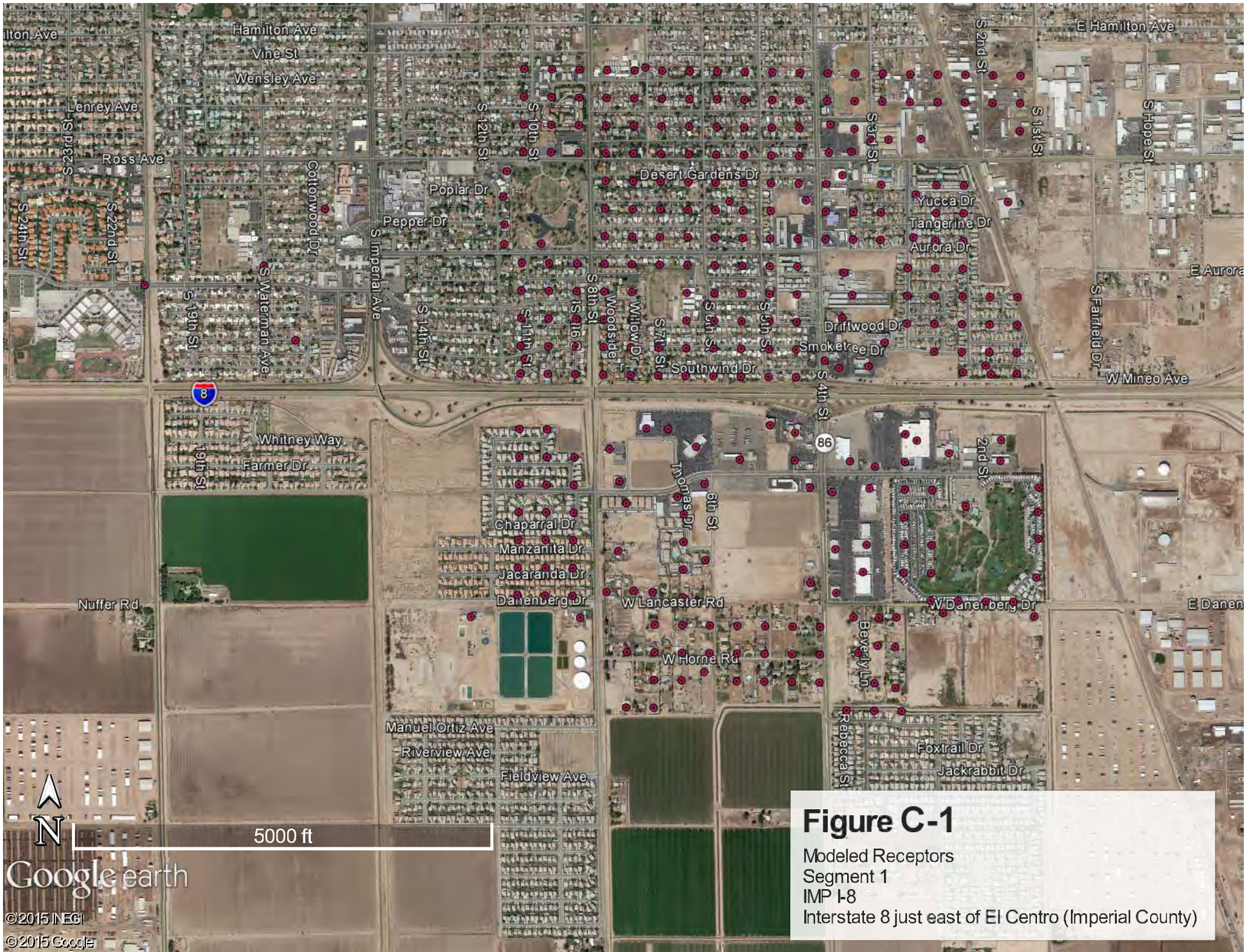


Figure C-1

Modeled Receptors
 Segment 1
 IMP I-8
 Interstate 8 just east of El Centro (Imperial County)

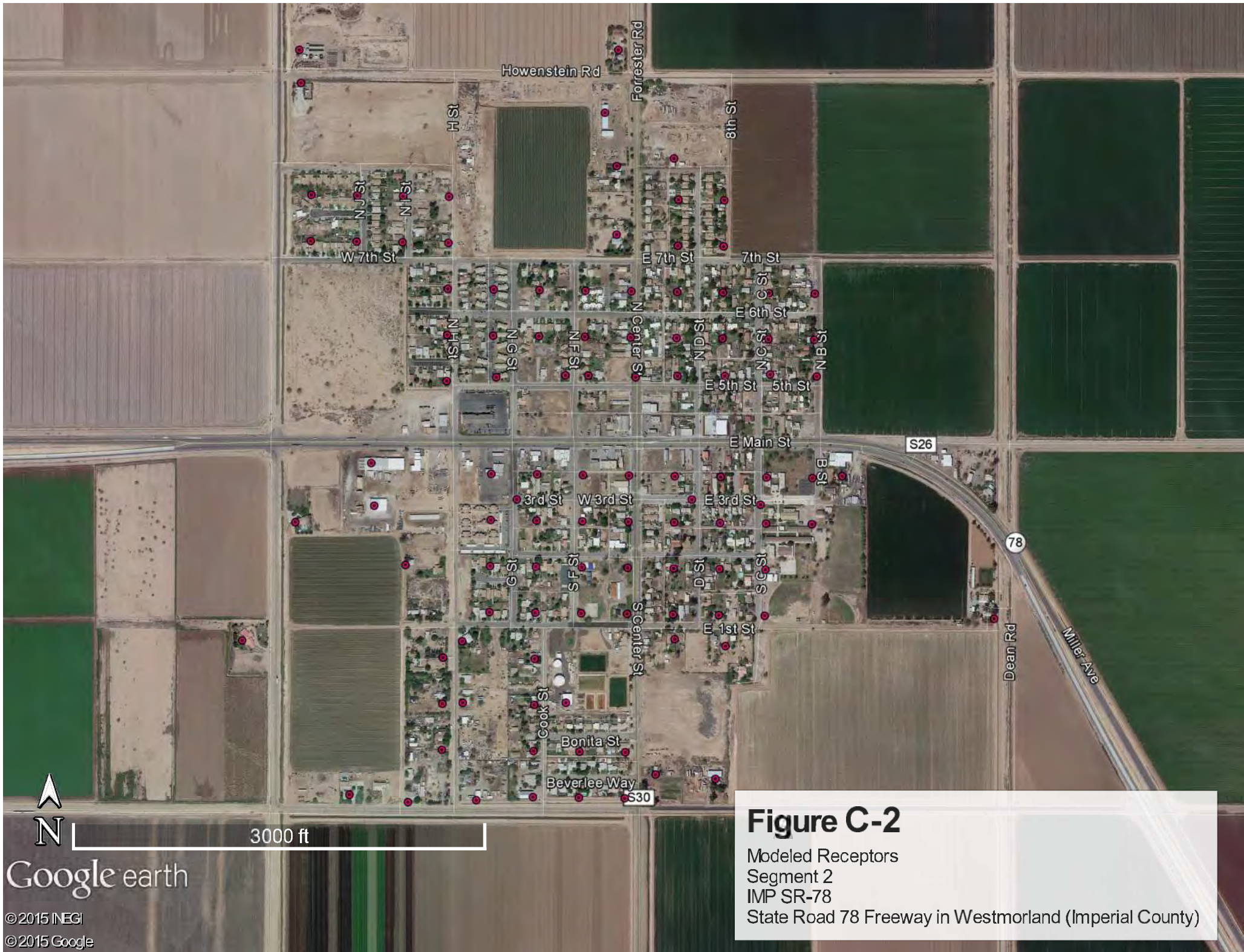


Figure C-2
Modeled Receptors
Segment 2
IMP SR-78
State Road 78 Freeway in Westmorland (Imperial County)

Google earth

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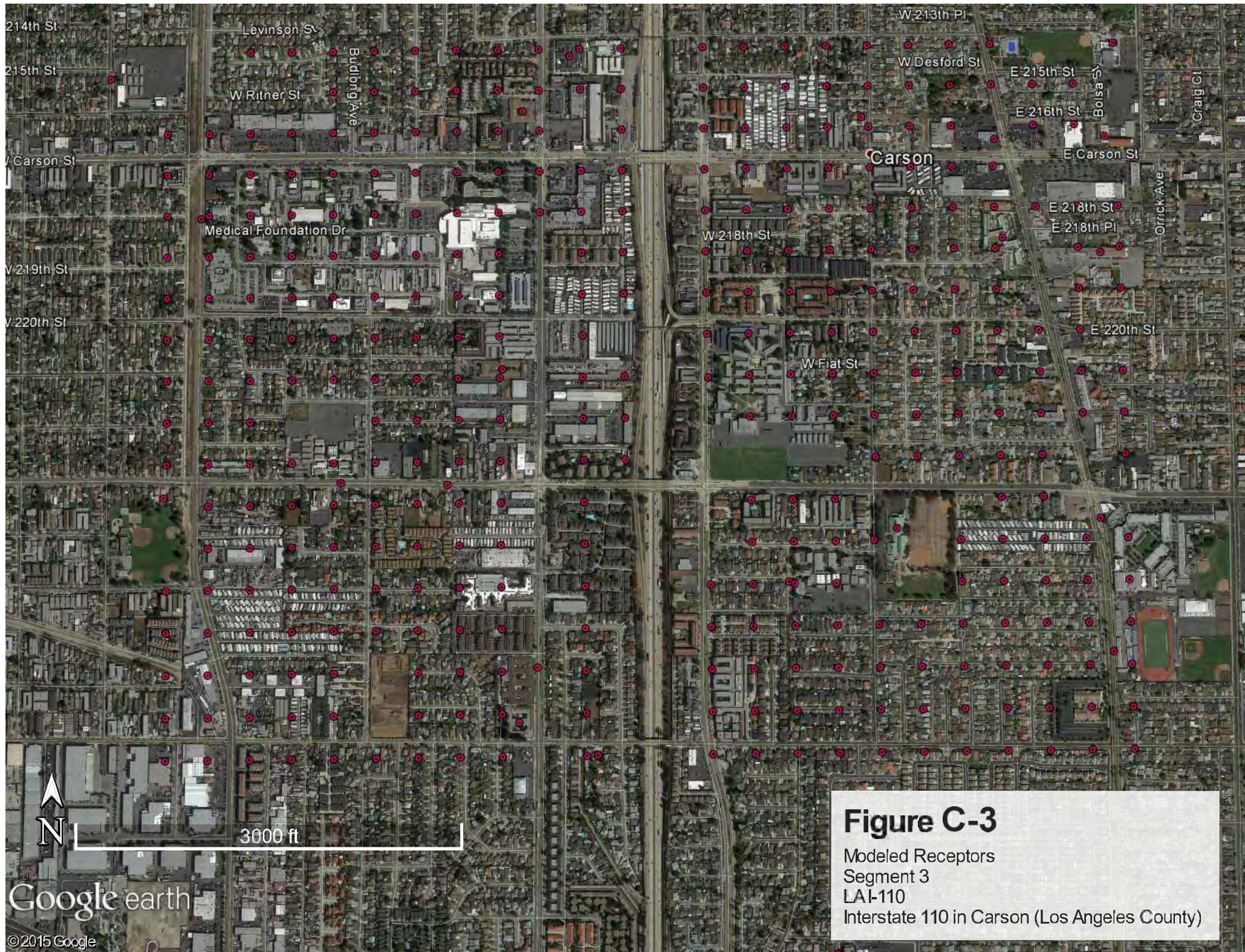


Figure C-3

Modeled Receptors
Segment 3
LAI-110
Interstate 110 in Carson (Los Angeles County)

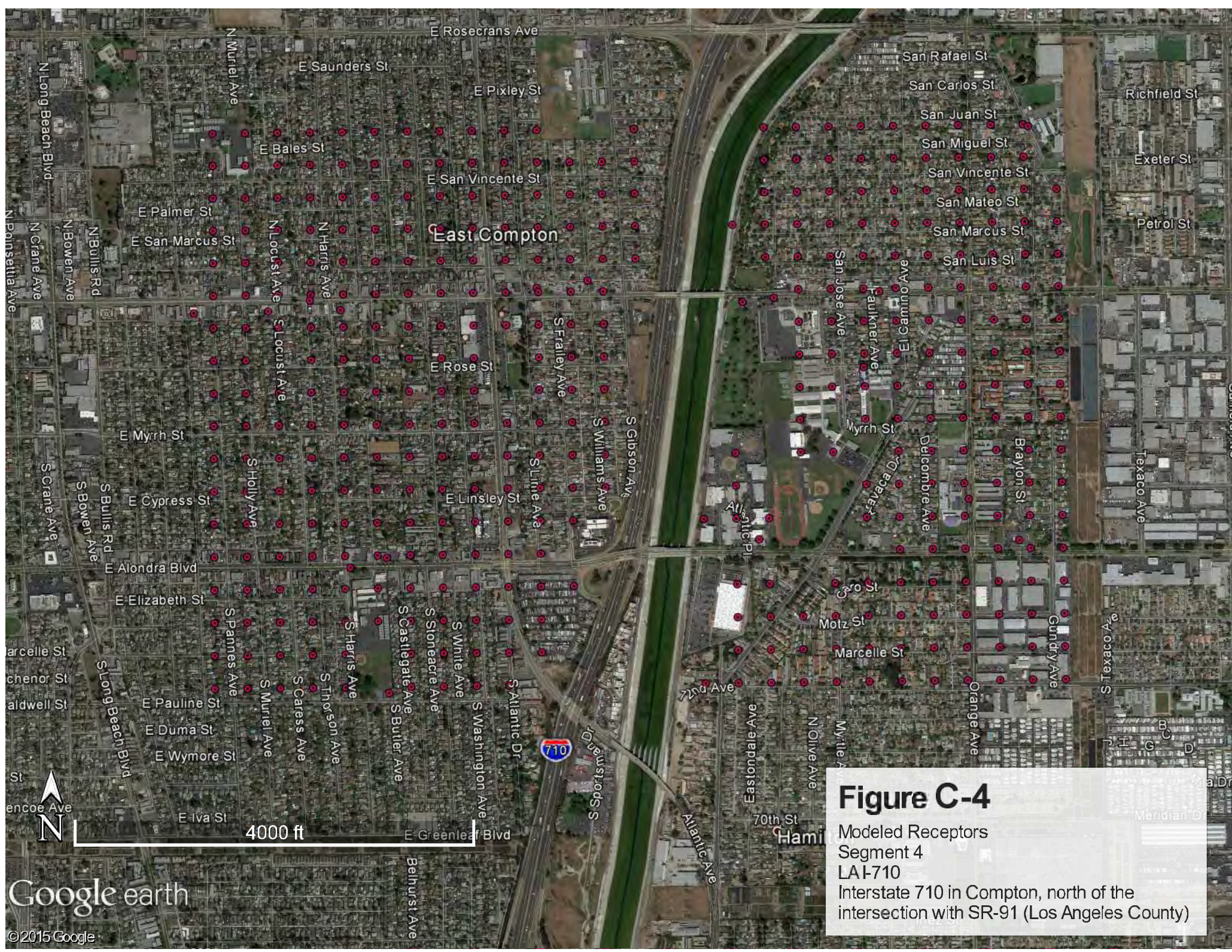


Figure C-4
 Modeled Receptors
 Segment 4
 LAI-710
 Interstate 710 in Compton, north of the
 intersection with SR-91 (Los Angeles County)

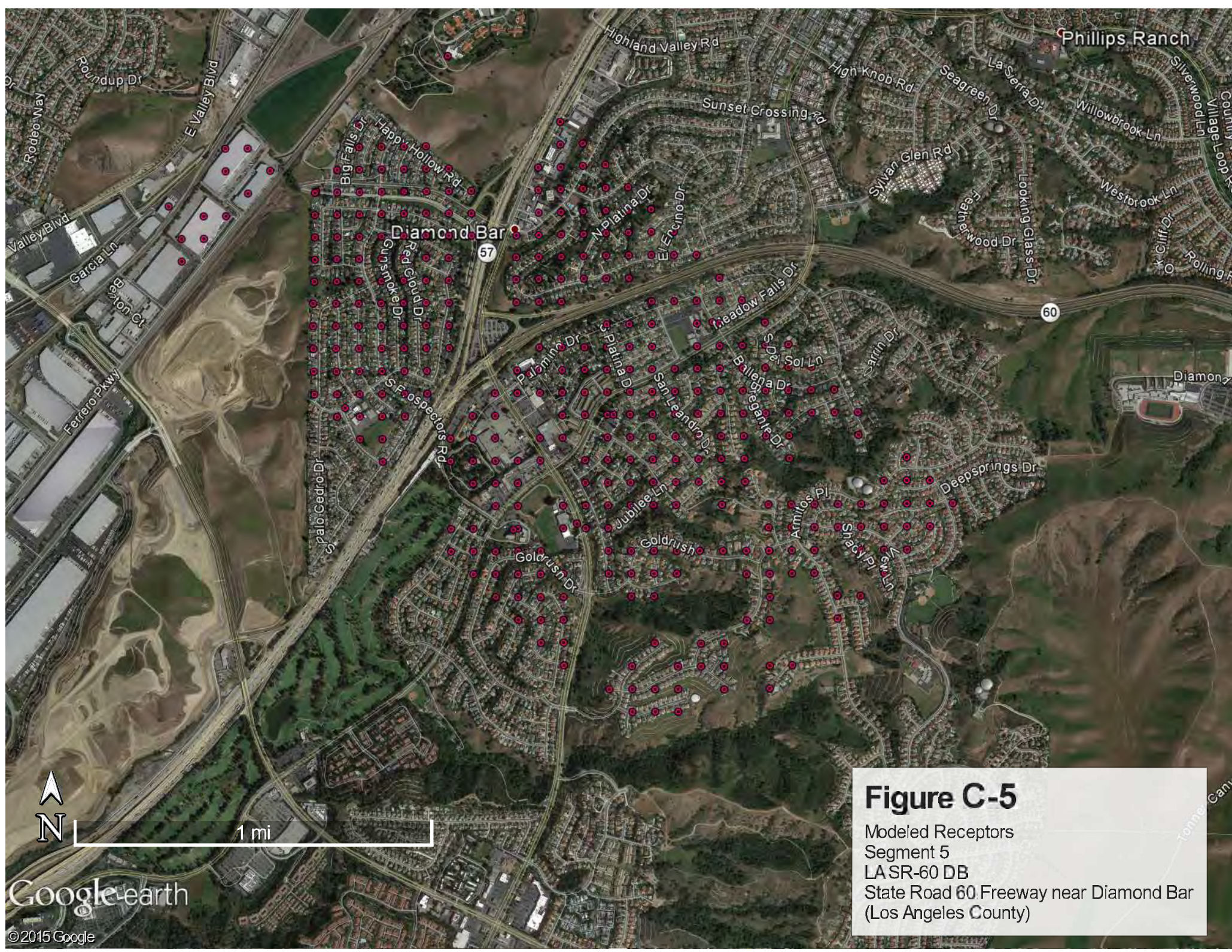
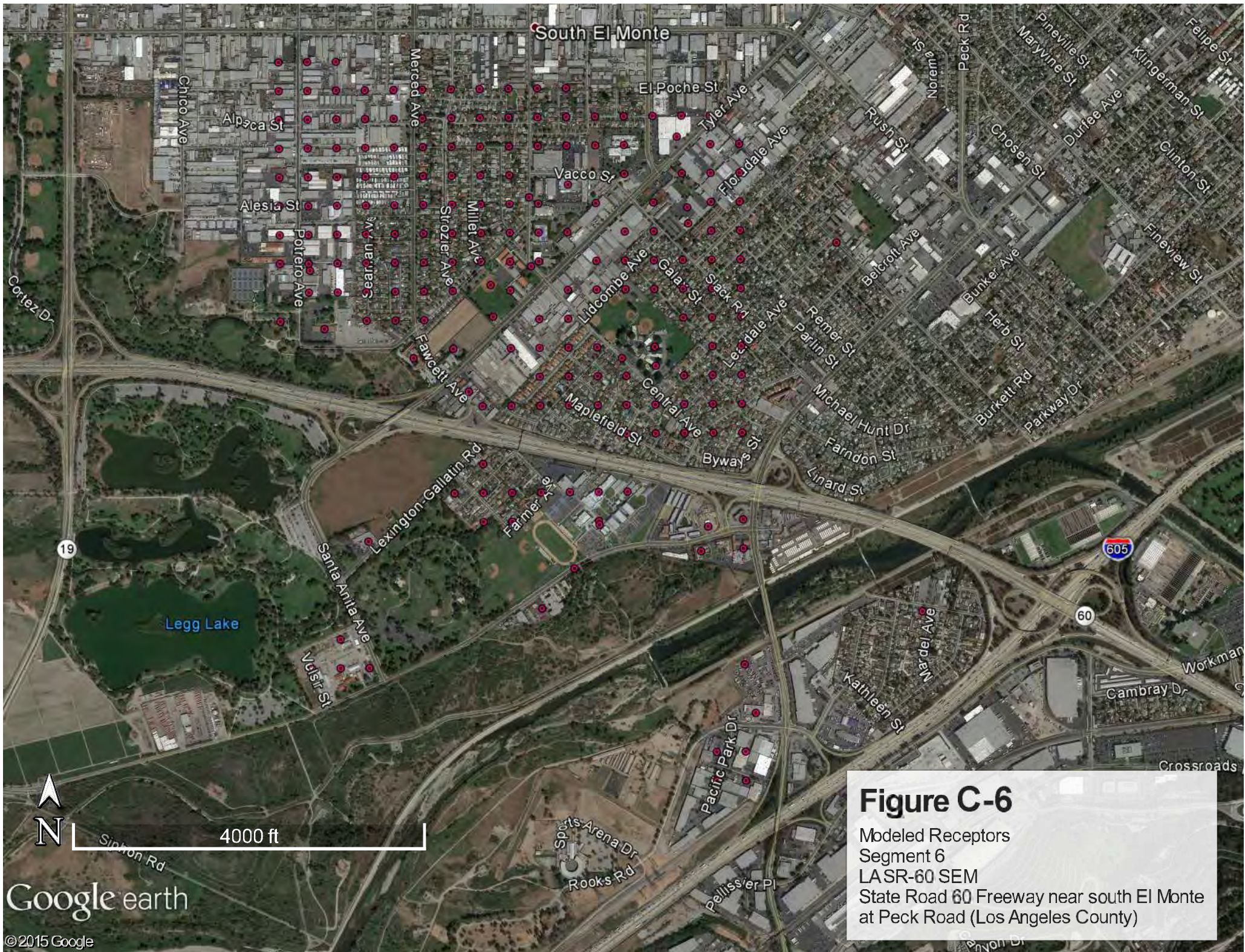


Figure C-5
Modeled Receptors
Segment 5
LASR-60 DB
State Road 60 Freeway near Diamond Bar
(Los Angeles County)



South El Monte

Legg Lake

Figure C-6
Modeled Receptors
Segment 6
LASR-60 SEM
State Road 60 Freeway near south El Monte
at Peck Road (Los Angeles County)

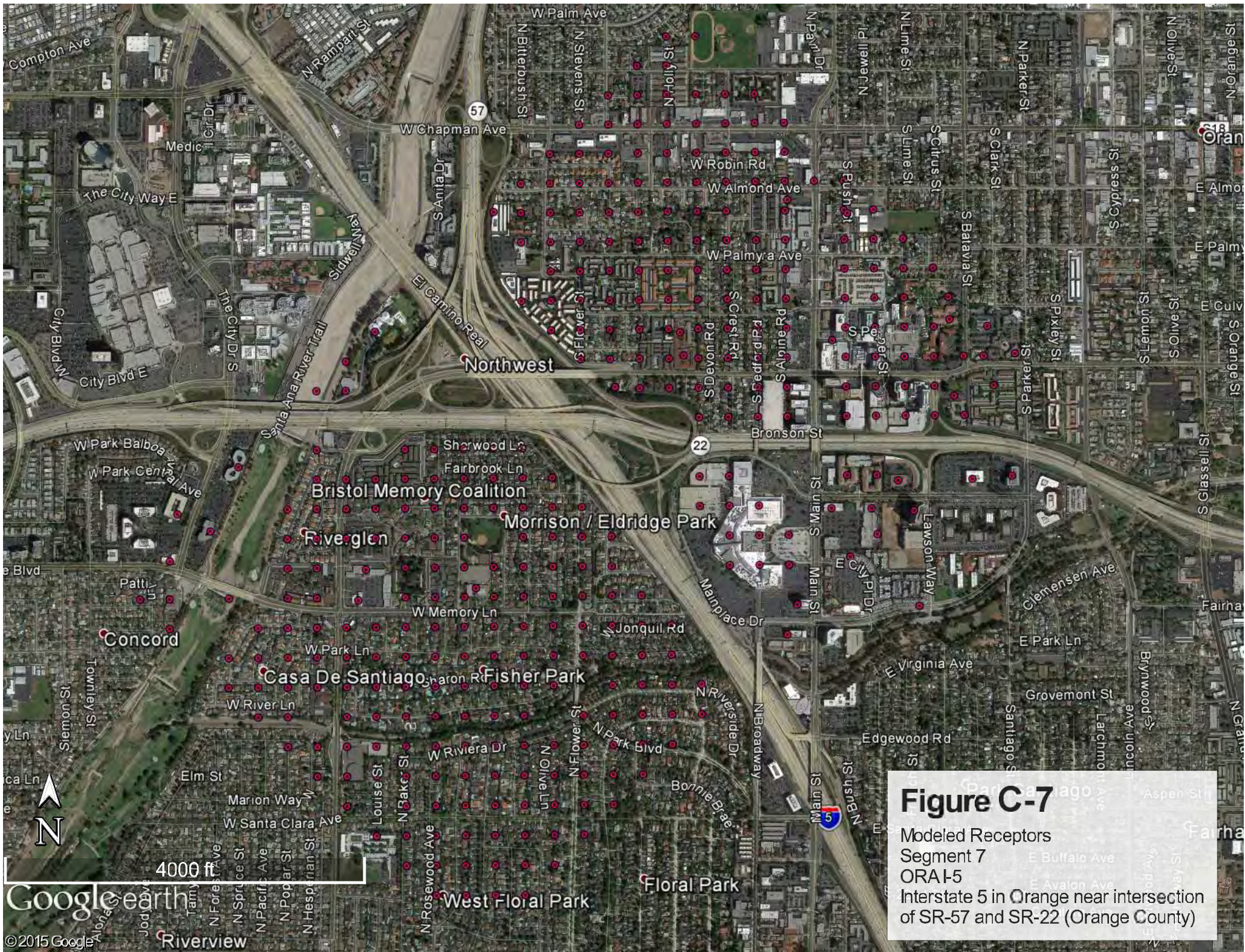


Figure C-7
 Modeled Receptors
 Segment 7
 ORA-I5
 Interstate 5 in Orange near intersection
 of SR-57 and SR-22 (Orange County)

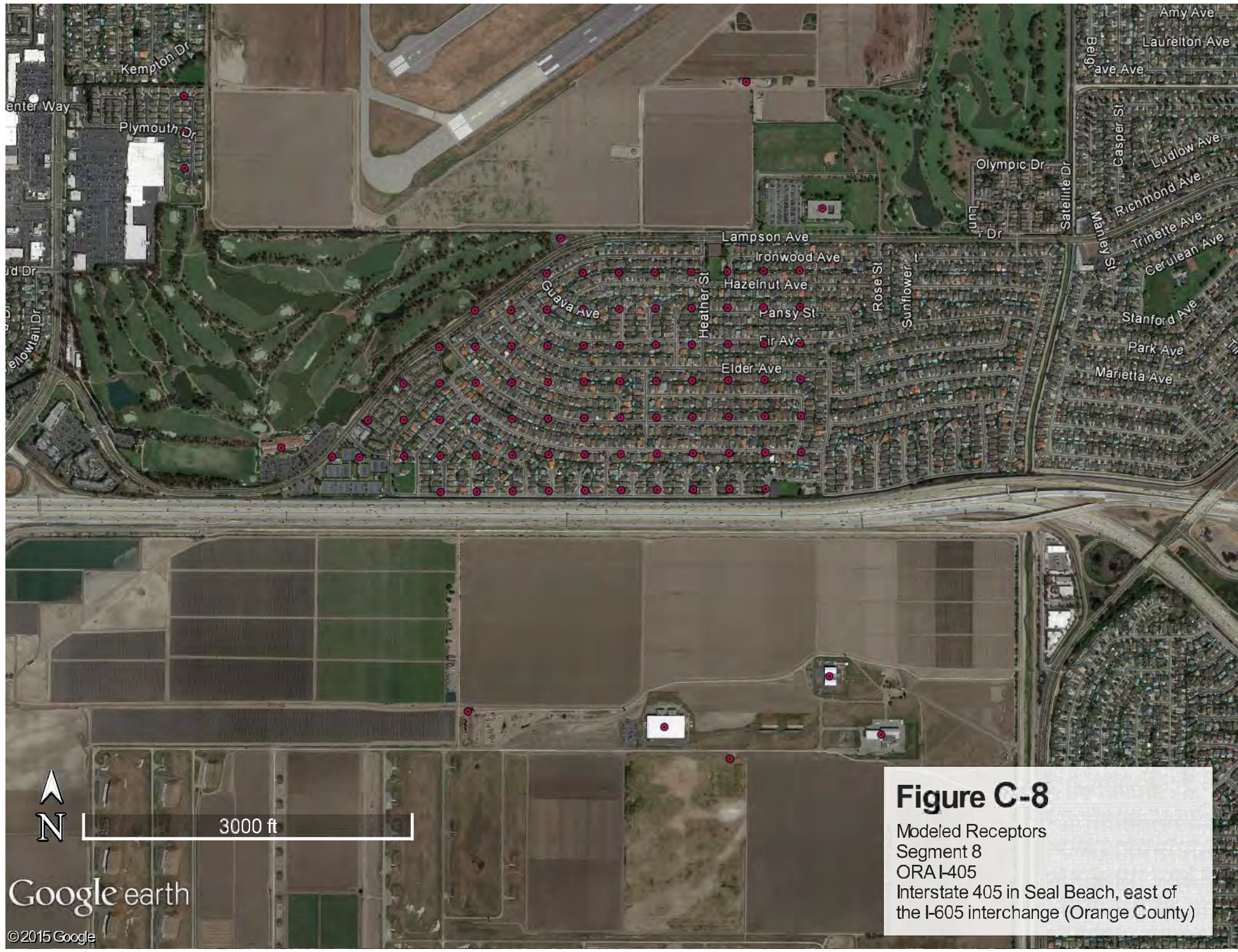


Figure C-8
Modeled Receptors
Segment 8
ORA I-405
Interstate 405 in Seal Beach, east of
the I-605 interchange (Orange County)

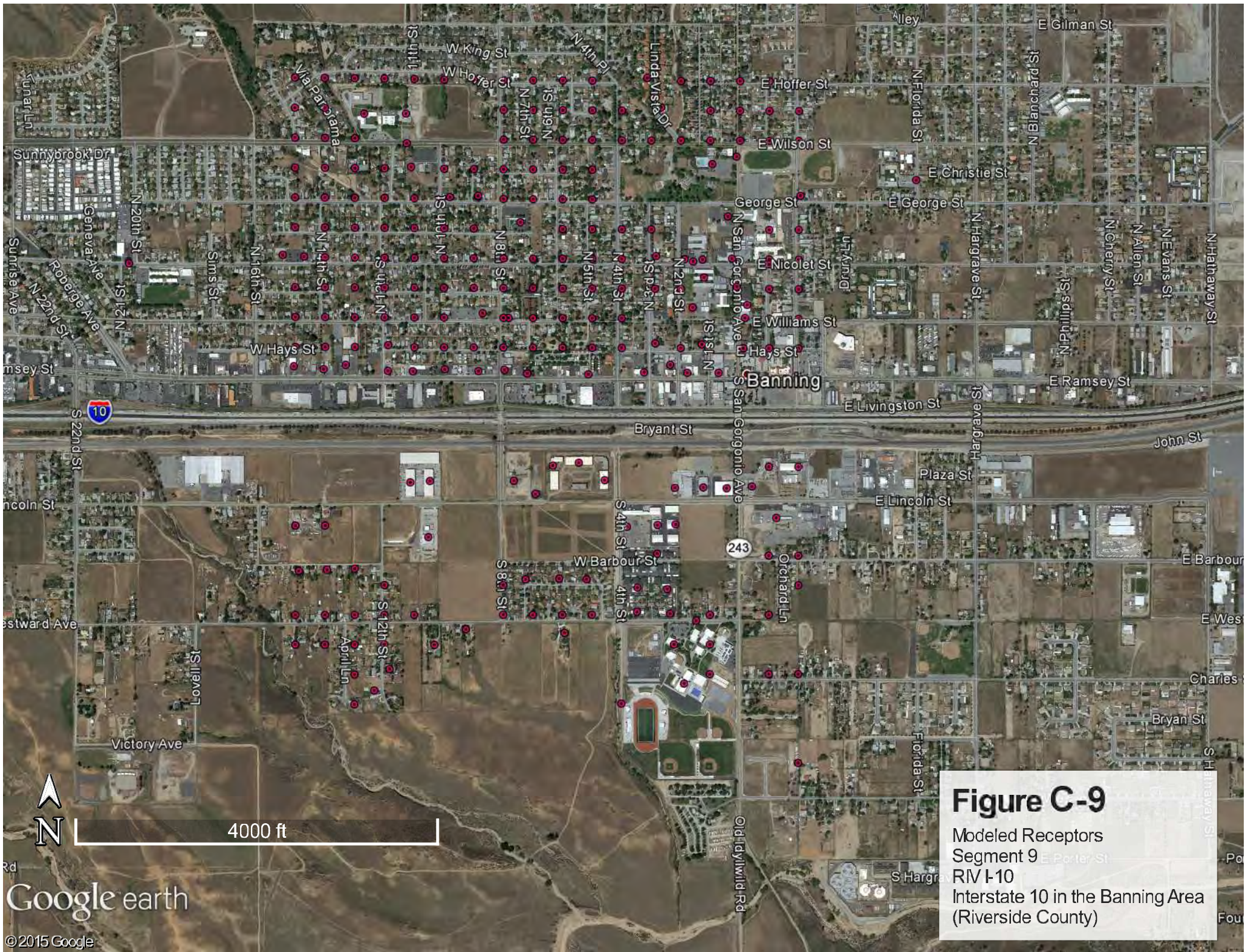
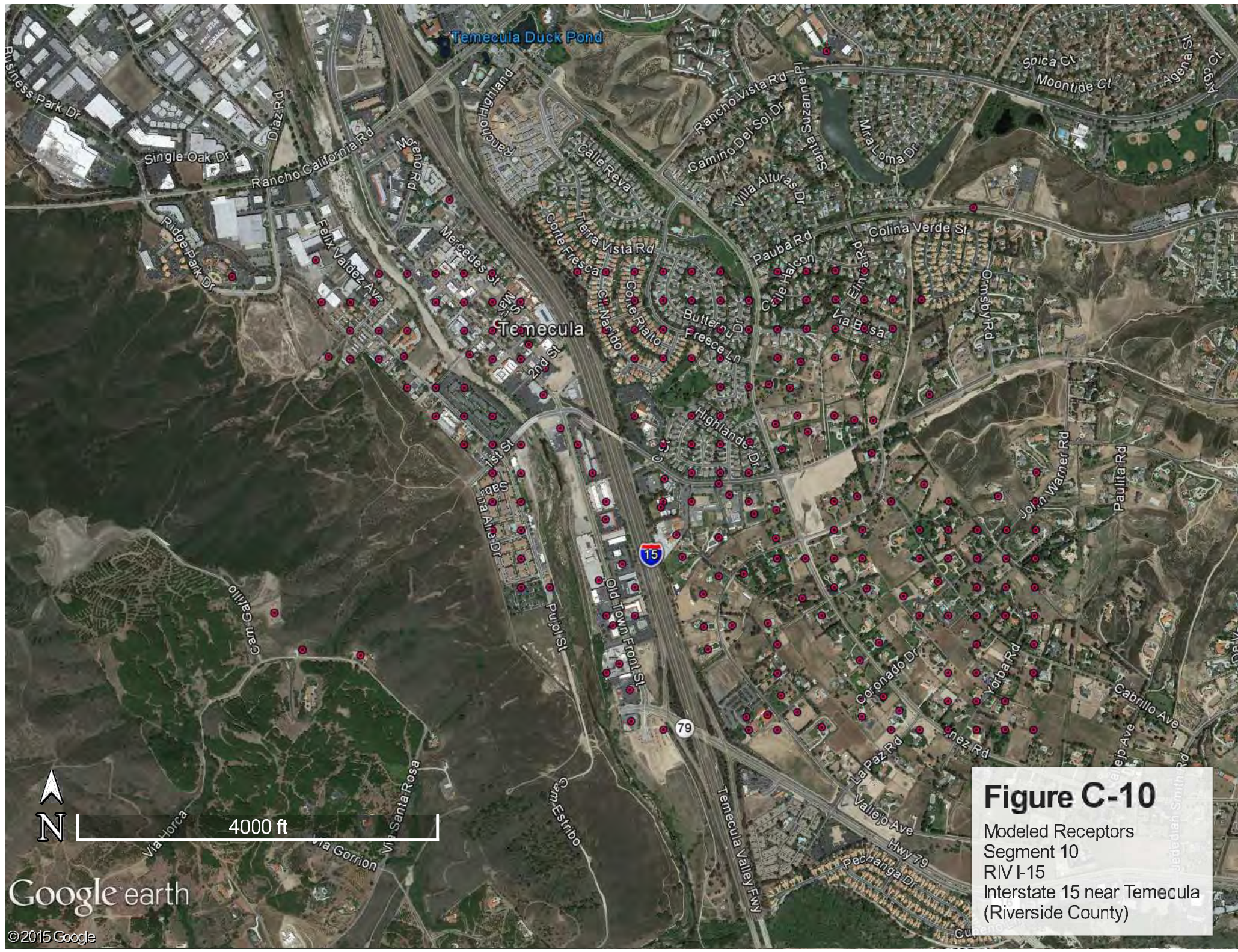
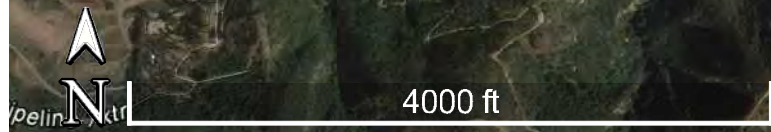
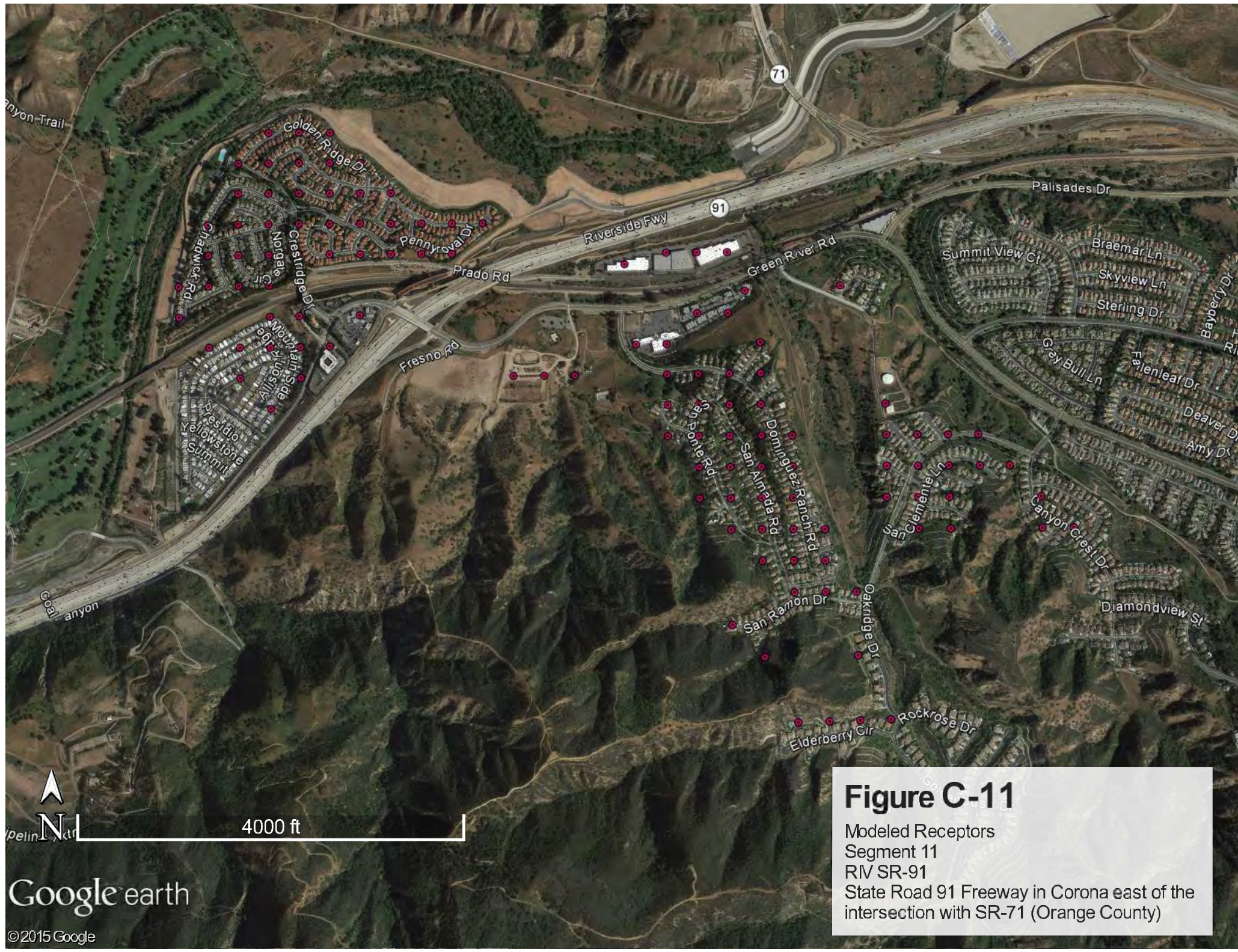


Figure C-9
 Modeled Receptors
 Segment 9
 RIV I-10
 Interstate 10 in the Banning Area
 (Riverside County)



Google earth

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Google earth

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Figure C-11
 Modeled Receptors
 Segment 11
 RIV SR-91
 State Road 91 Freeway in Corona east of the
 intersection with SR-71 (Orange County)

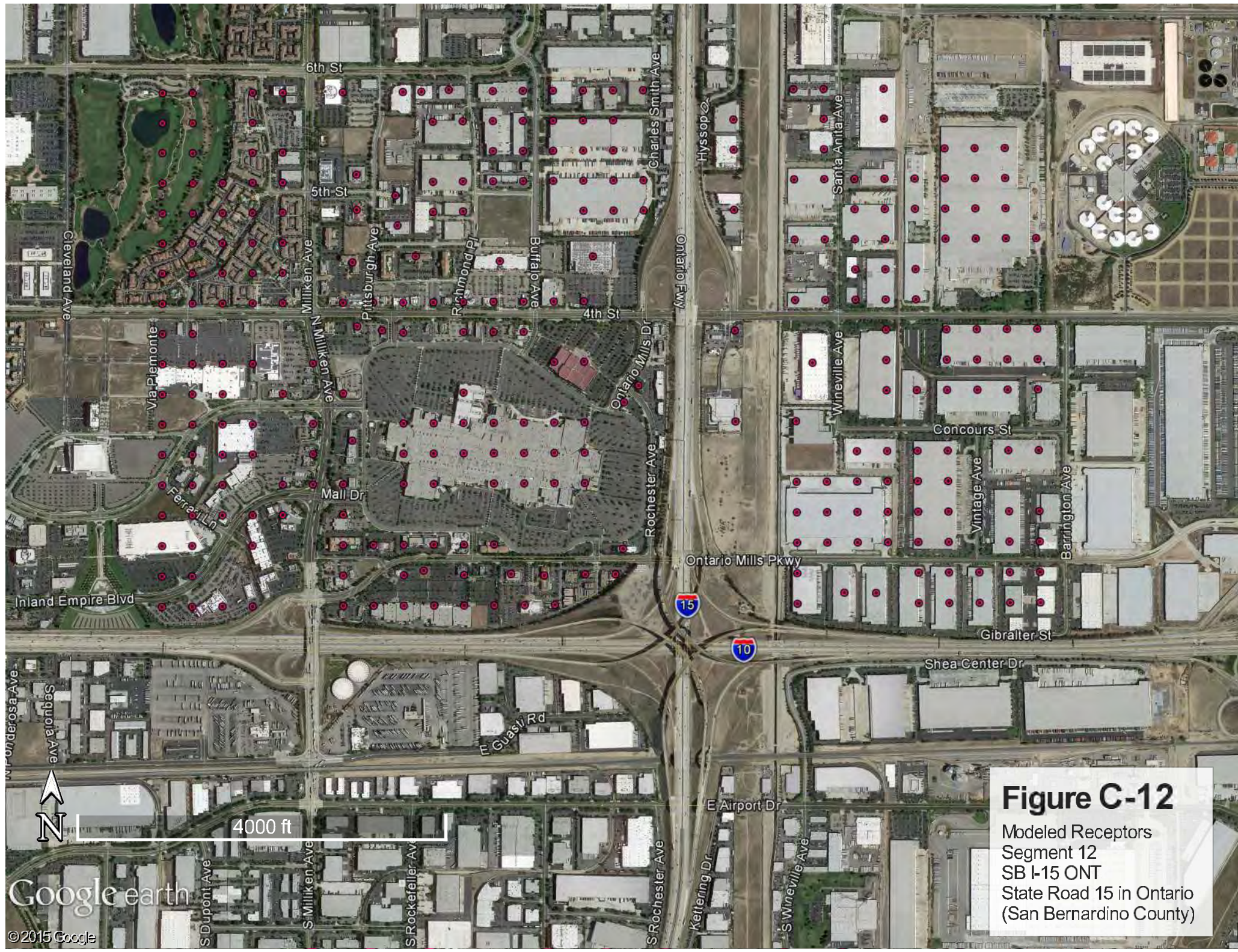


Figure C-12
 Modeled Receptors
 Segment 12
 SB I-15 ONT
 State Road 15 in Ontario
 (San Bernardino County)

Google earth

© 2015 Google



Figure C-13

Modeled Receptors
Segment 13
SB I-15 VIC
State Road 15 in the Victorville area
(San Bernardino County)

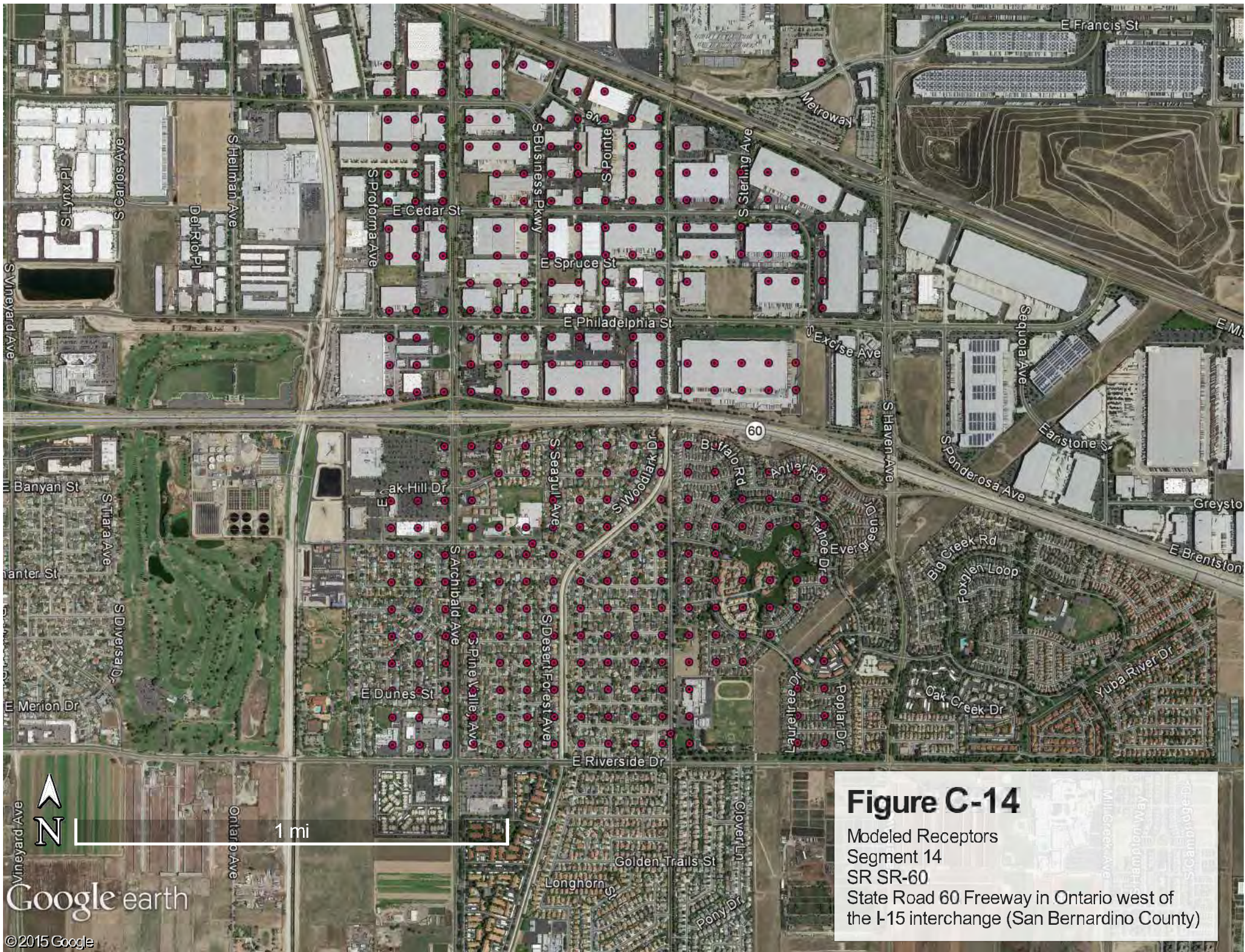


Figure C-14
 Modeled Receptors
 Segment 14
 SR SR-60
 State Road 60 Freeway in Ontario west of
 the I-15 interchange (San Bernardino County)

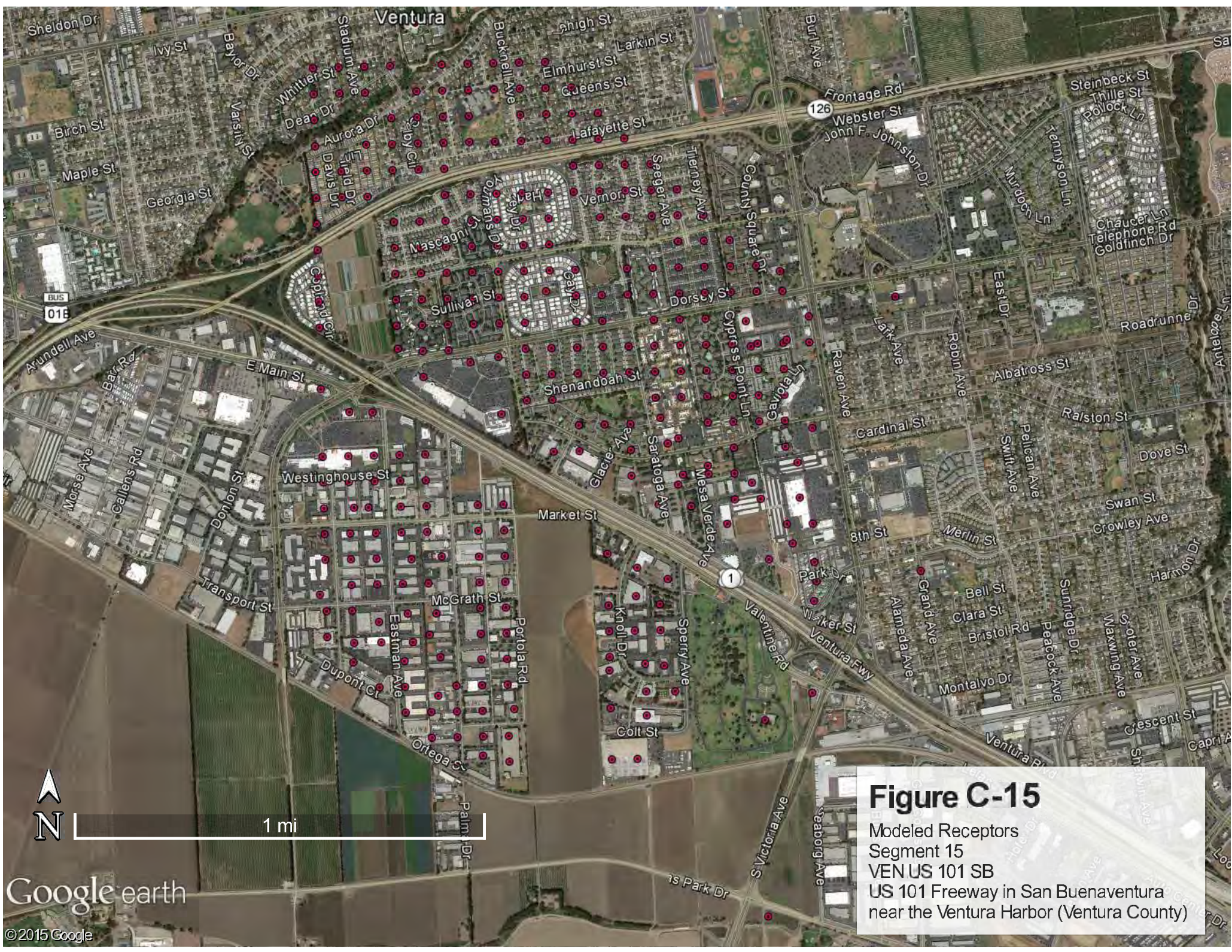


Figure C-15
Modeled Receptors
Segment 15
VEN US 101 SB
US 101 Freeway in San Buenaventura
near the Ventura Harbor (Ventura County)

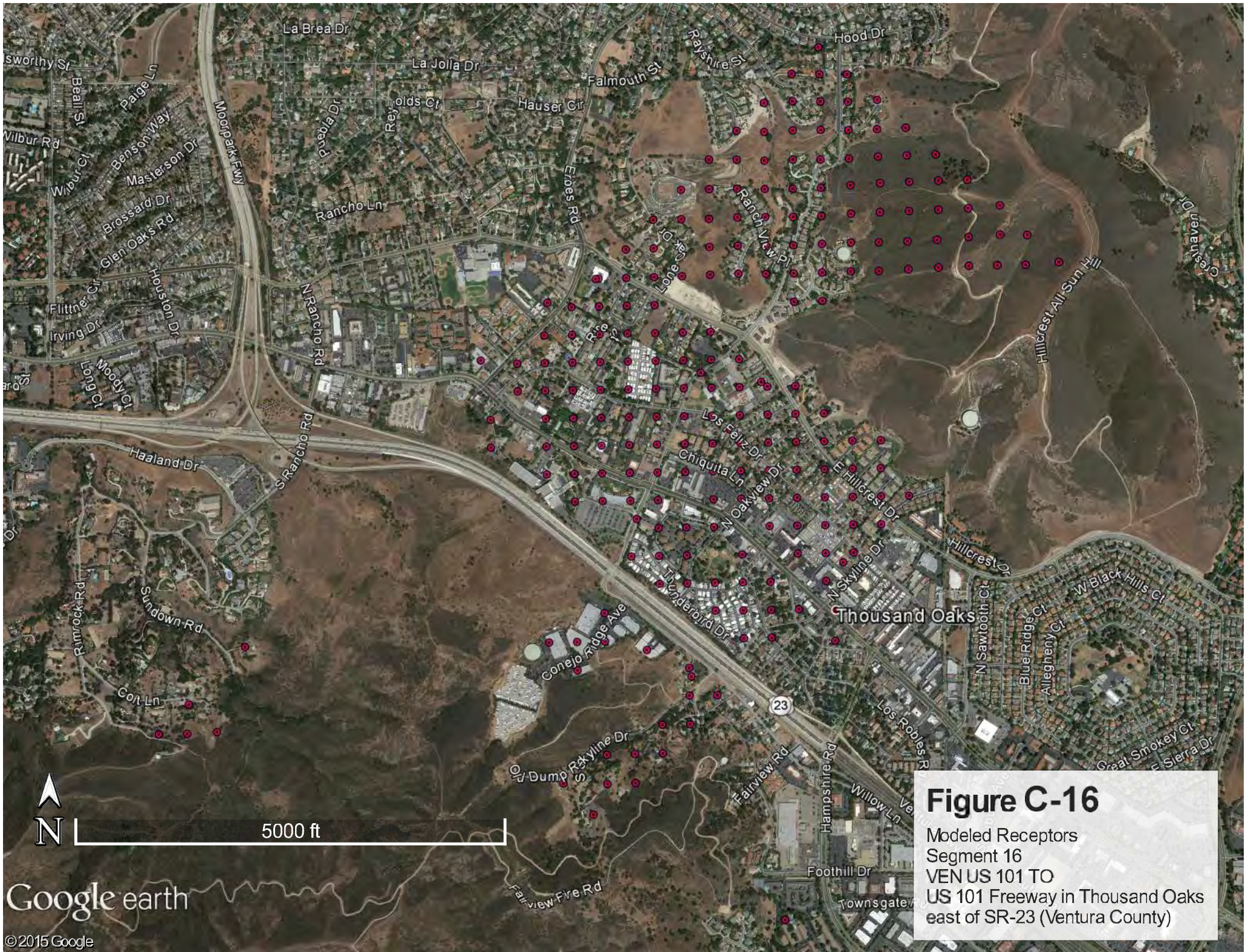


Figure C-16
Modeled Receptors
Segment 16
VEN US 101 TO
US 101 Freeway in Thousand Oaks
east of SR-23 (Ventura County)

Google earth

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APPENDIX D

Health Risk Calculations for Each Transportation Segment and Evaluation Simulation

Example Risk Calculations
Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

References are to the OEHAA *Air Toxic Hot Spots Program, Risk Assessment Guidelines, February 2015*; unless other wise noted.

1.0 Residential Risk Calculation

PMI Residential Concentration (Conc)	0.0123	ug/m3	MEIR	(Example Concentration)
DPM Cancer Potency Factor (CPF)	1.1	(mg/kg-day) ⁻¹	from http://oehha.ca.gov/air/hot_spots/2009/AppendixA.pdf	
Breathing Rates are 95th Percentile (Tbl 5.6)			Fraction of Time at Home (Tbl 8.4)	Age Sensitivity Factors (Tbl 8.3)
Breathing Rate 3rd Trimester	361	L/kg-day	1 Fraction Home 3rd Trimester	10
Breathing Rate 0 to <2 yrs	1090	L/kg-day	1 Fraction Home 0 to <2 yrs	10
Breathing Rate 2 to <16 yrs	745	L/kg-day	1 Fraction Home 2 to <16 yrs	3
Breathing Rate 16 to <70 yrs	290	L/kg-day	0.73 Fraction Home 16 to <70 yrs	1
Breathing Rate 2 to <9 yrs	861	L/kg-day	1 Fraction Home 2 to <9 yrs	3
Breathing Rate 16 to <30 yrs	335	L/kg-day	0.73 Fraction Home 16 to <30 yrs	1
Cancer Risk 3rd Trimester	1.67E-07	Conc x Breathe Rate x 1E-06 x 350/365 x Fraction Home x CPF x 0.25/70 x Age Sensitivity		
Cancer Risk 0 to <2yrs	4.04E-06	Conc x Breathe Rate x 1E-06 x 350/365 x Fraction Home x CPF x 2/70 x Age Sensitivity		
Cancer Risk 2 to <16 yrs	5.80E-06	Conc x Breathe Rate x 1E-06 x 350/365 x Fraction Home x CPF x 14/70 x Age Sensitivity		
Cancer Risk 16 to <70 yrs	2.12E-06	Conc x Breathe Rate x 1E-06 x 350/365 x Fraction Home x CPF x 54/70 x Age Sensitivity		
Cancer Risk 2 to <9 yrs	3.35E-06	Conc x Breathe Rate x 1E-06 x 350/365 x Fraction Home x CPF x 7/70 x Age Sensitivity		
Cancer Risk 16 to <30 yrs	6.35E-07	Conc x Breathe Rate x 1E-06 x 350/365 x Fraction Home x CPF x 14/70 x Age Sensitivity		
9-year Risk	7.56E-06	3rd Trimester + 0 to 2 year risk + 2 to 9 year risk		
30-year Risk	1.06E-05	3rd Trimester + 0 to 2 year risk + 2 to 16 year risk + 16 to 30 year risk		
70-year Risk	1.21E-05	3rd Trimester + 0 to 2 year risk + 2 to 16 year risk + 16 to 70 year risk		

2.0 Off-Site Worker Risk Calculation

Assumes that there a worker could be pregnant while working.
25-year working duration at a single location (starting at age 16) per Guidance Section 8.2.4.
Includes day care, hospital, senior center, school workers.

PMI Worker Concentration (Conc)	0.0741	ug/m3	MEIW	(Example Concentration)
Breathing Rates are 95th Percentile				Age Sensitivity Factors (Tbl 8.3)
Breathing Rate 3rd Trimester	240	L/kg-day	Tbl 5.8, mod. intensity, Age 16-30 per note a.	10
8-hour Breathing Rate 16 to 70 years	230	L/kg-day	Tbl 5.8, mod. intensity, Age 16-70	1
Cancer Risk 3rd Trimester	4.79E-07	Conc x Breathe Rate x 1E-06 x 250/365 x CPF x 0.25/70 x Age Sensitivity [5 days/wk x 50 wk/yr]		
Cancer Risk 16 to <70 yrs	4.59E-06	Conc x Breathe Rate x 1E-06 x 250/365 x CPF x 25/70 x Age Sensitivity [5 days/wk x 50 wk/yr]		
Cancer Risk for 25 working years	5.06E-06	3rd Trimester + 25 years of risk		

Scenario 1: 2012 Base Year (2012BY), Existing Conditions
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

			Fraction of Time at Home	Age Sensitivity Factors
Residential Breathing Rates are 95th Percentile				
Breathing Rate 3rd Trimester	361	L/kg-day	1	10
Breathing Rate 0 to <2 yrs	1090	L/kg-day	1	10
Breathing Rate 2 to <16 yrs	745	L/kg-day	1	3
Breathing Rate 16 to <70 yrs	290	L/kg-day	0.73	1
Breathing Rate 2 to <9 yrs	861	L/kg-day	1	3
Breathing Rate 16 to <30 yrs	335	L/kg-day	0.73	1
Off-site Worker Breathing Rates are 95th Percentile				
Breathing Rate 3rd Trimester	240	L/kg-day		10
8-hour Breathing Rate 16 to 70 years	230	L/kg-day		1
Day Care and School Breathing Rates are 95th Percentile				
8-hour Breathing Rate 0 to <2 years	1200	L/kg-day		10
8-hour Breathing Rate 2 to <9 years	640	L/kg-day		3
8-hour Breathing Rate 2 to <16 years	520	L/kg-day		3
DPM Cancer Potency	1.1	(mg/kg-day) ⁻¹		
Percentage Risk Increase over DPM	5%			

For additional compounds emitted from vehicles (acetaldehyde, benzene, 1,3-butadiene, formaldehyde)

NR = No Receptor for the category within 1000 m of the freeway.

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals				
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)				
1	IMP I-8 Interstate 8 just east of El Centro	2012_2035 PDEIR Segment	Imperial	East	MEIR	635500.00	3627200.00	1298	3.97E-05	5.16E-02	1.38E-01	119.3	125.3	84.8	89.0	136.0	142.8				
				West	MEIR	635500.00	3627200.00	1985	4.35E-05	8.63E-02											
				East	MEIW	635408.70	3627026.00	1588	3.97E-05	6.31E-02	1.19E-01	8.1	8.5	--	--	--	--	--	--		
				West	MEIW	635408.70	3627026.00	1280	4.35E-05	5.57E-02											
				East	Day Care	636187.90	3627252.00	455	3.97E-05	1.81E-02	4.96E-02	16.9	17.8	--	--	--	--	--	--	--	
				West	Day Care	636187.90	3627252.00	725	4.35E-05	3.15E-02											
				East	School	635173.30	3627462.00	301	3.97E-05	1.20E-02											
				West	School	635173.30	3627462.00	334	4.35E-05	1.45E-02	2.65E-02	2.1	2.2	--	--	--	--	--	--	--	
				East	Senior Center	NR	NR	--	3.97E-05	--											
				West	Senior Center	NR	NR	--	4.35E-05	--											
2	IMP SR-78 State Road 78 Freeway in Westmorland	Additional Segment	Imperial	East	MEIR	628500.00	3656200.00	2421	1.96E-05	4.74E-02	9.07E-02	78.5	82.4	55.8	58.5	89.4	93.9				
				West	MEIR	628500.00	3656200.00	2189	1.98E-05	4.33E-02											
				East	MEIW	628138.20	3656220.00	3479	1.96E-05	6.81E-02	1.26E-01	8.6	9.1	--	--	--	--	--	--		
				West	MEIW	628138.20	3656220.00	2936	1.98E-05	5.81E-02											
				East	Day Care	628837.80	3656150.00	1475	1.96E-05	2.89E-02	5.64E-02	19.2	20.2	--	--	--	--	--	--	--	
				West	Day Care	628837.80	3656150.00	1393	1.98E-05	2.76E-02											
				East	School	628711.80	3656414.00	785	1.96E-05	1.54E-02	3.18E-02	2.5	2.6	--	--	--	--	--	--	--	
				West	School	628711.80	3656414.00	830	1.98E-05	1.64E-02											
				East	Senior Center	628456.30	3656145.00	1447	1.96E-05	2.83E-02	5.53E-02	7.6	7.9	--	--	--	--	--	--	--	
				West	Senior Center	628456.30	3656145.00	1361	1.98E-05	2.69E-02											
3	LA I-110 Interstate 110 in Carson	Additional Segment	Los Angeles	North	MEIR	380800.00	3743500.00	950	3.40E-04	3.23E-01	7.30E-01	632.0	663.6	448.9	471.4	720.1	756.1				
				South	MEIR	380800.00	3743500.00	1237	3.30E-04	4.08E-01											
				North	MEIW	380800.00	3743600.00	938	3.40E-04	3.19E-01	7.21E-01	49.3	51.8	--	--	--	--	--	--		
				South	MEIW	380800.00	3743600.00	1221	3.30E-04	4.02E-01											
				North	Day Care	381383.10	3744323.00	123	3.40E-04	4.18E-02	8.10E-02	27.6	29.0	--	--	--	--	--	--	--	
				South	Day Care	381383.10	3744323.00	119	3.30E-04	3.92E-02											
				North	School	381001.20	3743694.00	667	3.40E-04	2.27E-01	4.16E-01	32.3	33.9	--	--	--	--	--	--	--	
				South	School	381001.20	3743694.00	574	3.30E-04	1.89E-01											
				North	Senior Center	380506.70	3743721.00	210	3.40E-04	7.14E-02	1.45E-01	19.8	20.7	--	--	--	--	--	--	--	
				South	Senior Center	380506.70	3743721.00	222	3.30E-04	7.32E-02											

Scenario 1: 2012 Base Year (2012BY), Existing Conditions
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

NR = No Receptor for the category within 1000 m of the freeway.

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals				
4	LA I-710 Interstate 710 in Compton, north of the intersection with SR 91	2012_2035 PDEIR Segment	Los Angeles	North	MEIR	390000.00	3750700.00	579	8.18E-04	4.73E-01	9.32E-01	806.6	847.0	573.0	601.6	919.1	965.1				
				South	MEIR	390000.00	3750700.00	682	6.73E-04	4.59E-01											
				North	MEIW	390428.00	3751262.00	324	8.18E-04	2.65E-01	4.61E-01	31.5	33.1	--	--	--	--	--	--		
				South	MEIW	390428.00	3751262.00	291	6.73E-04	1.96E-01											
				North	Day Care	389795.00	3751313.00	164	8.18E-04	1.34E-01	2.53E-01	86.1	90.4	--	--	--	--	--	--	--	
				South	Day Care	389795.00	3751313.00	176	6.73E-04	1.18E-01											
				North	School	389951.66	3751333.90	258	8.18E-04	2.11E-01	4.04E-01	31.3	32.9	--	--	--	--	--	--	--	
				South	School	389951.66	3751333.90	287	6.73E-04	1.93E-01											
				North	Senior Center	391265.90	3750525.00	44.81	8.18E-04	3.66E-02	6.60E-02	9.0	9.5	--	--	--	--	--	--	--	
				South	Senior Center	391265.90	3750525.00	43.56	6.73E-04	2.93E-02											
5	LA SR-60 DB State Road 60 Freeway near Diamond Bar	2012_2035 PDEIR Segment	Los Angeles	East	MEIR	425800.00	3765300.00	1385	5.04E-04	6.97E-01	1.21E+00	1048.7	1101.2	744.9	782.2	1195.0	1254.8				
				West	MEIR	425800.00	3765300.00	974	5.28E-04	5.15E-01											
				East	MEIW	425200.00	3765000.00	909	5.04E-04	4.58E-01	8.64E-01	59.0	62.0	--	--	--	--	--	--		
				West	MEIW	425200.00	3765000.00	768	5.28E-04	4.06E-01											
				East	Day Care	425255.30	3764985.00	679	5.04E-04	3.42E-01	6.58E-01	224.3	235.6	--	--	--	--	--	--	--	
				West	Day Care	425255.30	3764985.00	598	5.28E-04	3.16E-01											
				East	School	425626.70	3764800.00	242	5.04E-04	1.22E-01	2.41E-01	18.7	19.6	--	--	--	--	--	--	--	
				West	School	425626.70	3764800.00	225	5.28E-04	1.19E-01											
				East	Senior Center	NR	NR	--	5.04E-04	--	--	--	--	--	--	--	--	--	--	--	--
				West	Senior Center	NR	NR	--	5.28E-04	--											
6	LA SR-60 SEM State Road 60 Freeway near south El Monte at Peck Road	Additional Segment	Los Angeles	East	MEIR	403200.00	3767100.00	628	5.50E-04	3.46E-01	8.40E-01	726.8	763.1	516.2	542.0	828.1	869.5				
				West	MEIR	403200.00	3767100.00	828	5.97E-04	4.94E-01											
				East	MEIW	403700.00	3766800.00	787	5.50E-04	4.33E-01	7.79E-01	53.3	55.9	--	--	--	--	--	--		
				West	MEIW	403700.00	3766800.00	580	5.97E-04	3.46E-01											
				East	Day Care	403373.30	3767584.00	108	5.50E-04	5.94E-02	1.28E-01	43.7	45.9	--	--	--	--	--	--	--	
				West	Day Care	403373.30	3767584.00	115	5.97E-04	6.87E-02											
				East	School	403685.00	3767262.00	188	5.50E-04	1.03E-01	2.27E-01	17.6	18.5	--	--	--	--	--	--	--	
				West	School	403685.00	3767262.00	207	5.97E-04	1.24E-01											
				East	Senior Center	403368.40	3767822.00	70.44	5.50E-04	3.88E-02	8.29E-02	11.3	11.9	--	--	--	--	--	--	--	
				West	Senior Center	403368.40	3767822.00	73.95	5.97E-04	4.41E-02											
7	ORA I-5 Interstate 5 in Orange near intersection of SR-57 and SR-22	Additional Segment	Orange	North	MEIR	419000.00	3737600.00	409	6.85E-04	2.80E-01	5.01E-01	433.3	455.0	307.8	323.2	493.7	518.4				
				South	MEIR	419000.00	3737600.00	477	4.62E-04	2.20E-01											
				North	MEIW	419400.00	3737500.00	290	6.85E-04	1.99E-01	3.11E-01	21.2	22.3	--	--	--	--	--	--		
				South	MEIW	419400.00	3737500.00	242	4.62E-04	1.12E-01											
				North	Day Care	418539.00	3737429.00	76.2	6.85E-04	5.22E-02	8.77E-02	29.9	31.4	--	--	--	--	--	--	--	
				South	Day Care	418539.00	3737429.00	76.68	4.62E-04	3.54E-02											
				North	School	419811.55	3738689.28	33.07	6.85E-04	2.27E-02	3.76E-02	2.9	3.1	--	--	--	--	--	--	--	
				South	School	419811.55	3738689.28	32.34	4.62E-04	1.49E-02											
				North	Senior Center	419249.90	3738210.00	111	6.85E-04	7.61E-02	1.25E-01	17.1	18.0	--	--	--	--	--	--	--	
				South	Senior Center	419249.90	3738210.00	106	4.62E-04	4.90E-02											
8	ORA I-405 Interstate 405 in Seal Beach, east of the I-605 interchange	2012_2035 PDEIR Segment	Orange	North	MEIR	402000.00	3737700.00	514	1.13E-03	5.79E-01	1.26E+00	1088.1	1142.5	772.9	811.5	1239.8	1301.8				
				South	MEIR	402000.00	3737700.00	612	1.11E-03	6.79E-01											
				North	MEIW	401576.00	3737798.00	257	1.13E-03	2.90E-01	6.52E-01	44.6	46.8	--	--	--	--	--	--		
				South	MEIW	401576.00	3737798.00	327	1.11E-03	3.63E-01											
				North	Day Care	NR	NR	--	1.13E-03	--	--	--	--	--	--	--	--	--	--	--	
				South	Day Care	NR	NR	--	1.11E-03	--											
				North	School	NR	NR	--	1.13E-03	--	--	--	--	--	--	--	--	--	--	--	
				South	School	NR	NR	--	1.11E-03	--											
				North	Senior Center	NR	NR	--	1.13E-03	--	--	--	--	--	--	--	--	--	--	--	
				South	Senior Center	NR	NR	--	1.11E-03	--											

Scenario 1: 2012 Base Year (2012BY), Existing Conditions
Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

NR = No Receptor for the category within 1000 m of the freeway.

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals	
9	RIV I-10 Interstate 10 in the Banning Area	Additional Segment	Riverside	East	MEIR	511000.00	3754000.00	199	3.89E-04	7.75E-02								
				West	MEIR	511000.00	3754000.00	232	3.88E-04	9.00E-02	1.67E-01	144.9	152.1	102.9	108.0	165.1	173.3	
				East	MEIW	510886.80	3753911.00	367	3.89E-04	1.43E-01								
				West	MEIW	510886.80	3753911.00	450	3.88E-04	1.75E-01	3.17E-01	21.7	22.8	--	--	--	--	
				East	Day Care	510600.00	3754100.00	87.49	3.89E-04	3.41E-02	7.32E-02	25.0	26.2	--	--	--	--	
				West	Day Care	510600.00	3754100.00	101	3.88E-04	3.92E-02								
				East	School	511389.70	3754208.00	81.51	3.89E-04	3.17E-02	6.64E-02	5.2	5.4	--	--	--	--	
				West	School	511389.70	3754208.00	89.38	3.88E-04	3.47E-02								
				East	Senior Center	511164.70	3753944.00	290	3.89E-04	1.13E-01	2.49E-01	34.0	35.7	--	--	--	--	
				West	Senior Center	511164.70	3753944.00	351	3.88E-04	1.36E-01								
10	RIV I-15 Interstate 15 near Temecula	Additional Segment	Riverside	North	MEIR	486867.30	3705207.00	983	2.40E-04	2.36E-01	4.03E-01	349.0	366.5	247.9	260.3	397.7	417.6	
				South	MEIR	486867.30	3705207.00	718	2.34E-04	1.68E-01								
				North	MEIW	486700.00	3705100.00	1070	2.40E-04	2.56E-01	6.63E-01	45.3	47.6	--	--	--	--	
				South	MEIW	486700.00	3705100.00	1740	2.34E-04	4.07E-01								
				North	Day Care	486327.80	3705951.00	412	2.40E-04	9.87E-02	2.26E-01	77.1	81.0	--	--	--	--	
				South	Day Care	486327.80	3705951.00	545	2.34E-04	1.27E-01								
				North	School	486791.50	3705381.00	1179	2.40E-04	2.82E-01	4.81E-01	37.3	39.2	--	--	--	--	
				South	School	486791.50	3705381.00	848	2.34E-04	1.98E-01								
				North	Senior Center	NR	NR	--	2.40E-04	--	--	--	--	--	--	--		
				South	Senior Center	NR	NR	--	2.34E-04	--	--	--	--	--	--	--		
11	RIV SR-91 State Road 91 Freeway in Corona, east of the intersection with SR-71	2012_2035 PDEIR Segment	Riverside	East	MEIR	439300.00	3749100.00	594	7.55E-04	4.48E-01	1.03E+00	892.0	936.6	633.6	665.3	1016.5	1067.3	
				West	MEIR	439300.00	3749100.00	687	8.48E-04	5.83E-01								
				East	MEIW	439864.00	3749063.00	761	7.55E-04	5.74E-01	1.09E+00	74.8	78.5	--	--	--	--	
				West	MEIW	439864.00	3749063.00	613	8.48E-04	5.20E-01								
				East	Day Care	NR	NR	--	7.55E-04	--	--	--	--	--	--	--		
				West	Day Care	NR	NR	--	8.48E-04	--	--	--	--	--	--	--		
				East	School	NR	NR	--	7.55E-04	--	--	--	--	--	--	--		
				West	School	NR	NR	--	8.48E-04	--	--	--	--	--	--	--		
				East	Senior Center	NR	NR	--	7.55E-04	--	--	--	--	--	--	--		
				West	Senior Center	NR	NR	--	8.48E-04	--	--	--	--	--	--	--		
12	SB I-15 ONT ¹ Interstate 15 in Ontario	2012_2035 PDEIR Segment	San Bernardino	North	MEIR	449500.00	3771200.00	389	2.95E-04	1.15E-01	2.60E-01	224.8	236.0	159.6	167.6	256.1	268.9	
				South	MEIR	449500.00	3771200.00	487	2.98E-04	1.45E-01								
				North	MEIW	449500.00	3771200.00	389	2.95E-04	1.15E-01	2.60E-01	17.8	18.6	--	--	--	--	
				South	MEIW	449500.00	3771200.00	487	2.98E-04	1.45E-01								
				North	Day Care	NR	NR	--	2.95E-04	--	--	--	--	--	--	--		
				South	Day Care	NR	NR	--	2.98E-04	--	--	--	--	--	--	--		
				North	School	NR	NR	--	2.95E-04	--	--	--	--	--	--	--		
				South	School	NR	NR	--	2.98E-04	--	--	--	--	--	--	--		
				North	Senior Center	NR	NR	--	2.95E-04	--	--	--	--	--	--	--		
				South	Senior Center	NR	NR	--	2.98E-04	--	--	--	--	--	--	--		
13	SB I-15 VIC Interstate 15 in the Victorville area	Additional Segment	San Bernardino	North	MEIR	470800.00	3820500.00	1443	1.65E-04	2.38E-01	5.77E-01	499.4	524.3	354.7	372.4	569.0	597.5	
				South	MEIR	470800.00	3820500.00	2122	1.60E-04	3.39E-01								
				North	MEIW	471100.00	3820700.00	1021	1.65E-04	1.68E-01	3.05E-01	20.8	21.9	--	--	--	--	
				South	MEIW	471100.00	3820700.00	852	1.60E-04	1.36E-01								
				North	Day Care	471186.20	3820489.00	460	1.65E-04	7.58E-02	1.43E-01	48.7	51.1	--	--	--	--	
				South	Day Care	471186.20	3820489.00	419	1.60E-04	6.70E-02								
				North	School	470957.20	3821055.00	635	1.65E-04	1.05E-01	2.27E-01	17.6	18.5	--	--	--	--	
				South	School	470957.20	3821055.00	763	1.60E-04	1.22E-01								
				North	Senior Center	NR	NR	--	1.65E-04	--	--	--	--	--	--	--		
				South	Senior Center	NR	NR	--	1.60E-04	--	--	--	--	--	--	--		

Scenario 1: 2012 Base Year (2012BY), Existing Conditions
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

NR = No Receptor for the category within 1000 m of the freeway.

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals				
14	SB SR-60 State Road 60 Freeway in Ontario, west of the I-15 interchange	2012_2035 PDEIR Segment	San Bernardino	East	MEIR	446200.00	3765600.00	1005	5.30E-04	5.33E-01	8.92E-01	771.7	810.3	548.1	575.5	879.3	923.3				
				West	MEIR	446200.00	3765600.00	673	5.34E-04	3.59E-01											
				East	MEIW	445700.00	3765800.00	698	5.30E-04	3.70E-01	8.78E-01	60.0	63.0	--	--	--	--	--	--		
				West	MEIW	445700.00	3765800.00	952	5.34E-04	5.08E-01											
				East	Day Care	445523.30	3765239.00	155	5.30E-04	8.22E-02	1.58E-01	54.0	56.7	--	--	--	--	--	--	--	
				West	Day Care	445523.30	3765239.00	143	5.34E-04	7.63E-02											
				East	School	445523.30	3765239.00	155	5.30E-04	8.22E-02	1.58E-01	12.3	12.9	--	--	--	--	--	--	--	
				West	School	445523.30	3765239.00	143	5.34E-04	7.63E-02											
				East	Senior Center	NR	NR	--	5.30E-04	--	--	--	--	--	--	--	--	--	--	--	--
				West	Senior Center	NR	NR	--	5.34E-04	--	--	--	--	--	--	--	--	--	--	--	--
				15	VEN US-101 SB US 101 Freeway in San Buenaventura near the Ventura Harbor	Additional Segment	Ventura	North	MEIR	295200.00	3793400.00	741	1.28E-04	9.47E-02	1.82E-01	157.3	165.2	111.7	117.3	179.2	188.2
South	MEIR	295200.00	3793400.00					676	1.29E-04	8.71E-02											
North	MEIW	295300.00	3793200.00					1645	1.28E-04	2.10E-01	3.77E-01	25.8	27.0	--	--	--	--	--	--		
South	MEIW	295300.00	3793200.00					1293	1.29E-04	1.67E-01											
North	Day Care	296212.80	3793611.00					143	1.28E-04	1.83E-02	3.54E-02	12.1	12.7	--	--	--	--	--	--	--	
South	Day Care	296212.80	3793611.00					133	1.29E-04	1.71E-02											
North	School	295785.70	3793241.00					448	1.28E-04	5.73E-02	1.09E-01	8.4	8.9	--	--	--	--	--	--	--	
South	School	295785.70	3793241.00					400	1.29E-04	5.15E-02											
North	Senior Center	295781.00	3793062.00					790	1.28E-04	1.01E-01	1.87E-01	25.6	26.8	--	--	--	--	--	--	--	
South	Senior Center	295781.00	3793062.00					667	1.29E-04	8.59E-02											
16	VEN US-101 TO US 101 Freeway in Thousand Oaks, east of SR-23	2012_2035 PDEIR Segment	Ventura					North	MEIR	330000.00	3782700.00	1365	3.66E-04	5.00E-01	9.16E-01	792.9	832.5	563.2	591.4	903.5	948.7
				South	MEIR	330000.00	3782700.00	943	4.42E-04	4.16E-01											
				North	MEIW	329800.00	3782600.00	693	3.66E-04	2.54E-01	6.39E-01	43.7	45.9	--	--	--	--	--	--		
				South	MEIW	329800.00	3782600.00	872	4.42E-04	3.85E-01											
				North	Day Care	329921.90	3782934.00	493	3.66E-04	1.81E-01	3.67E-01	125.3	131.5	--	--	--	--	--	--	--	
				South	Day Care	329921.90	3782934.00	423	4.42E-04	1.87E-01											
				North	School	330108.20	3782369.00	459	3.66E-04	1.68E-01	4.93E-01	38.2	40.1	--	--	--	--	--	--	--	
				South	School	330108.20	3782369.00	735	4.42E-04	3.25E-01											
				North	Senior Center	329368.20	3783515.00	158	3.66E-04	5.79E-02	1.21E-01	16.6	17.4	--	--	--	--	--	--	--	
				South	Senior Center	329368.20	3783515.00	144	4.42E-04	6.36E-02											

Notes:

1. The I-15 MEIR is an assumed residential receptor at about 100 meters from the freeway because although there are no residential receptors near the segment modeled, there are a number of nearby residential receptors only 2 miles north of the modeled segment and traffic volumes are expected to be similar on I-15 where there are nearby residents.

Scenario 2: 2040 Base Line (2040BL), Future Conditions
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

			Fraction of Time at Home	Age Sensitivity Factors
Residential Breathing Rates are 95th Percentile				
Breathing Rate 3rd Trimester	361	L/kg-day	1	10
Breathing Rate 0 to <2 yrs	1090	L/kg-day	1	10
Breathing Rate 2 to <16 yrs	745	L/kg-day	1	3
Breathing Rate 16 to <70 yrs	290	L/kg-day	0.73	1
Breathing Rate 2 to <9 yrs	861	L/kg-day	1	3
Breathing Rate 16 to <30 yrs	335	L/kg-day	0.73	1
Off-site Worker Breathing Rates are 95th Percentile				
Breathing Rate 3rd Trimester	240	L/kg-day		10
8-hour Breathing Rate 16 to 70 years	230	L/kg-day		1
Day Care and School Breathing Rates are 95th Percentile				
8-hour Breathing Rate 0 to <2 years	1200	L/kg-day		10
8-hour Breathing Rate 2 to <9 years	640	L/kg-day		3
8-hour Breathing Rate 2 to <16 years	520	L/kg-day		3
DPM Cancer Potency	1.1	(mg/kg-day) ⁻¹		
Percentage Risk Increase over DPM	5%			For additional compounds emitted from vehicles (acetaldehyde, benzene, 1,3-butadiene, formaldehyde)

NR = No Receptor for the category within 1000 m of the freeway.

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals				
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)				
1	IMP I-8 Interstate 8 just east of El Centro	2012_2035 PDEIR Segment	Imperial	East	MEIR	635500.00	3627200.00	1298	2.09E-05	2.71E-02	4.88E-02	42.2	44.3	30.0	31.5	48.1	50.5				
				West	MEIR	635500.00	3627200.00	1985	1.09E-05	2.16E-02											
				East	MEIW	635408.70	3627026.00	1588	2.09E-05	3.32E-02	4.71E-02	3.2	3.4	--	--	--	--	--	--		
				West	MEIW	635408.70	3627026.00	1280	1.09E-05	1.40E-02											
				East	Day Care	636187.90	3627252.00	455	2.09E-05	9.51E-03	1.74E-02	5.9	6.2	--	--	--	--	--	--	--	
				West	Day Care	636187.90	3627252.00	725	1.09E-05	7.90E-03											
				East	School	635173.30	3627462.00	301	2.09E-05	6.29E-03	9.93E-03	0.8	0.8	--	--	--	--	--	--	--	
				West	School	635173.30	3627462.00	334	1.09E-05	3.64E-03											
				East	Senior Center	NR	NR	--	2.09E-05	--											
				West	Senior Center	NR	NR	--	1.09E-05	--											
2	IMP SR-78 State Road 78 Freeway in Westmorland	Additional Segment	Imperial	East	MEIR	628500.00	3656200.00	2421	1.52E-05	3.68E-02	7.01E-02	60.6	63.7	43.1	45.2	69.1	72.5				
				West	MEIR	628500.00	3656200.00	2189	1.52E-05	3.33E-02											
				East	MEIW	628138.20	3656220.00	3479	1.52E-05	5.29E-02	9.75E-02	6.7	7.0	--	--	--	--	--	--		
				West	MEIW	628138.20	3656220.00	2936	1.52E-05	4.46E-02											
				East	Day Care	628837.80	3656150.00	1475	1.52E-05	2.24E-02	4.36E-02	14.9	15.6	--	--	--	--	--	--	--	
				West	Day Care	628837.80	3656150.00	1393	1.52E-05	2.12E-02											
				East	School	628711.80	3656414.00	785	1.52E-05	1.19E-02	2.45E-02	1.9	2.0	--	--	--	--	--	--	--	
				West	School	628711.80	3656414.00	830	1.52E-05	1.26E-02											
				East	Senior Center	628456.30	3656145.00	1447	1.52E-05	2.20E-02	4.27E-02	5.8	6.1	--	--	--	--	--	--	--	
				West	Senior Center	628456.30	3656145.00	1361	1.52E-05	2.07E-02											
3	LA I-110 Interstate 110 in Carson	Additional Segment	Los Angeles	North	MEIR	380800.00	3743500.00	950	3.71E-05	3.52E-02	6.83E-02	59.1	62.0	42.0	44.1	67.3	70.7				
				South	MEIR	380800.00	3743500.00	1237	2.67E-05	3.30E-02											
				North	MEIW	380800.00	3743600.00	938	3.71E-05	3.48E-02	6.74E-02	4.6	4.8	--	--	--	--	--	--		
				South	MEIW	380800.00	3743600.00	1221	2.67E-05	3.26E-02											
				North	Day Care	381383.10	3744323.00	123	3.71E-05	4.56E-03	7.74E-03	2.6	2.8	--	--	--	--	--	--	--	
				South	Day Care	381383.10	3744323.00	119	2.67E-05	3.18E-03											
				North	School	381001.20	3743694.00	667	3.71E-05	2.47E-02	4.01E-02	3.1	3.3	--	--	--	--	--	--	--	
				South	School	381001.20	3743694.00	574	2.67E-05	1.53E-02											
				North	Senior Center	380506.70	3743721.00	210	3.71E-05	7.79E-03	1.37E-02	1.9	2.0	--	--	--	--	--	--	--	
				South	Senior Center	380506.70	3743721.00	222	2.67E-05	5.93E-03											

Scenario 2: 2040 Base Line (2040BL), Future Conditions
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals			
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)			
4	LA I-710 Interstate 710 in Compton, north of the intersection with SR 91	2012_2035 PDEIR Segment	Los Angeles	North	MEIR	390000.00	3750700.00	579	5.64E-05	3.27E-02										
				South	MEIR	390000.00	3750700.00	682	4.55E-05	3.10E-02	6.37E-02	55.1	57.9	39.1	41.1	62.8	65.9			
				North	MEIW	390428.00	3751262.00	324	5.64E-05	1.83E-02										
				South	MEIW	390428.00	3751262.00	291	4.55E-05	1.32E-02	3.15E-02	2.2	2.3	--	--	--	--	--		
				North	Day Care	389795.00	3751313.00	164	5.64E-05	9.25E-03										
				South	Day Care	389795.00	3751313.00	176	4.55E-05	8.01E-03	1.73E-02	5.9	6.2	--	--	--	--	--	--	
				North	School	389951.66	3751333.90	258	5.64E-05	1.46E-02										
				South	School	389951.66	3751333.90	287	4.55E-05	1.31E-02	2.76E-02	2.1	2.2	--	--	--	--	--	--	
				North	Senior Center	391265.90	3750525.00	44.81	5.64E-05	2.53E-03										
				South	Senior Center	391265.90	3750525.00	43.56	4.55E-05	1.98E-03	4.51E-03	0.6	0.6	--	--	--	--	--	--	
5	LA SR-60 DB State Road 60 Freeway near Diamond Bar	2012_2035 PDEIR Segment	Los Angeles	East	MEIR	425800.00	3765300.00	1385	4.12E-05	5.71E-02										
				West	MEIR	425800.00	3765300.00	974	4.67E-05	4.55E-02	1.03E-01	88.7	93.2	63.0	66.2	101.1	106.2			
				East	MEIW	425200.00	3765000.00	909	4.12E-05	3.75E-02										
				West	MEIW	425200.00	3765000.00	768	4.67E-05	3.59E-02	7.33E-02	5.0	5.3	--	--	--	--	--		
				East	Day Care	425255.30	3764985.00	679	4.12E-05	2.80E-02										
				West	Day Care	425255.30	3764985.00	598	4.67E-05	2.79E-02	5.59E-02	19.1	20.0	--	--	--	--	--	--	
				East	School	425626.70	3764800.00	242	4.12E-05	9.97E-03										
				West	School	425626.70	3764800.00	225	4.67E-05	1.05E-02	2.05E-02	1.6	1.7	--	--	--	--	--	--	
				East	Senior Center	NR	NR	--	4.12E-05	--										
				West	Senior Center	NR	NR	--	4.67E-05	--	--	--	--	--	--	--	--	--	--	--
6	LA SR-60 SEM State Road 60 Freeway near south El Monte at Peck Road	Additional Segment	Los Angeles	East	MEIR	403200.00	3767100.00	628	3.95E-05	2.48E-02										
				West	MEIR	403200.00	3767100.00	828	4.31E-05	3.57E-02	6.05E-02	52.3	55.0	37.2	39.0	59.6	62.6			
				East	MEIW	403700.00	3766800.00	787	3.95E-05	3.11E-02										
				West	MEIW	403700.00	3766800.00	580	4.31E-05	2.50E-02	5.61E-02	3.8	4.0	--	--	--	--	--		
				East	Day Care	403373.30	3767584.00	108	3.95E-05	4.27E-03										
				West	Day Care	403373.30	3767584.00	115	4.31E-05	4.96E-03	9.22E-03	3.1	3.3	--	--	--	--	--	--	
				East	School	403685.00	3767262.00	188	3.95E-05	7.43E-03										
				West	School	403685.00	3767262.00	207	4.31E-05	8.92E-03	1.63E-02	1.3	1.3	--	--	--	--	--	--	
				East	Senior Center	403368.40	3767822.00	70.44	3.95E-05	2.78E-03										
				West	Senior Center	403368.40	3767822.00	73.95	4.31E-05	3.19E-03	5.97E-03	0.8	0.9	--	--	--	--	--	--	
7	ORA I-5 Interstate 5 in Orange near intersection of SR-57 and SR-22	Additional Segment	Orange	North	MEIR	419000.00	3737600.00	409	4.27E-05	1.75E-02										
				South	MEIR	419000.00	3737600.00	477	5.57E-05	2.66E-02	4.40E-02	38.1	40.0	27.1	28.4	43.4	45.6			
				North	MEIW	419400.00	3737500.00	290	4.27E-05	1.24E-02										
				South	MEIW	419400.00	3737500.00	242	5.57E-05	1.35E-02	2.59E-02	1.8	1.9	--	--	--	--	--		
				North	Day Care	418539.00	3737429.00	76.2	4.27E-05	3.25E-03										
				South	Day Care	418539.00	3737429.00	76.68	5.57E-05	4.27E-03	7.52E-03	2.6	2.7	--	--	--	--	--	--	
				North	School	419811.55	3738689.28	33.07	4.27E-05	1.41E-03										
				South	School	419811.55	3738689.28	32.34	5.57E-05	1.80E-03	3.21E-03	0.2	0.3	--	--	--	--	--	--	
				North	Senior Center	419249.90	3738210.00	111	4.27E-05	4.74E-03										
				South	Senior Center	419249.90	3738210.00	106	5.57E-05	5.90E-03	1.06E-02	1.5	1.5	--	--	--	--	--	--	
8	ORA I-405 Interstate 405 in Seal Beach, east of the I-605 interchange	2012_2035 PDEIR Segment	Orange	North	MEIR	402000.00	3737700.00	514	7.41E-05	3.81E-02										
				South	MEIR	402000.00	3737700.00	612	8.42E-05	5.15E-02	8.96E-02	77.5	81.4	55.1	57.8	88.3	92.8			
				North	MEIW	401576.00	3737798.00	257	7.41E-05	1.90E-02										
				South	MEIW	401576.00	3737798.00	327	8.42E-05	2.75E-02	4.66E-02	3.2	3.3	--	--	--	--	--		
				North	Day Care	NR	NR	--	7.41E-05	--										
				South	Day Care	NR	NR	--	8.42E-05	--	--	--	--	--	--	--	--	--	--	
				North	School	NR	NR	--	7.41E-05	--										
				South	School	NR	NR	--	8.42E-05	--	--	--	--	--	--	--	--	--	--	
				North	Senior Center	NR	NR	--	7.41E-05	--										
				South	Senior Center	NR	NR	--	8.42E-05	--	--	--	--	--	--	--	--	--	--	

Scenario 2: 2040 Base Line (2040BL), Future Conditions
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals	
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)	
9	RIV I-10 Interstate 10 in the Banning Area	Additional Segment	Riverside	East	MEIR	511000.00	3754000.00	199	3.74E-05	7.44E-03								
				West	MEIR	511000.00	3754000.00	232	3.88E-05	9.00E-03	1.64E-02	14.2	14.9	10.1	10.6	16.2	17.0	
				East	MEIW	510886.80	3753911.00	367	3.74E-05	1.37E-02								
				West	MEIW	510886.80	3753911.00	450	3.88E-05	1.75E-02	3.12E-02	2.1	2.2	--	--	--	--	
				East	Day Care	510600.00	3754100.00	87.49	3.74E-05	3.27E-03								
				West	Day Care	510600.00	3754100.00	101	3.88E-05	3.92E-03	7.19E-03	2.5	2.6	--	--	--	--	
				East	School	511389.70	3754208.00	81.51	3.74E-05	3.05E-03								
				West	School	511389.70	3754208.00	89.38	3.88E-05	3.47E-03	6.52E-03	0.5	0.5	--	--	--	--	
				East	Senior Center	511164.70	3753944.00	290	3.74E-05	1.08E-02								
West	Senior Center	511164.70	3753944.00	351	3.88E-05	1.36E-02	2.45E-02	3.3	3.5	--	--	--	--					
10	RIV I-15 Interstate 15 near Temecula	Additional Segment	Riverside	North	MEIR	486867.30	3705207.00	983	1.76E-05	1.73E-02								
				South	MEIR	486867.30	3705207.00	718	1.69E-05	1.21E-02	2.94E-02	25.5	26.7	18.1	19.0	29.0	30.5	
				North	MEIW	486700.00	3705100.00	1070	1.76E-05	1.88E-02								
				South	MEIW	486700.00	3705100.00	1740	1.69E-05	2.94E-02	4.82E-02	3.3	3.5	--	--	--	--	
				North	Day Care	486327.80	3705951.00	412	1.76E-05	7.25E-03								
				South	Day Care	486327.80	3705951.00	545	1.69E-05	9.21E-03	1.65E-02	5.6	5.9	--	--	--	--	
				North	School	486791.50	3705381.00	1179	1.76E-05	2.08E-02								
				South	School	486791.50	3705381.00	848	1.69E-05	1.43E-02	3.51E-02	2.7	2.9	--	--	--	--	
				North	Senior Center	NR	NR	--	1.76E-05	--								
South	Senior Center	NR	NR	--	1.69E-05	--	--	--	--	--	--	--	--					
11	RIV SR-91 State Road 91 Freeway in Corona, east of the intersection with SR-71	2012_2035 PDEIR Segment	Riverside	East	MEIR	439300.00	3749100.00	594	2.97E-05	1.76E-02								
				West	MEIR	439300.00	3749100.00	687	7.69E-05	5.28E-02	7.05E-02	61.0	64.0	43.3	45.5	69.5	72.9	
				East	MEIW	439864.00	3749063.00	761	2.97E-05	2.26E-02								
				West	MEIW	439864.00	3749063.00	613	7.69E-05	4.71E-02	6.97E-02	4.8	5.0	--	--	--	--	
				East	Day Care	NR	NR	--	2.97E-05	--								
				West	Day Care	NR	NR	--	7.69E-05	--	--	--	--	--	--	--		
				East	School	NR	NR	--	2.97E-05	--	--	--	--	--	--	--		
				West	School	NR	NR	--	7.69E-05	--	--	--	--	--	--	--		
				East	Senior Center	NR	NR	--	2.97E-05	--	--	--	--	--	--	--		
West	Senior Center	NR	NR	--	7.69E-05	--	--	--	--	--	--	--						
12	SB I-15 ONT ¹ Interstate 15 in Ontario	2012_2035 PDEIR Segment	San Bernardino	North	MEIR	449500.00	3771200.00	389	4.03E-05	1.57E-02								
				South	MEIR	449500.00	3771200.00	487	7.09E-05	3.45E-02	5.02E-02	43.4	45.6	30.9	32.4	49.5	52.0	
				North	MEIW	449500.00	3771200.00	389	4.03E-05	1.57E-02								
				South	MEIW	449500.00	3771200.00	487	7.09E-05	3.45E-02	5.02E-02	3.4	3.6	--	--	--	--	
				North	Day Care	NR	NR	--	4.03E-05	--								
				South	Day Care	NR	NR	--	7.09E-05	--	--	--	--	--	--	--		
				North	School	NR	NR	--	4.03E-05	--	--	--	--	--	--	--		
				South	School	NR	NR	--	7.09E-05	--	--	--	--	--	--	--		
				North	Senior Center	NR	NR	--	4.03E-05	--	--	--	--	--	--	--		
South	Senior Center	NR	NR	--	7.09E-05	--	--	--	--	--	--	--						
13	SB I-15 VIC Interstate 15 in the Victorville area	Additional Segment	San Bernardino	North	MEIR	470800.00	3820500.00	1443	1.09E-05	1.57E-02								
				South	MEIR	470800.00	3820500.00	2122	1.75E-05	3.71E-02	5.29E-02	45.7	48.0	32.5	34.1	52.1	54.7	
				North	MEIW	471100.00	3820700.00	1021	1.09E-05	1.11E-02								
				South	MEIW	471100.00	3820700.00	852	1.75E-05	1.49E-02	2.60E-02	1.8	1.9	--	--	--	--	
				North	Day Care	471186.20	3820489.00	460	1.09E-05	5.01E-03								
				South	Day Care	471186.20	3820489.00	419	1.75E-05	7.33E-03	1.23E-02	4.2	4.4	--	--	--	--	
				North	School	470957.20	3821055.00	635	1.09E-05	6.92E-03								
				South	School	470957.20	3821055.00	763	1.75E-05	1.34E-02	2.03E-02	1.6	1.7	--	--	--	--	
				North	Senior Center	NR	NR	--	1.09E-05	--	--	--	--	--	--	--		
South	Senior Center	NR	NR	--	1.75E-05	--	--	--	--	--	--	--						

Scenario 2: 2040 Base Line (2040BL), Future Conditions
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals			
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)			
14	SB SR-60 State Road 60 Freeway in Ontario, west of the I-15 interchange	2012_2035 PDEIR Segment	San Bernardino	East	MEIR	446200.00	3765600.00	1005	3.13E-05	3.15E-02										
				West	MEIR	446200.00	3765600.00	673	2.59E-05	1.74E-02	4.89E-02	42.3	44.4	30.0	31.5	48.2	50.6			
				East	MEIW	445700.00	3765800.00	698	3.13E-05	2.18E-02										
				West	MEIW	445700.00	3765800.00	952	2.59E-05	2.47E-02	4.65E-02	3.2	3.3	--	--	--	--	--		
				East	Day Care	445523.30	3765239.00	155	3.13E-05	4.85E-03										
				West	Day Care	445523.30	3765239.00	143	2.59E-05	3.70E-03	8.56E-03	2.9	3.1	--	--	--	--	--	--	
				East	School	445523.30	3765239.00	155	3.13E-05	4.85E-03										
				West	School	445523.30	3765239.00	143	2.59E-05	3.70E-03	8.56E-03	0.7	0.7	--	--	--	--	--	--	
				East	Senior Center	NR	NR	--	3.13E-05	--										
				West	Senior Center	NR	NR	--	2.59E-05	--										
15	VEN US-101 SB US 101 Freeway in San Buenaventura near the Ventura Harbor	Additional Segment	Ventura	North	MEIR	295200.00	3793400.00	741	1.36E-05	1.01E-02										
				South	MEIR	295200.00	3793400.00	676	4.84E-06	3.27E-03	1.33E-02	11.5	12.1	8.2	8.6	13.2	13.8			
				North	MEIW	295300.00	3793200.00	1645	1.36E-05	2.24E-02										
				South	MEIW	295300.00	3793200.00	1293	4.84E-06	6.26E-03	2.86E-02	2.0	2.1	--	--	--	--	--		
				North	Day Care	296212.80	3793611.00	143	1.36E-05	1.94E-03										
				South	Day Care	296212.80	3793611.00	133	4.84E-06	6.44E-04	2.59E-03	0.9	0.9	--	--	--	--	--	--	
				North	School	295785.70	3793241.00	448	1.36E-05	6.09E-03										
				South	School	295785.70	3793241.00	400	4.84E-06	1.94E-03	8.03E-03	0.6	0.7	--	--	--	--	--	--	
				North	Senior Center	295781.00	3793062.00	790	1.36E-05	1.07E-02										
				South	Senior Center	295781.00	3793062.00	667	4.84E-06	3.23E-03	1.40E-02	1.9	2.0	--	--	--	--	--	--	
16	VEN US-101 TO US 101 Freeway in Thousand Oaks, east of SR-23	2012_2035 PDEIR Segment	Ventura	North	MEIR	330000.00	3782700.00	1365	2.02E-05	2.76E-02										
				South	MEIR	330000.00	3782700.00	943	3.40E-05	3.21E-02	5.96E-02	51.6	54.2	36.6	38.5	58.8	61.7			
				North	MEIW	329800.00	3782600.00	693	2.02E-05	1.40E-02										
				South	MEIW	329800.00	3782600.00	872	3.40E-05	2.96E-02	4.36E-02	3.0	3.1	--	--	--	--	--		
				North	Day Care	329921.90	3782934.00	493	2.02E-05	9.96E-03										
				South	Day Care	329921.90	3782934.00	423	3.40E-05	1.44E-02	2.43E-02	8.3	8.7	--	--	--	--	--	--	
				North	School	330108.20	3782369.00	459	2.02E-05	9.27E-03										
				South	School	330108.20	3782369.00	735	3.40E-05	2.50E-02	3.43E-02	2.7	2.8	--	--	--	--	--	--	
				North	Senior Center	329368.20	3783515.00	158	2.02E-05	3.19E-03										
				South	Senior Center	329368.20	3783515.00	144	3.40E-05	4.90E-03	8.09E-03	1.1	1.2	--	--	--	--	--	--	

Notes:
 1. The I-15 MEIR is an assumed residential receptor at about 100 meters from the freeway because although there are no residential receptors near the segment modeled, there are a number of nearby residential receptors only 2 miles north of the modeled segment and traffic volumes are expected to be similar on I-15 where there are nearby residents.

Scenario 3: 2040 Plan Scenario 2 (2040PLSC2), Future Conditions under the No Project Alternative
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

			Fraction of Time at Home	Age Sensitivity Factors
Residential Breathing Rates are 95th Percentile				
Breathing Rate 3rd Trimester	361	L/kg-day	1	10
Breathing Rate 0 to <2 yrs	1090	L/kg-day	1	10
Breathing Rate 2 to <16 yrs	745	L/kg-day	1	3
Breathing Rate 16 to <70 yrs	290	L/kg-day	0.73	1
Breathing Rate 2 to <9 yrs	861	L/kg-day	1	3
Breathing Rate 16 to <30 yrs	335	L/kg-day	0.73	1
Off-site Worker Breathing Rates are 95th Percentile				
Breathing Rate 3rd Trimester	240	L/kg-day		10
8-hour Breathing Rate 16 to 70 years	230	L/kg-day		1
Day Care and School Breathing Rates are 95th Percentile				
8-hour Breathing Rate 0 to <2 years	1200	L/kg-day		10
8-hour Breathing Rate 2 to <9 years	640	L/kg-day		3
8-hour Breathing Rate 2 to <16 years	520	L/kg-day		3
DPM Cancer Potency	1.1	(mg/kg-day) ⁻¹		
Percentage Risk Increase over DPM	5%			For additional compounds emitted from vehicles (acetaldehyde, benzene, 1,3-butadiene, formaldehyde)

NR = No Receptor for the category within 1000 m of the freeway.

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals				
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)				
1	IMP I-8 Interstate 8 just east of El Centro	2012_2035 PDEIR Segment	Imperial	East	MEIR	635500.00	3627200.00	1298	6.14E-06	7.97E-03	2.04E-02	17.6	18.5	12.5	13.1	20.1	21.1				
				West	MEIR	635500.00	3627200.00	1985	6.24E-06	1.24E-02											
				East	MEIW	635408.70	3627026.00	1588	6.14E-06	9.75E-03	1.77E-02	1.2	1.3	--	--	--	--	--	--		
				West	MEIW	635408.70	3627026.00	1280	6.24E-06	7.99E-03											
				East	Day Care	636187.90	3627252.00	455	6.14E-06	2.79E-03	7.32E-03	2.5	2.6	--	--	--	--	--	--	--	
				West	Day Care	636187.90	3627252.00	725	6.24E-06	4.52E-03											
				East	School	635173.30	3627462.00	301	6.14E-06	1.85E-03	3.93E-03	0.3	0.3	--	--	--	--	--	--	--	
				West	School	635173.30	3627462.00	334	6.24E-06	2.08E-03											
				East	Senior Center	NR	NR	--	6.14E-06	--											
				West	Senior Center	NR	NR	--	6.24E-06	--											
2	IMP SR-78 State Road 78 Freeway in Westmorland	Additional Segment	Imperial	East	MEIR	628500.00	3656200.00	2421	2.15E-06	5.21E-03	9.54E-03	8.3	8.7	5.9	6.2	9.4	9.9				
				West	MEIR	628500.00	3656200.00	2189	1.98E-06	4.33E-03											
				East	MEIW	628138.20	3656220.00	3479	2.15E-06	7.48E-03	1.33E-02	0.9	1.0	--	--	--	--	--	--		
				West	MEIW	628138.20	3656220.00	2936	1.98E-06	5.81E-03											
				East	Day Care	628837.80	3656150.00	1475	2.15E-06	3.17E-03	5.93E-03	2.0	2.1	--	--	--	--	--	--	--	
				West	Day Care	628837.80	3656150.00	1393	1.98E-06	2.76E-03											
				East	School	628711.80	3656414.00	785	2.15E-06	1.69E-03	3.33E-03	0.3	0.3	--	--	--	--	--	--	--	
				West	School	628711.80	3656414.00	830	1.98E-06	1.64E-03											
				East	Senior Center	628456.30	3656145.00	1447	2.15E-06	3.11E-03											
West	Senior Center	628456.30	3656145.00	1361	1.98E-06	2.69E-03															
3	LA I-110 Interstate 110 in Carson	Additional Segment	Los Angeles	North	MEIR	380800.00	3743500.00	950	2.42E-05	2.30E-02	5.11E-02	44.2	46.4	31.4	33.0	50.3	52.9				
				South	MEIR	380800.00	3743500.00	1237	2.27E-05	2.81E-02											
				North	MEIW	380800.00	3743600.00	938	2.42E-05	2.27E-02	5.04E-02	3.4	3.6	--	--	--	--	--	--		
				South	MEIW	380800.00	3743600.00	1221	2.27E-05	2.77E-02											
				North	Day Care	381383.10	3744323.00	123	2.42E-05	2.98E-03	5.68E-03	1.9	2.0	--	--	--	--	--	--	--	
				South	Day Care	381383.10	3744323.00	119	2.27E-05	2.70E-03											
				North	School	381001.20	3743694.00	667	2.42E-05	1.61E-02	2.92E-02	2.3	2.4	--	--	--	--	--	--	--	
				South	School	381001.20	3743694.00	574	2.27E-05	1.30E-02											
				North	Senior Center	380506.70	3743721.00	210	2.42E-05	5.08E-03	1.01E-02	1.4	1.5	--	--	--	--	--	--	--	
				South	Senior Center	380506.70	3743721.00	222	2.27E-05	5.04E-03											

Scenario 3: 2040 Plan Scenario 2 (2040PLSC2), Future Conditions under the No Project Alternative
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals		
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)		
4	LA I-710 Interstate 710 in Compton, north of the intersection with SR 91	2012_2035 PDEIR Segment	Los Angeles	North	MEIR	390000.00	3750700.00	579	5.02E-05	2.91E-02									
				South	MEIR	390000.00	3750700.00	682	4.59E-05	3.13E-02	6.04E-02	52.2	54.8	37.1	39.0	59.5	62.5		
				North	MEIW	390428.00	3751262.00	324	5.02E-05	1.63E-02									
				South	MEIW	390428.00	3751262.00	291	4.59E-05	1.34E-02	2.96E-02	2.0	2.1	--	--	--	--		
				North	Day Care	389795.00	3751313.00	164	5.02E-05	8.23E-03									
				South	Day Care	389795.00	3751313.00	176	4.59E-05	8.08E-03	1.63E-02	5.6	5.8	--	--	--	--		
				North	School	389951.66	3751333.90	258	5.02E-05	1.30E-02									
				South	School	389951.66	3751333.90	287	4.59E-05	1.32E-02	2.61E-02	2.0	2.1	--	--	--	--		
				North	Senior Center	391265.90	3750525.00	44.81	5.02E-05	2.25E-03									
				South	Senior Center	391265.90	3750525.00	43.56	4.59E-05	2.00E-03	4.25E-03	0.6	0.6	--	--	--	--		
5	LA SR-60 DB State Road 60 Freeway near Diamond Bar	2012_2035 PDEIR Segment	Los Angeles	East	MEIR	425800.00	3765300.00	1385	2.76E-05	3.82E-02									
				West	MEIR	425800.00	3765300.00	974	2.81E-05	2.74E-02	6.56E-02	56.8	59.6	40.3	42.3	64.7	67.9		
				East	MEIW	425200.00	3765000.00	909	2.76E-05	2.51E-02									
				West	MEIW	425200.00	3765000.00	768	2.81E-05	2.16E-02	4.67E-02	3.2	3.3	--	--	--	--		
				East	Day Care	425255.30	3764985.00	679	2.76E-05	1.87E-02									
				West	Day Care	425255.30	3764985.00	598	2.81E-05	1.68E-02	3.55E-02	12.1	12.7	--	--	--	--		
				East	School	425626.70	3764800.00	242	2.76E-05	6.68E-03									
				West	School	425626.70	3764800.00	225	2.81E-05	6.32E-03	1.30E-02	1.0	1.1	--	--	--	--		
				East	Senior Center	NR	NR	--	2.76E-05	--									
				West	Senior Center	NR	NR	--	2.81E-05	--	--	--	--	--	--	--	--		
6	LA SR-60 SEM State Road 60 Freeway near south El Monte at Peck Road	Additional Segment	Los Angeles	East	MEIR	403200.00	3767100.00	628	3.09E-05	1.94E-02									
				West	MEIR	403200.00	3767100.00	828	3.47E-05	2.87E-02	4.81E-02	41.6	43.7	29.6	31.1	47.5	49.8		
				East	MEIW	403700.00	3766800.00	787	3.09E-05	2.43E-02									
				West	MEIW	403700.00	3766800.00	580	3.47E-05	2.01E-02	4.44E-02	3.0	3.2	--	--	--	--		
				East	Day Care	403373.30	3767584.00	108	3.09E-05	3.34E-03									
				West	Day Care	403373.30	3767584.00	115	3.47E-05	3.99E-03	7.33E-03	2.5	2.6	--	--	--	--		
				East	School	403685.00	3767262.00	188	3.09E-05	5.81E-03									
				West	School	403685.00	3767262.00	207	3.47E-05	7.18E-03	1.30E-02	1.0	1.1	--	--	--	--		
				East	Senior Center	403368.40	3767822.00	70.44	3.09E-05	2.18E-03									
				West	Senior Center	403368.40	3767822.00	73.95	3.47E-05	2.57E-03	4.74E-03	0.6	0.7	--	--	--	--		
7	ORA I-5 Interstate 5 in Orange near intersection of SR-57 and SR-22	Additional Segment	Orange	North	MEIR	419000.00	3737600.00	409	4.48E-05	1.83E-02									
				South	MEIR	419000.00	3737600.00	477	3.68E-05	1.76E-02	3.59E-02	31.0	32.6	22.0	23.2	35.4	37.1		
				North	MEIW	419400.00	3737500.00	290	4.48E-05	1.30E-02									
				South	MEIW	419400.00	3737500.00	242	3.68E-05	8.91E-03	2.19E-02	1.5	1.6	--	--	--	--		
				North	Day Care	418539.00	3737429.00	76.2	4.48E-05	3.41E-03									
				South	Day Care	418539.00	3737429.00	76.68	3.68E-05	2.82E-03	6.24E-03	2.1	2.2	--	--	--	--		
				North	School	419811.55	3738689.28	33.07	4.48E-05	1.48E-03									
				South	School	419811.55	3738689.28	32.34	3.68E-05	1.19E-03	2.67E-03	0.2	0.2	--	--	--	--		
				North	Senior Center	419249.90	3738210.00	111	4.48E-05	4.97E-03									
				South	Senior Center	419249.90	3738210.00	106	3.68E-05	3.90E-03	8.87E-03	1.2	1.3	--	--	--	--		
8	ORA I-405 Interstate 405 in Seal Beach, east of the I-605 interchange	2012_2035 PDEIR Segment	Orange	North	MEIR	402000.00	3737700.00	514	7.71E-05	3.96E-02									
				South	MEIR	402000.00	3737700.00	612	7.60E-05	4.65E-02	8.61E-02	74.5	78.3	52.9	55.6	84.9	89.2		
				North	MEIW	401576.00	3737798.00	257	7.71E-05	1.98E-02									
				South	MEIW	401576.00	3737798.00	327	7.60E-05	2.49E-02	4.47E-02	3.1	3.2	--	--	--	--		
				North	Day Care	NR	NR	--	7.71E-05	--									
				South	Day Care	NR	NR	--	7.60E-05	--	--	--	--	--	--	--	--		
				North	School	NR	NR	--	7.71E-05	--									
				South	School	NR	NR	--	7.60E-05	--	--	--	--	--	--	--	--		
				North	Senior Center	NR	NR	--	7.71E-05	--									
				South	Senior Center	NR	NR	--	7.60E-05	--	--	--	--	--	--	--	--		

Scenario 3: 2040 Plan Scenario 2 (2040PLSC2), Future Conditions under the No Project Alternative
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals			
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)			
9	RIV I-10 Interstate 10 in the Banning Area	Additional Segment	Riverside	East	MEIR	511000.00	3754000.00	199	3.75E-05	7.46E-03										
				West	MEIR	511000.00	3754000.00	232	3.81E-05	8.84E-03	1.63E-02	14.1	14.8	10.0	10.5	16.1	16.9			
				East	MEIW	510886.80	3753911.00	367	3.75E-05	1.38E-02										
				West	MEIW	510886.80	3753911.00	450	3.81E-05	1.71E-02	3.09E-02	2.1	2.2	--	--	--	--			
				East	Day Care	510600.00	3754100.00	87.49	3.75E-05	3.28E-03										
				West	Day Care	510600.00	3754100.00	101	3.81E-05	3.85E-03	7.13E-03	2.4	2.6	--	--	--	--			
				East	School	511389.70	3754208.00	81.51	3.75E-05	3.06E-03										
				West	School	511389.70	3754208.00	89.38	3.81E-05	3.41E-03	6.46E-03	0.5	0.5	--	--	--	--			
				East	Senior Center	511164.70	3753944.00	290	3.75E-05	1.09E-02										
				West	Senior Center	511164.70	3753944.00	351	3.81E-05	1.34E-02	2.42E-02	3.3	3.5	--	--	--	--			
10	RIV I-15 Interstate 15 near Temecula	Additional Segment	Riverside	North	MEIR	486867.30	3705207.00	983	2.48E-05	2.44E-02										
				South	MEIR	486867.30	3705207.00	718	2.44E-05	1.75E-02	4.19E-02	36.2	38.1	25.7	27.0	41.3	43.4			
				North	MEIW	486700.00	3705100.00	1070	2.48E-05	2.65E-02										
				South	MEIW	486700.00	3705100.00	1740	2.44E-05	4.25E-02	6.90E-02	4.7	5.0	--	--	--	--			
				North	Day Care	486327.80	3705951.00	412	2.48E-05	1.02E-02										
				South	Day Care	486327.80	3705951.00	545	2.44E-05	1.33E-02	2.35E-02	8.0	8.4	--	--	--	--			
				North	School	486791.50	3705381.00	1179	2.48E-05	2.92E-02										
				South	School	486791.50	3705381.00	848	2.44E-05	2.07E-02	4.99E-02	3.9	4.1	--	--	--	--			
				North	Senior Center	NR	NR	--	2.48E-05	--										
				South	Senior Center	NR	NR	--	2.44E-05	--	--	--	--	--	--	--	--			
11	RIV SR-91 State Road 91 Freeway in Corona, east of the intersection with SR-71	2012_2035 PDEIR Segment	Riverside	East	MEIR	439300.00	3749100.00	594	4.37E-05	2.60E-02										
				West	MEIR	439300.00	3749100.00	687	5.08E-05	3.49E-02	6.09E-02	52.7	55.3	37.4	39.3	60.0	63.0			
				East	MEIW	439864.00	3749063.00	761	4.37E-05	3.33E-02										
				West	MEIW	439864.00	3749063.00	613	5.08E-05	3.11E-02	6.44E-02	4.4	4.6	--	--	--	--			
				East	Day Care	NR	NR	--	4.37E-05	--										
				West	Day Care	NR	NR	--	5.08E-05	--	--	--	--	--	--	--	--			
				East	School	NR	NR	--	4.37E-05	--										
				West	School	NR	NR	--	5.08E-05	--	--	--	--	--	--	--	--			
				East	Senior Center	NR	NR	--	4.37E-05	--										
				West	Senior Center	NR	NR	--	5.08E-05	--	--	--	--	--	--	--	--			
12	SB I-15 ONT ¹ Interstate 15 in Ontario	2012_2035 PDEIR Segment	San Bernardino	North	MEIR	449500.00	3771200.00	389	3.15E-05	1.23E-02										
				South	MEIR	449500.00	3771200.00	487	3.18E-05	1.55E-02	2.77E-02	24.0	25.2	17.0	17.9	27.3	28.7			
				North	MEIW	449500.00	3771200.00	389	3.15E-05	1.23E-02										
				South	MEIW	449500.00	3771200.00	487	3.18E-05	1.55E-02	2.77E-02	1.9	2.0	--	--	--	--			
				North	Day Care	NR	NR	--	3.15E-05	--										
				South	Day Care	NR	NR	--	3.18E-05	--	--	--	--	--	--	--	--			
				North	School	NR	NR	--	3.15E-05	--										
				South	School	NR	NR	--	3.18E-05	--	--	--	--	--	--	--	--			
				North	Senior Center	NR	NR	--	3.15E-05	--										
				South	Senior Center	NR	NR	--	3.18E-05	--	--	--	--	--	--	--	--			
13	SB I-15 VIC Interstate 15 in the Victorville area	Additional Segment	San Bernardino	North	MEIR	470800.00	3820500.00	1443	1.97E-05	2.84E-02										
				South	MEIR	470800.00	3820500.00	2122	1.98E-05	4.20E-02	7.04E-02	60.9	64.0	43.3	45.5	69.4	72.9			
				North	MEIW	471100.00	3820700.00	1021	1.97E-05	2.01E-02										
				South	MEIW	471100.00	3820700.00	852	1.98E-05	1.69E-02	3.70E-02	2.5	2.7	--	--	--	--			
				North	Day Care	471186.20	3820489.00	460	1.97E-05	9.06E-03										
				South	Day Care	471186.20	3820489.00	419	1.98E-05	8.30E-03	1.74E-02	5.9	6.2	--	--	--	--			
				North	School	470957.20	3821055.00	635	1.97E-05	1.25E-02										
				South	School	470957.20	3821055.00	763	1.98E-05	1.51E-02	2.76E-02	2.1	2.2	--	--	--	--			
				North	Senior Center	NR	NR	--	1.97E-05	--										
				South	Senior Center	NR	NR	--	1.98E-05	--	--	--	--	--	--	--	--			

Scenario 3: 2040 Plan Scenario 2 (2040PLSC2), Future Conditions under the No Project Alternative
Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals			
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)			
14	SB SR-60 State Road 60 Freeway in Ontario, west of the I-15 interchange	2012_2035 PDEIR Segment	San Bernardino	East	MEIR	446200.00	3765600.00	1005	2.59E-05	2.60E-02										
				West	MEIR	446200.00	3765600.00	673	2.50E-05	1.68E-02	4.29E-02	37.1	38.9	26.3	27.7	42.2	44.4			
				East	MEIW	445700.00	3765800.00	698	2.59E-05	1.81E-02										
				West	MEIW	445700.00	3765800.00	952	2.50E-05	2.38E-02	4.19E-02	2.9	3.0	--	--	--	--	--		
				East	Day Care	445523.30	3765239.00	155	2.59E-05	4.01E-03										
				West	Day Care	445523.30	3765239.00	143	2.50E-05	3.58E-03	7.59E-03	2.6	2.7	--	--	--	--	--		
				East	School	445523.30	3765239.00	155	2.59E-05	4.01E-03										
				West	School	445523.30	3765239.00	143	2.50E-05	3.58E-03	7.59E-03	0.6	0.6	--	--	--	--	--		
				East	Senior Center	NR	NR	--	2.59E-05	--										
				West	Senior Center	NR	NR	--	2.50E-05	--										
15	VEN US-101 SB US 101 Freeway in San Buenaventura near the Ventura Harbor	Additional Segment	Ventura	North	MEIR	295200.00	3793400.00	741	8.51E-06	6.31E-03										
				South	MEIR	295200.00	3793400.00	676	8.60E-06	5.81E-03	1.21E-02	10.5	11.0	7.4	7.8	11.9	12.5			
				North	MEIW	295300.00	3793200.00	1645	8.51E-06	1.40E-02										
				South	MEIW	295300.00	3793200.00	1293	8.60E-06	1.11E-02	2.51E-02	1.7	1.8	--	--	--	--	--		
				North	Day Care	296212.80	3793611.00	143	8.51E-06	1.22E-03										
				South	Day Care	296212.80	3793611.00	133	8.60E-06	1.14E-03	2.36E-03	0.8	0.8	--	--	--	--	--		
				North	School	295785.70	3793241.00	448	8.51E-06	3.81E-03										
				South	School	295785.70	3793241.00	400	8.60E-06	3.44E-03	7.25E-03	0.6	0.6	--	--	--	--	--		
				North	Senior Center	295781.00	3793062.00	790	8.51E-06	6.72E-03										
				South	Senior Center	295781.00	3793062.00	667	8.60E-06	5.74E-03	1.25E-02	1.7	1.8	--	--	--	--	--		
16	VEN US-101 TO US 101 Freeway in Thousand Oaks, east of SR-23	2012_2035 PDEIR Segment	Ventura	North	MEIR	330000.00	3782700.00	1365	2.11E-05	2.88E-02										
				South	MEIR	330000.00	3782700.00	943	2.54E-05	2.40E-02	5.28E-02	45.6	47.9	32.4	34.0	52.0	54.6			
				North	MEIW	329800.00	3782600.00	693	2.11E-05	1.46E-02										
				South	MEIW	329800.00	3782600.00	872	2.54E-05	2.21E-02	3.68E-02	2.5	2.6	--	--	--	--	--		
				North	Day Care	329921.90	3782934.00	493	2.11E-05	1.04E-02										
				South	Day Care	329921.90	3782934.00	423	2.54E-05	1.07E-02	2.11E-02	7.2	7.6	--	--	--	--	--		
				North	School	330108.20	3782369.00	459	2.11E-05	9.68E-03										
				South	School	330108.20	3782369.00	735	2.54E-05	1.87E-02	2.84E-02	2.2	2.3	--	--	--	--	--		
				North	Senior Center	329368.20	3783515.00	158	2.11E-05	3.33E-03										
				South	Senior Center	329368.20	3783515.00	144	2.54E-05	3.66E-03	6.99E-03	1.0	1.0	--	--	--	--	--		

Notes:
1. The I-15 MEIR is an assumed residential receptor at about 100 meters from the freeway because although there are no residential receptors near the segment modeled, there are a number of nearby residential receptors only 2 miles north of the modeled segment and traffic volumes are expected to be similar on I-15 where there are nearby residents.

			Fraction of Time at Home	Age Sensitivity Factors
Residential Breathing Rates are 95th Percentile				
Breathing Rate 3rd Trimester	361	L/kg-day	1	10
Breathing Rate 0 to <2 yrs	1090	L/kg-day	1	10
Breathing Rate 2 to <16 yrs	745	L/kg-day	1	3
Breathing Rate 16 to <70 yrs	290	L/kg-day	0.73	1
Breathing Rate 2 to <9 yrs	861	L/kg-day	1	3
Breathing Rate 16 to <30 yrs	335	L/kg-day	0.73	1
Off-site Worker Breathing Rates are 95th Percentile				
Breathing Rate 3rd Trimester	240	L/kg-day		10
8-hour Breathing Rate 16 to 70 years	230	L/kg-day		1
Day Care and School Breathing Rates are 95th Percentile				
8-hour Breathing Rate 0 to <2 years	1200	L/kg-day		10
8-hour Breathing Rate 2 to <9 years	640	L/kg-day		3
8-hour Breathing Rate 2 to <16 years	520	L/kg-day		3
DPM Cancer Potency	1.1	(mg/kg-day) ⁻¹		
Percentage Risk Increase over DPM	5%			For additional compounds emitted from vehicles (acetaldehyde, benzene, 1,3-butadiene, formaldehyde)

NR = No Receptor for the category within 1000 m of the freeway.

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals				
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)				
1	IMP I-8 Interstate 8 just east of El Centro	2012_2035 PDEIR Segment	Imperial	East	MEIR	635500.00	3627200.00	1298	6.13E-06	7.96E-03	2.03E-02	17.6	18.5	12.5	13.1	20.0	21.0				
				West	MEIR	635500.00	3627200.00	1985	6.23E-06	1.24E-02											
				East	MEIW	635408.70	3627026.00	1588	6.13E-06	9.73E-03	1.77E-02	1.2	1.3	--	--	--	--	--	--		
				West	MEIW	635408.70	3627026.00	1280	6.23E-06	7.97E-03											
				East	Day Care	636187.90	3627252.00	455	6.13E-06	2.79E-03	7.31E-03	2.5	2.6	--	--	--	--	--	--	--	
				West	Day Care	636187.90	3627252.00	725	6.23E-06	4.52E-03											
				East	School	635173.30	3627462.00	301	6.13E-06	1.85E-03	3.93E-03	0.3	0.3	--	--	--	--	--	--	--	
				West	School	635173.30	3627462.00	334	6.23E-06	2.08E-03											
				East	Senior Center	NR	NR	--	6.13E-06	--											
				West	Senior Center	NR	NR	--	6.23E-06	--											
2	IMP SR-78 State Road 78 Freeway in Westmorland	Additional Segment	Imperial	East	MEIR	628500.00	3656200.00	2421	2.11E-06	5.11E-03	9.33E-03	8.1	8.5	5.7	6.0	9.2	9.7				
				West	MEIR	628500.00	3656200.00	2189	1.93E-06	4.22E-03											
				East	MEIW	628138.20	3656220.00	3479	2.11E-06	7.34E-03	1.30E-02	0.9	0.9	--	--	--	--	--	--		
				West	MEIW	628138.20	3656220.00	2936	1.93E-06	5.67E-03											
				East	Day Care	628837.80	3656150.00	1475	2.11E-06	3.11E-03	5.80E-03	2.0	2.1	--	--	--	--	--	--	--	
				West	Day Care	628837.80	3656150.00	1393	1.93E-06	2.69E-03											
				East	School	628711.80	3656414.00	785	2.11E-06	1.66E-03	3.26E-03	0.3	0.3	--	--	--	--	--	--	--	
				West	School	628711.80	3656414.00	830	1.93E-06	1.60E-03											
				East	Senior Center	628456.30	3656145.00	1447	2.11E-06	3.05E-03	5.68E-03	0.8	0.8	--	--	--	--	--	--	--	
West	Senior Center	628456.30	3656145.00	1361	1.93E-06	2.63E-03															
3	LA I-110 Interstate 110 in Carson	Additional Segment	Los Angeles	North	MEIR	380800.00	3743500.00	950	2.33E-05	2.21E-02	4.98E-02	43.1	45.3	30.6	32.2	49.1	51.6				
				South	MEIR	380800.00	3743500.00	1237	2.24E-05	2.77E-02											
				North	MEIW	380800.00	3743600.00	938	2.33E-05	2.19E-02	4.92E-02	3.4	3.5	--	--	--	--	--	--		
				South	MEIW	380800.00	3743600.00	1221	2.24E-05	2.74E-02											
				North	Day Care	381383.10	3744323.00	123	2.33E-05	2.87E-03	5.53E-03	1.9	2.0	--	--	--	--	--	--	--	
				South	Day Care	381383.10	3744323.00	119	2.24E-05	2.67E-03											
				North	School	381001.20	3743694.00	667	2.33E-05	1.55E-02	2.84E-02	2.2	2.3	--	--	--	--	--	--	--	
				South	School	381001.20	3743694.00	574	2.24E-05	1.29E-02											
				North	Senior Center	380506.70	3743721.00	210	2.33E-05	4.89E-03	9.87E-03	1.3	1.4	--	--	--	--	--	--	--	
				South	Senior Center	380506.70	3743721.00	222	2.24E-05	4.97E-03											

Scenario 4: 2040 Plan Scenario 3 (2040PLSC3), Future Conditions under the Refined Regional Transportation Plan (RTP)
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals	
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)	
4	LA I-710 Interstate 710 in Compton, north of the intersection with SR 91	2012_2035 PDEIR Segment	Los Angeles	North	MEIR	390000.00	3750700.00	579	5.03E-05	2.91E-02								
				South	MEIR	390000.00	3750700.00	682	4.58E-05	3.12E-02	6.04E-02	52.2	54.8	37.1	38.9	59.5	62.5	
				North	MEIW	390428.00	3751262.00	324	5.03E-05	1.63E-02								
				South	MEIW	390428.00	3751262.00	291	4.58E-05	1.33E-02	2.96E-02	2.0	2.1	--	--	--	--	
				North	Day Care	389795.00	3751313.00	164	5.03E-05	8.25E-03								
				South	Day Care	389795.00	3751313.00	176	4.58E-05	8.06E-03	1.63E-02	5.6	5.8	--	--	--	--	
				North	School	389951.66	3751333.90	258	5.03E-05	1.30E-02								
				South	School	389951.66	3751333.90	287	4.58E-05	1.31E-02	2.61E-02	2.0	2.1	--	--	--	--	
				North	Senior Center	391265.90	3750525.00	44.81	5.03E-05	2.25E-03								
				South	Senior Center	391265.90	3750525.00	43.56	4.58E-05	2.00E-03	4.25E-03	0.6	0.6	--	--	--	--	
5	LA SR-60 DB State Road 60 Freeway near Diamond Bar	2012_2035 PDEIR Segment	Los Angeles	East	MEIR	425800.00	3765300.00	1385	2.77E-05	3.84E-02								
				West	MEIR	425800.00	3765300.00	974	2.84E-05	2.77E-02	6.60E-02	57.1	60.0	40.6	42.6	65.1	68.3	
				East	MEIW	425200.00	3765000.00	909	2.77E-05	2.52E-02								
				West	MEIW	425200.00	3765000.00	768	2.84E-05	2.18E-02	4.70E-02	3.2	3.4	--	--	--	--	
				East	Day Care	425255.30	3764985.00	679	2.77E-05	1.88E-02								
				West	Day Care	425255.30	3764985.00	598	2.84E-05	1.70E-02	3.58E-02	12.2	12.8	--	--	--	--	
				East	School	425626.70	3764800.00	242	2.77E-05	6.70E-03								
				West	School	425626.70	3764800.00	225	2.84E-05	6.39E-03	1.31E-02	1.0	1.1	--	--	--	--	
				East	Senior Center	NR	NR	--	2.77E-05	--								
				West	Senior Center	NR	NR	--	2.84E-05	--	--	--	--	--	--	--	--	
6	LA SR-60 SEM State Road 60 Freeway near south El Monte at Peck Road	Additional Segment	Los Angeles	East	MEIR	403200.00	3767100.00	628	3.06E-05	1.92E-02								
				West	MEIR	403200.00	3767100.00	828	3.43E-05	2.84E-02	4.76E-02	41.2	43.3	29.3	30.7	46.9	49.3	
				East	MEIW	403700.00	3766800.00	787	3.06E-05	2.41E-02								
				West	MEIW	403700.00	3766800.00	580	3.43E-05	1.99E-02	4.40E-02	3.0	3.2	--	--	--	--	
				East	Day Care	403373.30	3767584.00	108	3.06E-05	3.30E-03								
				West	Day Care	403373.30	3767584.00	115	3.43E-05	3.94E-03	7.25E-03	2.5	2.6	--	--	--	--	
				East	School	403685.00	3767262.00	188	3.06E-05	5.75E-03								
				West	School	403685.00	3767262.00	207	3.43E-05	7.10E-03	1.29E-02	1.0	1.0	--	--	--	--	
				East	Senior Center	403368.40	3767822.00	70.44	3.06E-05	2.16E-03								
				West	Senior Center	403368.40	3767822.00	73.95	3.43E-05	2.54E-03	4.69E-03	0.6	0.7	--	--	--	--	
7	ORA I-5 Interstate 5 in Orange near intersection of SR-57 and SR-22	Additional Segment	Orange	North	MEIR	419000.00	3737600.00	409	4.45E-05	1.82E-02								
				South	MEIR	419000.00	3737600.00	477	3.67E-05	1.75E-02	3.57E-02	30.9	32.4	21.9	23.0	35.2	37.0	
				North	MEIW	419400.00	3737500.00	290	4.45E-05	1.29E-02								
				South	MEIW	419400.00	3737500.00	242	3.67E-05	8.88E-03	2.18E-02	1.5	1.6	--	--	--	--	
				North	Day Care	418539.00	3737429.00	76.2	4.45E-05	3.39E-03								
				South	Day Care	418539.00	3737429.00	76.68	3.67E-05	2.81E-03	6.21E-03	2.1	2.2	--	--	--	--	
				North	School	419811.55	3738689.28	33.07	4.45E-05	1.47E-03								
				South	School	419811.55	3738689.28	32.34	3.67E-05	1.19E-03	2.66E-03	0.2	0.2	--	--	--	--	
				North	Senior Center	419249.90	3738210.00	111	4.45E-05	4.94E-03								
				South	Senior Center	419249.90	3738210.00	106	3.67E-05	3.89E-03	8.83E-03	1.2	1.3	--	--	--	--	
8	ORA I-405 Interstate 405 in Seal Beach, east of the I-605 interchange	2012_2035 PDEIR Segment	Orange	North	MEIR	402000.00	3737700.00	514	7.67E-05	3.94E-02								
				South	MEIR	402000.00	3737700.00	612	7.56E-05	4.63E-02	8.57E-02	74.1	77.8	52.7	55.3	84.5	88.7	
				North	MEIW	401576.00	3737798.00	257	7.67E-05	1.97E-02								
				South	MEIW	401576.00	3737798.00	327	7.56E-05	2.47E-02	4.44E-02	3.0	3.2	--	--	--	--	
				North	Day Care	NR	NR	--	7.67E-05	--								
				South	Day Care	NR	NR	--	7.56E-05	--	--	--	--	--	--	--	--	
				North	School	NR	NR	--	7.67E-05	--								
				South	School	NR	NR	--	7.56E-05	--	--	--	--	--	--	--	--	
				North	Senior Center	NR	NR	--	7.67E-05	--								
				South	Senior Center	NR	NR	--	7.56E-05	--	--	--	--	--	--	--	--	

Scenario 4: 2040 Plan Scenario 3 (2040PLSC3), Future Conditions under the Refined Regional Transportation Plan (RTP)
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals		
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)		
9	RIV I-10 Interstate 10 in the Banning Area	Additional Segment	Riverside	East	MEIR	511000.00	3754000.00	199	3.71E-05	7.38E-03									
				West	MEIR	511000.00	3754000.00	232	3.77E-05	8.75E-03	1.61E-02	14.0	14.7	9.9	10.4	15.9	16.7		
				East	MEIW	510886.80	3753911.00	367	3.71E-05	1.36E-02									
				West	MEIW	510886.80	3753911.00	450	3.77E-05	1.70E-02	3.06E-02	2.1	2.2	--	--	--	--		
				East	Day Care	510600.00	3754100.00	87.49	3.71E-05	3.25E-03									
				West	Day Care	510600.00	3754100.00	101	3.77E-05	3.81E-03	7.05E-03	2.4	2.5	--	--	--	--		
				East	School	511389.70	3754208.00	81.51	3.71E-05	3.02E-03									
				West	School	511389.70	3754208.00	89.38	3.77E-05	3.37E-03	6.39E-03	0.5	0.5	--	--	--	--		
				East	Senior Center	511164.70	3753944.00	290	3.71E-05	1.08E-02									
West	Senior Center	511164.70	3753944.00	351	3.77E-05	1.32E-02	2.40E-02	3.3	3.4	--	--	--	--						
10	RIV I-15 Interstate 15 near Temecula	Additional Segment	Riverside	North	MEIR	486867.30	3705207.00	983	2.47E-05	2.43E-02									
				South	MEIR	486867.30	3705207.00	718	2.44E-05	1.75E-02	4.18E-02	36.2	38.0	25.7	27.0	41.2	43.3		
				North	MEIW	486700.00	3705100.00	1070	2.47E-05	2.64E-02									
				South	MEIW	486700.00	3705100.00	1740	2.44E-05	4.25E-02	6.89E-02	4.7	4.9	--	--	--	--		
				North	Day Care	486327.80	3705951.00	412	2.47E-05	1.02E-02									
				South	Day Care	486327.80	3705951.00	545	2.44E-05	1.33E-02	2.35E-02	8.0	8.4	--	--	--	--		
				North	School	486791.50	3705381.00	1179	2.47E-05	2.91E-02									
				South	School	486791.50	3705381.00	848	2.44E-05	2.07E-02	4.98E-02	3.9	4.1	--	--	--	--		
				North	Senior Center	NR	NR	--	2.47E-05	--	--	--	--	--	--	--	--		
South	Senior Center	NR	NR	--	2.44E-05	--	--	--	--	--	--	--	--						
11	RIV SR-91 State Road 91 Freeway in Corona, east of the intersection with SR-71	2012_2035 PDEIR Segment	Riverside	East	MEIR	439300.00	3749100.00	594	4.41E-05	2.62E-02									
				West	MEIR	439300.00	3749100.00	687	5.19E-05	3.57E-02	6.19E-02	53.5	56.2	38.0	39.9	61.0	64.0		
				East	MEIW	439864.00	3749063.00	761	4.41E-05	3.36E-02									
				West	MEIW	439864.00	3749063.00	613	5.19E-05	3.18E-02	6.54E-02	4.5	4.7	--	--	--	--		
				East	Day Care	NR	NR	--	4.41E-05	--	--	--	--	--	--	--	--		
				West	Day Care	NR	NR	--	5.19E-05	--	--	--	--	--	--	--	--		
				East	School	NR	NR	--	4.41E-05	--	--	--	--	--	--	--	--		
				West	School	NR	NR	--	5.19E-05	--	--	--	--	--	--	--	--		
				East	Senior Center	NR	NR	--	4.41E-05	--	--	--	--	--	--	--	--		
West	Senior Center	NR	NR	--	5.19E-05	--	--	--	--	--	--	--	--						
12	SB I-15 ONT ¹ Interstate 15 in Ontario	2012_2035 PDEIR Segment	San Bernardino	North	MEIR	449500.00	3771200.00	389	3.12E-05	1.21E-02									
				South	MEIR	449500.00	3771200.00	487	3.17E-05	1.54E-02	2.76E-02	23.9	25.0	16.9	17.8	27.2	28.5		
				North	MEIW	449500.00	3771200.00	389	3.12E-05	1.21E-02									
				South	MEIW	449500.00	3771200.00	487	3.17E-05	1.54E-02	2.76E-02	1.9	2.0	--	--	--	--		
				North	Day Care	NR	NR	--	3.12E-05	--	--	--	--	--	--	--	--		
				South	Day Care	NR	NR	--	3.17E-05	--	--	--	--	--	--	--	--		
				North	School	NR	NR	--	3.12E-05	--	--	--	--	--	--	--	--		
				South	School	NR	NR	--	3.17E-05	--	--	--	--	--	--	--	--		
				North	Senior Center	NR	NR	--	3.12E-05	--	--	--	--	--	--	--	--		
South	Senior Center	NR	NR	--	3.17E-05	--	--	--	--	--	--	--	--						
13	SB I-15 VIC Interstate 15 in the Victorville area	Additional Segment	San Bernardino	North	MEIR	470800.00	3820500.00	1443	1.96E-05	2.83E-02									
				South	MEIR	470800.00	3820500.00	2122	1.98E-05	4.20E-02	7.03E-02	60.8	63.9	43.2	45.4	69.3	72.8		
				North	MEIW	471100.00	3820700.00	1021	1.96E-05	2.00E-02									
				South	MEIW	471100.00	3820700.00	852	1.98E-05	1.69E-02	3.69E-02	2.5	2.6	--	--	--	--		
				North	Day Care	471186.20	3820489.00	460	1.96E-05	9.02E-03									
				South	Day Care	471186.20	3820489.00	419	1.98E-05	8.30E-03	1.73E-02	5.9	6.2	--	--	--	--		
				North	School	470957.20	3821055.00	635	1.96E-05	1.24E-02									
				South	School	470957.20	3821055.00	763	1.98E-05	1.51E-02	2.76E-02	2.1	2.2	--	--	--	--		
				North	Senior Center	NR	NR	--	1.96E-05	--	--	--	--	--	--	--	--		
South	Senior Center	NR	NR	--	1.98E-05	--	--	--	--	--	--	--	--						

Scenario 4: 2040 Plan Scenario 3 (2040PLSC3), Future Conditions under the Refined Regional Transportation Plan (RTP)
Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals			
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)			
14	SB SR-60 State Road 60 Freeway in Ontario, west of the I-15 interchange	2012_2035 PDEIR Segment	San Bernardino	East	MEIR	446200.00	3765600.00	1005	2.60E-05	2.61E-02										
				West	MEIR	446200.00	3765600.00	673	2.53E-05	1.70E-02	4.32E-02	37.3	39.2	26.5	27.8	42.5	44.7			
				East	MEIW	445700.00	3765800.00	698	2.60E-05	1.81E-02										
				West	MEIW	445700.00	3765800.00	952	2.53E-05	2.41E-02	4.22E-02	2.9	3.0	--	--	--	--	--		
				East	Day Care	445523.30	3765239.00	155	2.60E-05	4.03E-03										
				West	Day Care	445523.30	3765239.00	143	2.53E-05	3.62E-03	7.65E-03	2.6	2.7	--	--	--	--	--	--	
				East	School	445523.30	3765239.00	155	2.60E-05	4.03E-03										
				West	School	445523.30	3765239.00	143	2.53E-05	3.62E-03	7.65E-03	0.6	0.6	--	--	--	--	--	--	
				East	Senior Center	NR	NR	--	2.60E-05	--										
				West	Senior Center	NR	NR	--	2.53E-05	--										
15	VEN US-101 SB US 101 Freeway in San Buenaventura near the Ventura Harbor	Additional Segment	Ventura	North	MEIR	295200.00	3793400.00	741	8.50E-06	6.30E-03										
				South	MEIR	295200.00	3793400.00	676	8.60E-06	5.81E-03	1.21E-02	10.5	11.0	7.4	7.8	11.9	12.5			
				North	MEIW	295300.00	3793200.00	1645	8.50E-06	1.40E-02										
				South	MEIW	295300.00	3793200.00	1293	8.60E-06	1.11E-02	2.51E-02	1.7	1.8	--	--	--	--	--		
				North	Day Care	296212.80	3793611.00	143	8.50E-06	1.22E-03										
				South	Day Care	296212.80	3793611.00	133	8.60E-06	1.14E-03	2.36E-03	0.8	0.8	--	--	--	--	--		
				North	School	295785.70	3793241.00	448	8.50E-06	3.81E-03										
				South	School	295785.70	3793241.00	400	8.60E-06	3.44E-03	7.25E-03	0.6	0.6	--	--	--	--	--		
				North	Senior Center	295781.00	3793062.00	790	8.50E-06	6.72E-03										
				South	Senior Center	295781.00	3793062.00	667	8.60E-06	5.74E-03	1.25E-02	1.7	1.8	--	--	--	--	--		
16	VEN US-101 TO US 101 Freeway in Thousand Oaks, east of SR-23	2012_2035 PDEIR Segment	Ventura	North	MEIR	330000.00	3782700.00	1365	2.09E-05	2.85E-02										
				South	MEIR	330000.00	3782700.00	943	2.52E-05	2.38E-02	5.23E-02	45.2	47.5	32.1	33.7	51.6	54.1			
				North	MEIW	329800.00	3782600.00	693	2.09E-05	1.45E-02										
				South	MEIW	329800.00	3782600.00	872	2.52E-05	2.20E-02	3.65E-02	2.5	2.6	--	--	--	--	--		
				North	Day Care	329921.90	3782934.00	493	2.09E-05	1.03E-02										
				South	Day Care	329921.90	3782934.00	423	2.52E-05	1.07E-02	2.10E-02	7.1	7.5	--	--	--	--	--		
				North	School	330108.20	3782369.00	459	2.09E-05	9.59E-03										
				South	School	330108.20	3782369.00	735	2.52E-05	1.85E-02	2.81E-02	2.2	2.3	--	--	--	--	--		
				North	Senior Center	329368.20	3783515.00	158	2.09E-05	3.30E-03										
				South	Senior Center	329368.20	3783515.00	144	2.52E-05	3.63E-03	6.93E-03	0.9	1.0	--	--	--	--	--		

Notes:
1. The I-15 MEIR is an assumed residential receptor at about 100 meters from the freeway because although there are no residential receptors near the segment modeled, there are a number of nearby residential receptors only 2 miles north of the modeled segment and traffic volumes are expected to be similar on I-15 where there are nearby residents.

			Fraction of Time at Home	Age Sensitivity Factors
Residential Breathing Rates are 95th Percentile				
Breathing Rate 3rd Trimester	361	L/kg-day	1	10
Breathing Rate 0 to <2 yrs	1090	L/kg-day	1	10
Breathing Rate 2 to <16 yrs	745	L/kg-day	1	3
Breathing Rate 16 to <70 yrs	290	L/kg-day	0.73	1
Breathing Rate 2 to <9 yrs	861	L/kg-day	1	3
Breathing Rate 16 to <30 yrs	335	L/kg-day	0.73	1
Off-site Worker Breathing Rates are 95th Percentile				
Breathing Rate 3rd Trimester	240	L/kg-day		10
8-hour Breathing Rate 16 to 70 years	230	L/kg-day		1
Day Care and School Breathing Rates are 95th Percentile				
8-hour Breathing Rate 0 to <2 years	1200	L/kg-day		10
8-hour Breathing Rate 2 to <9 years	640	L/kg-day		3
8-hour Breathing Rate 2 to <16 years	520	L/kg-day		3
DPM Cancer Potency	1.1	(mg/kg-day) ⁻¹		
Percentage Risk Increase over DPM	5%	For additional compounds emitted from vehicles (acetaldehyde, benzene, 1,3-butadiene, formaldehyde)		

NR = No Receptor for the category within 1000 m of the freeway.

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals				
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)				
1	IMP I-8 Interstate 8 just east of El Centro	2012_2035 PDEIR Segment	Imperial	East	MEIR	635500.00	3627200.00	1298	6.12E-06	7.94E-03	2.03E-02	17.6	18.4	12.5	13.1	20.0	21.0				
				West	MEIR	635500.00	3627200.00	1985	6.22E-06	1.23E-02											
				East	MEIW	635408.70	3627026.00	1588	6.12E-06	9.72E-03											
				West	MEIW	635408.70	3627026.00	1280	6.22E-06	7.96E-03			1.77E-02	1.2	1.3	--	--	--	--		
				East	Day Care	636187.90	3627252.00	455	6.12E-06	2.78E-03											
				West	Day Care	636187.90	3627252.00	725	6.22E-06	4.51E-03			7.29E-03	2.5	2.6	--	--	--	--	--	
				East	School	635173.30	3627462.00	301	6.12E-06	1.84E-03											
				West	School	635173.30	3627462.00	334	6.22E-06	2.08E-03			3.92E-03	0.3	0.3	--	--	--	--	--	
				East	Senior Center	NR	NR	--	6.12E-06	--											
				West	Senior Center	NR	NR	--	6.22E-06	--											
2	IMP SR-78 State Road 78 Freeway in Westmorland	Additional Segment	Imperial	East	MEIR	628500.00	3656200.00	2421	2.12E-06	5.13E-03	9.38E-03	8.1	8.5	5.8	6.1	9.2	9.7				
				West	MEIR	628500.00	3656200.00	2189	1.94E-06	4.25E-03											
				East	MEIW	628138.20	3656220.00	3479	2.12E-06	7.38E-03			1.31E-02	0.9	0.9	--	--	--	--		
				West	MEIW	628138.20	3656220.00	2936	1.94E-06	5.70E-03											
				East	Day Care	628837.80	3656150.00	1475	2.12E-06	3.13E-03											
				West	Day Care	628837.80	3656150.00	1393	1.94E-06	2.70E-03			5.83E-03	2.0	2.1	--	--	--	--	--	
				East	School	628711.80	3656414.00	785	2.12E-06	1.66E-03											
				West	School	628711.80	3656414.00	830	1.94E-06	1.61E-03			3.27E-03	0.3	0.3	--	--	--	--	--	
				East	Senior Center	628456.30	3656145.00	1447	2.12E-06	3.07E-03											
West	Senior Center	628456.30	3656145.00	1361	1.94E-06	2.64E-03			5.71E-03	0.8	0.8	--	--	--	--	--					
3	LA I-110 Interstate 110 in Carson	Additional Segment	Los Angeles	North	MEIR	380800.00	3743500.00	950	2.34E-05	2.22E-02	4.99E-02	43.2	45.4	30.7	32.2	49.2	51.7				
				South	MEIR	380800.00	3743500.00	1237	2.24E-05	2.77E-02											
				North	MEIW	380800.00	3743600.00	938	2.34E-05	2.19E-02											
				South	MEIW	380800.00	3743600.00	1221	2.24E-05	2.74E-02			4.93E-02	3.4	3.5	--	--	--	--	--	
				North	Day Care	381383.10	3744323.00	123	2.34E-05	2.88E-03											
				South	Day Care	381383.10	3744323.00	119	2.24E-05	2.67E-03			5.54E-03	1.9	2.0	--	--	--	--	--	
				North	School	381001.20	3743694.00	667	2.34E-05	1.56E-02											
				South	School	381001.20	3743694.00	574	2.24E-05	1.29E-02			2.85E-02	2.2	2.3	--	--	--	--	--	
				North	Senior Center	380506.70	3743721.00	210	2.34E-05	4.91E-03											
				South	Senior Center	380506.70	3743721.00	222	2.24E-05	4.97E-03			9.89E-03	1.4	1.4	--	--	--	--	--	

Scenario 5: 2040 Plan Scenario 3B (2040PLSC3B), Future Conditions, Intensified Transportation and Land Use Integration Alternative
Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals			
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)			
4	LA I-710 Interstate 710 in Compton, north of the intersection with SR 91	2012_2035 PDEIR Segment	Los Angeles	North	MEIR	390000.00	3750700.00	579	4.98E-05	2.88E-02										
				South	MEIR	390000.00	3750700.00	682	4.55E-05	3.10E-02	5.99E-02	51.8	54.4	36.8	38.6	59.0	62.0			
				North	MEIW	390428.00	3751262.00	324	4.98E-05	1.61E-02										
				South	MEIW	390428.00	3751262.00	291	4.55E-05	1.32E-02	2.94E-02	2.0	2.1	--	--	--	--			
				North	Day Care	389795.00	3751313.00	164	4.98E-05	8.17E-03										
				South	Day Care	389795.00	3751313.00	176	4.55E-05	8.01E-03										
				North	School	389951.66	3751333.90	258	4.98E-05	1.28E-02	2.59E-02	2.0	2.1	--	--	--	--			
				South	School	389951.66	3751333.90	287	4.55E-05	1.31E-02										
				North	Senior Center	391265.90	3750525.00	44.81	4.98E-05	2.23E-03	4.21E-03	0.6	0.6	--	--	--	--			
				South	Senior Center	391265.90	3750525.00	43.56	4.55E-05	1.98E-03										
5	LA SR-60 DB State Road 60 Freeway near Diamond Bar	2012_2035 PDEIR Segment	Los Angeles	East	MEIR	425800.00	3765300.00	1385	2.78E-05	3.85E-02										
				West	MEIR	425800.00	3765300.00	974	2.84E-05	2.77E-02	6.62E-02	57.2	60.1	40.7	42.7	65.2	68.5			
				East	MEIW	425200.00	3765000.00	909	2.78E-05	2.53E-02										
				West	MEIW	425200.00	3765000.00	768	2.84E-05	2.18E-02	4.71E-02	3.2	3.4	--	--	--	--			
				East	Day Care	425255.30	3764985.00	679	2.78E-05	1.89E-02										
				West	Day Care	425255.30	3764985.00	598	2.84E-05	1.70E-02	3.59E-02	12.2	12.8	--	--	--	--			
				East	School	425626.70	3764800.00	242	2.78E-05	6.73E-03										
				West	School	425626.70	3764800.00	225	2.84E-05	6.39E-03	1.31E-02	1.0	1.1	--	--	--	--			
				East	Senior Center	NR	NR	--	2.78E-05	--										
				West	Senior Center	NR	NR	--	2.84E-05	--										
6	LA SR-60 SEM State Road 60 Freeway near south El Monte at Peck Road	Additional Segment	Los Angeles	East	MEIR	403200.00	3767100.00	628	3.06E-05	1.92E-02										
				West	MEIR	403200.00	3767100.00	828	3.43E-05	2.84E-02	4.76E-02	41.2	43.3	29.3	30.7	46.9	49.3			
				East	MEIW	403700.00	3766800.00	787	3.06E-05	2.41E-02										
				West	MEIW	403700.00	3766800.00	580	3.43E-05	1.99E-02	4.40E-02	3.0	3.2	--	--	--	--			
				East	Day Care	403373.30	3767584.00	108	3.06E-05	3.30E-03										
				West	Day Care	403373.30	3767584.00	115	3.43E-05	3.94E-03	7.25E-03	2.5	2.6	--	--	--	--			
				East	School	403685.00	3767262.00	188	3.06E-05	5.75E-03										
				West	School	403685.00	3767262.00	207	3.43E-05	7.10E-03	1.29E-02	1.0	1.0	--	--	--	--			
				East	Senior Center	403368.40	3767822.00	70.44	3.06E-05	2.16E-03										
				West	Senior Center	403368.40	3767822.00	73.95	3.43E-05	2.54E-03	4.69E-03	0.6	0.7	--	--	--	--			
7	ORA I-5 Interstate 5 in Orange near intersection of SR-57 and SR-22	Additional Segment	Orange	North	MEIR	419000.00	3737600.00	409	4.47E-05	1.83E-02										
				South	MEIR	419000.00	3737600.00	477	3.66E-05	1.75E-02	3.57E-02	30.9	32.5	22.0	23.1	35.2	37.0			
				North	MEIW	419400.00	3737500.00	290	4.47E-05	1.30E-02										
				South	MEIW	419400.00	3737500.00	242	3.66E-05	8.86E-03	2.18E-02	1.5	1.6	--	--	--	--			
				North	Day Care	418539.00	3737429.00	76.2	4.47E-05	3.41E-03										
				South	Day Care	418539.00	3737429.00	76.68	3.66E-05	2.81E-03	6.21E-03	2.1	2.2	--	--	--	--			
				North	School	419811.55	3738689.28	33.07	4.47E-05	1.48E-03										
				South	School	419811.55	3738689.28	32.34	3.66E-05	1.18E-03	2.66E-03	0.2	0.2	--	--	--	--			
				North	Senior Center	419249.90	3738210.00	111	4.47E-05	4.96E-03										
				South	Senior Center	419249.90	3738210.00	106	3.66E-05	3.88E-03	8.84E-03	1.2	1.3	--	--	--	--			
8	ORA I-405 Interstate 405 in Seal Beach, east of the I-605 interchange	2012_2035 PDEIR Segment	Orange	North	MEIR	402000.00	3737700.00	514	7.69E-05	3.95E-02										
				South	MEIR	402000.00	3737700.00	612	7.59E-05	4.65E-02	8.60E-02	74.4	78.1	52.8	55.5	84.8	89.0			
				North	MEIW	401576.00	3737798.00	257	7.69E-05	1.98E-02										
				South	MEIW	401576.00	3737798.00	327	7.59E-05	2.48E-02	4.46E-02	3.0	3.2	--	--	--	--			
				North	Day Care	NR	NR	--	7.69E-05	--										
				South	Day Care	NR	NR	--	7.59E-05	--										
				North	School	NR	NR	--	7.69E-05	--										
				South	School	NR	NR	--	7.59E-05	--										
				North	Senior Center	NR	NR	--	7.69E-05	--										
				South	Senior Center	NR	NR	--	7.59E-05	--										

Scenario 5: 2040 Plan Scenario 3B (2040PLSC3B), Future Conditions, Intensified Transportation and Land Use Integration Alternative
 Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals	
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)	
9	RIV I-10 Interstate 10 in the Banning Area	Additional Segment	Riverside	East	MEIR	511000.00	3754000.00	199	3.65E-05	7.26E-03								
				West	MEIR	511000.00	3754000.00	232	3.71E-05	8.61E-03	1.59E-02	13.7	14.4	9.8	10.2	15.6	16.4	
				East	MEIW	510886.80	3753911.00	367	3.65E-05	1.34E-02								
				West	MEIW	510886.80	3753911.00	450	3.71E-05	1.67E-02	3.01E-02	2.1	2.2	--	--	--	--	
				East	Day Care	510600.00	3754100.00	87.49	3.65E-05	3.19E-03								
				West	Day Care	510600.00	3754100.00	101	3.71E-05	3.75E-03	6.94E-03	2.4	2.5	--	--	--	--	
				East	School	511389.70	3754208.00	81.51	3.65E-05	2.98E-03								
				West	School	511389.70	3754208.00	89.38	3.71E-05	3.32E-03	6.29E-03	0.5	0.5	--	--	--	--	
				East	Senior Center	511164.70	3753944.00	290	3.65E-05	1.06E-02								
West	Senior Center	511164.70	3753944.00	351	3.71E-05	1.30E-02	2.36E-02	3.2	3.4	--	--	--	--					
10	RIV I-15 Interstate 15 near Temecula	Additional Segment	Riverside	North	MEIR	486867.30	3705207.00	983	2.47E-05	2.43E-02								
				South	MEIR	486867.30	3705207.00	718	2.44E-05	1.75E-02	4.18E-02	36.2	38.0	25.7	27.0	41.2	43.3	
				North	MEIW	486700.00	3705100.00	1070	2.47E-05	2.64E-02								
				South	MEIW	486700.00	3705100.00	1740	2.44E-05	4.25E-02	6.89E-02	4.7	4.9	--	--	--	--	
				North	Day Care	486327.80	3705951.00	412	2.47E-05	1.02E-02								
				South	Day Care	486327.80	3705951.00	545	2.44E-05	1.33E-02	2.35E-02	8.0	8.4	--	--	--	--	
				North	School	486791.50	3705381.00	1179	2.47E-05	2.91E-02								
				South	School	486791.50	3705381.00	848	2.44E-05	2.07E-02	4.98E-02	3.9	4.1	--	--	--	--	
				North	Senior Center	NR	NR	--	2.47E-05	--								
South	Senior Center	NR	NR	--	2.44E-05	--												
11	RIV SR-91 State Road 91 Freeway in Corona, east of the intersection with SR-71	2012_2035 PDEIR Segment	Riverside	East	MEIR	439300.00	3749100.00	594	4.38E-05	2.60E-02								
				West	MEIR	439300.00	3749100.00	687	5.11E-05	3.51E-02	6.11E-02	52.9	55.5	37.6	39.4	60.3	63.3	
				East	MEIW	439864.00	3749063.00	761	4.38E-05	3.33E-02								
				West	MEIW	439864.00	3749063.00	613	5.11E-05	3.13E-02	6.47E-02	4.4	4.6	--	--	--	--	
				East	Day Care	NR	NR	--	4.38E-05	--								
				West	Day Care	NR	NR	--	5.11E-05	--								
				East	School	NR	NR	--	4.38E-05	--								
				West	School	NR	NR	--	5.11E-05	--								
				East	Senior Center	NR	NR	--	4.38E-05	--								
West	Senior Center	NR	NR	--	5.11E-05	--												
12	SB I-15 ONT ¹ Interstate 15 in Ontario	2012_2035 PDEIR Segment	San Bernardino	North	MEIR	449500.00	3771200.00	389	3.06E-05	1.19E-02								
				South	MEIR	449500.00	3771200.00	487	3.09E-05	1.50E-02	2.70E-02	23.3	24.5	16.6	17.4	26.6	27.9	
				North	MEIW	449500.00	3771200.00	389	3.06E-05	1.19E-02								
				South	MEIW	449500.00	3771200.00	487	3.09E-05	1.50E-02	2.70E-02	1.8	1.9	--	--	--	--	
				North	Day Care	NR	NR	--	3.06E-05	--								
				South	Day Care	NR	NR	--	3.09E-05	--								
				North	School	NR	NR	--	3.06E-05	--								
				South	School	NR	NR	--	3.09E-05	--								
				North	Senior Center	NR	NR	--	3.06E-05	--								
South	Senior Center	NR	NR	--	3.09E-05	--												
13	SB I-15 VIC Interstate 15 in the Victorville area	Additional Segment	San Bernardino	North	MEIR	470800.00	3820500.00	1443	1.92E-05	2.77E-02								
				South	MEIR	470800.00	3820500.00	2122	1.93E-05	4.10E-02	6.87E-02	59.4	62.4	42.2	44.3	67.7	71.1	
				North	MEIW	471100.00	3820700.00	1021	1.92E-05	1.96E-02								
				South	MEIW	471100.00	3820700.00	852	1.93E-05	1.64E-02	3.60E-02	2.5	2.6	--	--	--	--	
				North	Day Care	471186.20	3820489.00	460	1.92E-05	8.83E-03								
				South	Day Care	471186.20	3820489.00	419	1.93E-05	8.09E-03	1.69E-02	5.8	6.1	--	--	--	--	
				North	School	470957.20	3821055.00	635	1.92E-05	1.22E-02								
				South	School	470957.20	3821055.00	763	1.93E-05	1.47E-02	2.69E-02	2.1	2.2	--	--	--	--	
				North	Senior Center	NR	NR	--	1.92E-05	--								
South	Senior Center	NR	NR	--	1.93E-05	--												

Scenario 5: 2040 Plan Scenario 3B (2040PLSC3B), Future Conditions, Intensified Transportation and Land Use Integration Alternative
Diesel Exhaust HRA for SCAG 2016-2040 RTP/SCS

Segment Number	Freeway	Segment Scenario	County	Direction	Receptor Type	UTM Easting	UTM Northing	Unitized Concentration	Total Emissions	DPM Concentration	Total DPM Concentration	DPM 30-year Cancer Risk	Total 30-year Cancer Risk DPM + Other Chemicals	DPM 9-year MEIR Cancer Risk	Total 9-year MEIR Cancer Risk DPM + Other Chemicals	DPM 70-year MEIR Cancer Risk	Total 70-year MEIR Cancer Risk DPM + Other Chemicals			
						(m)	(m)	(ug/m3 / g/sec)	(g/sec)	(ug/m3)	(ug/m3)	(per million)	(per million)	(per million)	(per million)	(per million)	(per million)			
14	SB SR-60 State Road 60 Freeway in Ontario, west of the I-15 interchange	2012_2035 PDEIR Segment	San Bernardino	East	MEIR	446200.00	3765600.00	1005	3.27E-05	3.29E-02										
				West	MEIR	446200.00	3765600.00	673	2.79E-05	1.88E-02	5.16E-02	44.7	46.9	31.7	33.3	50.9	53.5			
				East	MEIW	445700.00	3765800.00	698	3.27E-05	2.28E-02										
				West	MEIW	445700.00	3765800.00	952	2.79E-05	2.66E-02	4.94E-02	3.4	3.5	--	--	--	--			
				East	Day Care	445523.30	3765239.00	155	3.27E-05	5.07E-03										
				West	Day Care	445523.30	3765239.00	143	2.79E-05	3.99E-03	9.06E-03	3.1	3.2	--	--	--	--			
				East	School	445523.30	3765239.00	155	3.27E-05	5.07E-03	9.06E-03	0.7	0.7	--	--	--	--			
				West	School	445523.30	3765239.00	143	2.79E-05	3.99E-03										
				East	Senior Center	NR	NR	--	3.27E-05	--	--	--	--	--	--	--	--	--	--	--
				West	Senior Center	NR	NR	--	2.79E-05	--	--	--	--	--	--	--	--	--	--	--
15	VEN US-101 SB US 101 Freeway in San Buenaventura near the Ventura Harbor	Additional Segment	Ventura	North	MEIR	295200.00	3793400.00	741	8.10E-06	6.00E-03										
				South	MEIR	295200.00	3793400.00	676	8.21E-06	5.55E-03	1.16E-02	10.0	10.5	7.1	7.5	11.4	12.0			
				North	MEIW	295300.00	3793200.00	1645	8.10E-06	1.33E-02										
				South	MEIW	295300.00	3793200.00	1293	8.21E-06	1.06E-02	2.39E-02	1.6	1.7	--	--	--	--			
				North	Day Care	296212.80	3793611.00	143	8.10E-06	1.16E-03										
				South	Day Care	296212.80	3793611.00	133	8.21E-06	1.09E-03	2.25E-03	0.8	0.8	--	--	--	--			
				North	School	295785.70	3793241.00	448	8.10E-06	3.63E-03										
				South	School	295785.70	3793241.00	400	8.21E-06	3.28E-03	6.91E-03	0.5	0.6	--	--	--	--			
				North	Senior Center	295781.00	3793062.00	790	8.10E-06	6.40E-03										
				South	Senior Center	295781.00	3793062.00	667	8.21E-06	5.48E-03	1.19E-02	1.6	1.7	--	--	--	--			
16	VEN US-101 TO US 101 Freeway in Thousand Oaks, east of SR-23	2012_2035 PDEIR Segment	Ventura	North	MEIR	330000.00	3782700.00	1365	1.98E-05	2.70E-02										
				South	MEIR	330000.00	3782700.00	943	2.39E-05	2.25E-02	4.96E-02	42.9	45.0	30.5	32.0	48.9	51.3			
				North	MEIW	329800.00	3782600.00	693	1.98E-05	1.37E-02										
				South	MEIW	329800.00	3782600.00	872	2.39E-05	2.08E-02	3.46E-02	2.4	2.5	--	--	--	--			
				North	Day Care	329921.90	3782934.00	493	1.98E-05	9.76E-03										
				South	Day Care	329921.90	3782934.00	423	2.39E-05	1.01E-02	1.99E-02	6.8	7.1	--	--	--	--			
				North	School	330108.20	3782369.00	459	1.98E-05	9.09E-03										
				South	School	330108.20	3782369.00	735	2.39E-05	1.76E-02	2.67E-02	2.1	2.2	--	--	--	--			
				North	Senior Center	329368.20	3783515.00	158	1.98E-05	3.13E-03										
				South	Senior Center	329368.20	3783515.00	144	2.39E-05	3.44E-03	6.57E-03	0.9	0.9	--	--	--	--			

Notes:
1. The I-15 MEIR is an assumed residential receptor at about 100 meters from the freeway because although there are no residential receptors near the segment modeled, there are a number of nearby residential receptors only 2 miles north of the modeled segment and traffic volumes are expected to be similar on I-15 where there are nearby residents.

APPENDIX E

Potential Cancer Risk Summary from MOVES2014



APPENDIX E: POTENTIAL CANCER RISK SUMMARY FROM MOVES2014

Kleinfelder was contracted by Sapphos Environmental, Inc. (Sapphos) through Southern California Association of Governments (SCAG) to prepare the health risk assessment (HRA) for sixteen freeway segments included in the 2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/STS) Program Environmental Impact Report (PEIR). Two models are typically used for highway emissions modeling: California Air Resources Board's (CARB's) EMFAC model and United States Environmental Protection Agency's (USEPA's) MOVES model. EMFAC2014 is used for calculating the diesel particulate matter (DPM) emission rates for the freeway traffic, and MOVES2014 is used to calculate the toxic emissions from the additional chemicals of concern. Due to time required to run the simulations required for this analysis and insignificant contributions to the overall risk from the additional chemicals of concern, the following methodology was adopted.

The MOVES2014 model calculates emissions from criteria and toxic pollutants from vehicles to be included as part of the HRA. Toxic air contaminants include the remaining four toxics for this analysis – acetaldehyde, benzene, 1,3-butadiene, and formaldehyde. These toxics account for only about 3.7% of the total risk while DPM makes up the remaining 96.3%, as determined by the HRA performed for the previous PEIR (Sierra Research, 2011). Risk from freeways is relatively large (100's to 1,000's of potential cancer risk per million exposed persons), therefore 3.7% is a relatively small percentage of the total pollutants contributing towards the risk. In addition, the MOVES2014 model is a very resource-intensive model that can take several to tens of hours per model run. For these reasons, Kleinfelder ran a sensitivity analysis involving running MOVES2014 for the cross-section of diesel vehicles traveling the freeway, calculated a potential cancer risk of each toxic pollutant to be analyzed, and demonstrated the similarities to data presented in the previous HRA (which was based on older USEPA emission models, specifically MOBILE6.2a).

The potential cancer risk from travel on the freeways is a function of traffic volume for each vehicle class (miles per year), emission factors per vehicle class (grams/mile), potential exposure of persons to the emissions (concentration and duration), and cancer slope factors (potency) of each chemical the person is exposed to. As discussed above, Sierra Research calculated that DPM was responsible for 96.3% of the total risk (from DPM, acetaldehyde, benzene, 1,3-butadiene, and formaldehyde) on a sample I-15 segment in the previous HRA. That calculation was based on EMFAC2007 and MOBILE6.2a emissions (predecessor models). EMFAC does not give individual toxic emission factors, thus the use of MOBILE6.2a and MOVES2014 is required to provide the toxics breakdown.

Kleinfelder confirmed that the output from MOVES2014 is consistent with the results found in the previous PEIR based on MOBILE6.2a. We did this by obtaining emission factors by vehicle class for DPM, acetaldehyde, benzene, 1,3-butadiene, and formaldehyde, and then calculating a "Potential Risk Factor" for each vehicle class and chemical. The "Potential Risk Factor" accounts for the different chemical potencies and emission factors of each chemical. The "Potential Risk Factor" calculated and shown in Attachment A is the emission factor (g/mile) times the cancer

slope factor (mg/kg-day)⁻¹). Basically, the Potential Risk Factor is a relative measure of risk, assuming that exposure and vehicle miles are constant.

The MOVES2014 data summaries in Attachment A show that DPM is responsible for 96.1% to 96.3% of the total risk for all vehicle classes, and nearly 99% of the total risk for heavy duty diesel fueled vehicles (combination long-haul vehicle class), which is the primary contributor to total cancer risk from all vehicles traveling on the freeway. These results are very consistent with the previous PEIR.

It is recognized that the vehicle miles are not constant for the individual vehicle classes. However, per the tables in Attachment A, the ratio of DPM risk to total risk does not vary much among vehicle classes. Likewise, the ratios of DPM and other toxics risk (acetaldehyde, benzene, 1,3-butadiene, and formaldehyde) to total risk by vehicle class will not change. Also, the relative risk from non-diesel vehicles is one to two orders of magnitude less than the relative risk from diesel-fueled vehicles. Accordingly, even if actual vehicle miles were considered for each vehicle class, the result that DPM is responsible for about 96% or more of the total risk would not change. (Note that the previous PEIR conclusion that DPM was responsible for 96.3% of the risk did account for the different miles traveled per vehicle class. Again, Kleinfelder's relative risk calculations with MOVES2014 are consistent with that result.)

Accordingly, Kleinfelder proceeded with basing the risk calculations on EMFAC2014 DPM (only) emission factors and then increase the DPM-only risk by 5% (conservative) to account for the additional toxic chemicals of acetaldehyde, benzene, 1, 3-butadiene, and formaldehyde, rather than running MOVES2014 for the toxics.

LIMITATIONS

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the Southern California area, under similar conditions and at the date the services are provided. Our conclusions, opinions, and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee, or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

Included:

Attachment A: Potential Cancer Risk Summary from MOVES2014

ATTACHMENT A

POTENTIAL CANCER RISK SUMMARY FROM MOVES2014

SCAG RTP - Potential Cancer Risk Summary from MOVES2014

Summer Months Potential Risk Factor

Vehicle Type	Fuel Type	DPM	Acetaldehyde	Benzene	1,3-Butadiene	Formaldehyde	Total	DPM/Total	
Motorcycle	Gasoline	-	4.12E-05	2.08E-03	0.00E+00	1.90E-04	2.31E-03	-	
Passenger Car		-	4.84E-07	2.44E-05	0.00E+00	2.23E-06	2.71E-05	-	
Passenger Truck		-	8.34E-07	4.21E-05	0.00E+00	3.84E-06	4.68E-05	-	
Light Commercial Truck		-	8.22E-07	4.15E-05	0.00E+00	3.79E-06	4.61E-05	-	
Transit Bus		-	5.04E-06	2.54E-04	0.00E+00	2.32E-05	2.83E-04	-	
School Bus		-	3.94E-06	1.99E-04	0.00E+00	1.81E-05	2.21E-04	-	
Refuse Truck		-	1.74E-06	8.79E-05	0.00E+00	8.02E-06	9.76E-05	-	
Single Unit Short-haul Truck		-	2.01E-06	1.01E-04	0.00E+00	9.25E-06	1.13E-04	-	
Motor Home		-	3.01E-06	1.52E-04	0.00E+00	1.39E-05	1.69E-04	-	
Passenger Car		Diesel	2.16E-03	3.01E-06	5.61E-06	2.11E-06	1.98E-05	2.19E-03	98.6%
Passenger Truck	8.02E-03		1.45E-05	2.71E-05	1.17E-05	9.47E-05	8.17E-03	98.2%	
Light Commercial Truck	7.10E-03		1.28E-05	2.39E-05	1.04E-05	8.36E-05	7.23E-03	98.2%	
Intercity Bus	2.14E-02		2.30E-05	4.39E-05	2.98E-05	1.45E-04	2.17E-02	98.9%	
Transit Bus	1.62E-02		2.17E-05	4.09E-05	2.23E-05	1.39E-04	1.64E-02	98.6%	
School Bus	1.40E-02		2.49E-05	4.76E-05	3.31E-05	1.56E-04	1.43E-02	98.2%	
Refuse Truck	1.43E-02		1.94E-05	3.62E-05	1.39E-05	1.28E-04	1.45E-02	98.6%	
Single Unit Short-haul Truck	7.93E-03		2.09E-05	3.90E-05	1.52E-05	1.37E-04	8.15E-03	97.4%	
Single Unit Long-haul Truck	7.86E-03		2.10E-05	3.91E-05	1.54E-05	1.38E-04	8.07E-03	97.4%	
Motor Home	1.05E-02		2.27E-05	4.28E-05	2.23E-05	1.46E-04	1.07E-02	97.8%	
Combination Short-haul Truck	1.38E-02		1.97E-05	3.67E-05	1.49E-05	1.29E-04	1.40E-02	98.6%	
Combination Long-haul Truck	1.67E-02		2.02E-05	3.79E-05	1.73E-05	1.31E-04	1.69E-02	98.8%	
Potential Risk Factor			1.40E-01	2.83E-04	3.40E-03	2.08E-04	1.72E-03	1.46E-01	96.1%

Winter Months Potential Risk Factor

Vehicle Type	Fuel Type	DPM	Acetaldehyde	Benzene	1,3-Butadiene	Formaldehyde	Total	DPM/Total	
Motorcycle	Gasoline	-	3.88E-05	1.74E-03	0.00E+00	1.75E-04	1.95E-03	-	
Passenger Car		-	3.81E-07	1.71E-05	0.00E+00	1.71E-06	1.92E-05	-	
Passenger Truck		-	6.61E-07	2.96E-05	0.00E+00	2.97E-06	3.32E-05	-	
Light Commercial Truck		-	6.52E-07	2.92E-05	0.00E+00	2.93E-06	3.27E-05	-	
Transit Bus		-	4.75E-06	2.12E-04	0.00E+00	2.14E-05	2.39E-04	-	
School Bus		-	3.71E-06	1.66E-04	0.00E+00	1.67E-05	1.86E-04	-	
Refuse Truck		-	1.64E-06	7.34E-05	0.00E+00	7.38E-06	8.24E-05	-	
Single Unit Short-haul Truck		-	1.89E-06	8.46E-05	0.00E+00	8.51E-06	9.50E-05	-	
Motor Home		-	2.84E-06	1.27E-04	0.00E+00	1.28E-05	1.43E-04	-	
Passenger Car		Diesel	2.16E-03	2.52E-06	4.69E-06	1.76E-06	1.66E-05	2.19E-03	98.8%
Passenger Truck	8.02E-03		1.22E-05	2.28E-05	9.83E-06	7.96E-05	8.15E-03	98.5%	
Light Commercial Truck	7.10E-03		1.08E-05	2.01E-05	8.74E-06	7.03E-05	7.21E-03	98.5%	
Intercity Bus	2.14E-02		2.30E-05	4.39E-05	2.98E-05	1.45E-04	2.17E-02	98.9%	
Transit Bus	1.62E-02		2.17E-05	4.09E-05	2.23E-05	1.39E-04	1.64E-02	98.6%	
School Bus	1.40E-02		2.49E-05	4.76E-05	3.31E-05	1.56E-04	1.43E-02	98.2%	
Refuse Truck	1.43E-02		1.94E-05	3.62E-05	1.39E-05	1.28E-04	1.45E-02	98.6%	
Single Unit Short-haul Truck	7.93E-03		2.09E-05	3.90E-05	1.52E-05	1.37E-04	8.15E-03	97.4%	
Single Unit Long-haul Truck	7.86E-03		2.10E-05	3.91E-05	1.54E-05	1.38E-04	8.07E-03	97.4%	
Motor Home	1.05E-02		2.27E-05	4.28E-05	2.23E-05	1.46E-04	1.07E-02	97.8%	
Combination Short-haul Truck	1.38E-02		1.97E-05	3.67E-05	1.49E-05	1.29E-04	1.40E-02	98.6%	
Combination Long-haul Truck	1.67E-02		2.02E-05	3.79E-05	1.73E-05	1.31E-04	1.69E-02	98.8%	
Potential Risk Factor			1.40E-01	2.74E-04	2.89E-03	2.05E-04	1.67E-03	1.45E-01	96.5%

Potential Risk Factor = Emission Factor * Slope Factor [(g/mi)*(mg/kg-day)^-1]

SCAG RTP - Potential Cancer Risk Summary from MOVES2014

Summer Months Emission Factors (g/mi)

Vehicle Type	Fuel Type	VOC	CO	NOx	PM10	PM2.5	SOx	DPM	Acetaldehyde	Benzene	1,3-Butadiene	Formaldehyde
Motorcycle	Gasoline	0.4612	10.8997	0.7880	0.0231	0.0204	0.0025	-	0.0041	0.0208	0.00000	0.0090
Passenger Car		0.0054	1.1166	0.0331	0.0018	0.0016	0.0011	-	0.0000	0.0002	0.00000	0.0001
Passenger Truck		0.0093	1.6606	0.0582	0.0027	0.0024	0.0016	-	0.0001	0.0004	0.00000	0.0002
Light Commercial Truck		0.0092	1.6658	0.0628	0.0029	0.0025	0.0016	-	0.0001	0.0004	0.00000	0.0002
Transit Bus		0.0564	3.1148	0.5058	0.0235	0.0208	0.0084	-	0.0005	0.0025	0.00000	0.0011
School Bus		0.0441	2.7956	0.4266	0.0159	0.0141	0.0058	-	0.0004	0.0020	0.00000	0.0009
Refuse Truck		0.0195	0.8278	0.1245	0.0223	0.0197	0.0090	-	0.0002	0.0009	0.00000	0.0004
Single Unit Short-haul Truck		0.0225	1.4665	0.2435	0.0096	0.0085	0.0051	-	0.0002	0.0010	0.00000	0.0004
Motor Home		0.0337	2.1518	0.3289	0.0137	0.0121	0.0055	-	0.0003	0.0015	0.00000	0.0007
Passenger Car		0.0044	1.2332	0.0327	0.0020	0.0018	0.0016	0.0020	0.0003	0.0001	0.00000	0.0009
Passenger Truck	0.0214	0.8159	0.2094	0.0073	0.0067	0.0043	0.0073	0.0014	0.0003	0.00002	0.0045	
Light Commercial Truck	0.0190	0.9319	0.1792	0.0065	0.0059	0.0039	0.0065	0.0013	0.0002	0.00002	0.0040	
Intercity Bus	0.0377	0.3093	1.1806	0.0195	0.0179	0.0143	0.0195	0.0023	0.0004	0.00005	0.0069	
Transit Bus	0.0336	0.2910	1.1031	0.0147	0.0135	0.0128	0.0147	0.0022	0.0004	0.00004	0.0066	
School Bus	0.0410	0.3049	0.8048	0.0127	0.0117	0.0081	0.0127	0.0025	0.0005	0.00006	0.0074	
Refuse Truck	0.0282	0.2619	1.0355	0.0130	0.0119	0.0141	0.0130	0.0019	0.0004	0.00002	0.0061	
Single Unit Short-haul Truck	0.0304	0.2472	0.4512	0.0072	0.0066	0.0066	0.0072	0.0021	0.0004	0.00003	0.0065	
Single Unit Long-haul Truck	0.0306	0.2444	0.4297	0.0071	0.0066	0.0060	0.0071	0.0021	0.0004	0.00003	0.0066	
Motor Home	0.0349	0.2754	0.6013	0.0095	0.0088	0.0074	0.0095	0.0023	0.0004	0.00004	0.0070	
Combination Short-haul Truck	0.0288	0.2657	1.0543	0.0125	0.0115	0.0143	0.0125	0.0020	0.0004	0.00002	0.0061	
Combination Long-haul Truck	0.0302	0.2712	1.1178	0.0152	0.0139	0.0145	0.0152	0.0020	0.0004	0.00003	0.0063	
Cancer Risk Slope Factors [(mg/kg-day)⁻¹]								1.1	0.01	0.1	0.6	0.021

Winter Months Emission Factors (g/mi)

Vehicle Type	Fuel Type	VOC	CO	NOx	PM10	PM2.5	SOx	DPM	Acetaldehyde	Benzene	1,3-Butadiene	Formaldehyde
Motorcycle	Gasoline	0.3853	11.5188	0.9701	0.0218	0.0193	0.0025	-	0.0039	0.0174	0.00000	0.0083
Passenger Car		0.0038	0.6055	0.0308	0.0017	0.0015	0.0010	-	0.0000	0.0002	0.00000	0.0001
Passenger Truck		0.0066	0.9163	0.0545	0.0025	0.0022	0.0014	-	0.0001	0.0003	0.00000	0.0001
Light Commercial Truck		0.0065	0.9193	0.0588	0.0027	0.0024	0.0015	-	0.0001	0.0003	0.00000	0.0001
Transit Bus		0.0471	3.2917	0.6227	0.0221	0.0196	0.0074	-	0.0005	0.0021	0.00000	0.0010
School Bus		0.0368	2.9544	0.5252	0.0150	0.0133	0.0051	-	0.0004	0.0017	0.00000	0.0008
Refuse Truck		0.0163	0.8749	0.1532	0.0210	0.0186	0.0080	-	0.0002	0.0007	0.00000	0.0004
Single Unit Short-haul Truck		0.0188	1.5498	0.2998	0.0091	0.0080	0.0044	-	0.0002	0.0008	0.00000	0.0004
Motor Home		0.0282	2.2741	0.4049	0.0129	0.0114	0.0048	-	0.0003	0.0013	0.00000	0.0006
Passenger Car		0.0036	0.6328	0.0285	0.0020	0.0018	0.0014	0.0020	0.0003	0.0000	0.00000	0.0008
Passenger Truck	0.0180	0.4261	0.1846	0.0073	0.0067	0.0039	0.0073	0.0012	0.0002	0.00002	0.0038	
Light Commercial Truck	0.0159	0.4866	0.1580	0.0065	0.0059	0.0035	0.0065	0.0011	0.0002	0.00001	0.0033	
Intercity Bus	0.0377	0.3093	1.3639	0.0195	0.0179	0.0127	0.0195	0.0023	0.0004	0.00005	0.0069	
Transit Bus	0.0336	0.2910	1.2744	0.0147	0.0135	0.0113	0.0147	0.0022	0.0004	0.00004	0.0066	
School Bus	0.0410	0.3049	0.9297	0.0127	0.0117	0.0070	0.0127	0.0025	0.0005	0.00006	0.0074	
Refuse Truck	0.0282	0.2619	1.1962	0.0130	0.0119	0.0125	0.0130	0.0019	0.0004	0.00002	0.0061	
Single Unit Short-haul Truck	0.0304	0.2472	0.5213	0.0072	0.0066	0.0056	0.0072	0.0021	0.0004	0.00003	0.0065	
Single Unit Long-haul Truck	0.0306	0.2444	0.4964	0.0071	0.0066	0.0052	0.0071	0.0021	0.0004	0.00003	0.0066	
Motor Home	0.0349	0.2754	0.6947	0.0095	0.0088	0.0064	0.0095	0.0023	0.0004	0.00004	0.0070	
Combination Short-haul Truck	0.0288	0.2657	1.2179	0.0125	0.0115	0.0126	0.0125	0.0020	0.0004	0.00002	0.0061	
Combination Long-haul Truck	0.0302	0.2712	1.2913	0.0152	0.0139	0.0128	0.0152	0.0020	0.0004	0.00003	0.0063	
Cancer Risk Slope Factors [(mg/kg-day)⁻¹]								1.1	0.01	0.1	0.6	0.021

APPENDIX F

Electronic Copies of Dispersion Model and HARP 2 Input and Result Files
