Interstate-405 Improvement Project

Supplement to the Air Quality Report

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1.0 Introduction

An Air Quality Report was prepared on May 4, 2011, to support the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Interstate 405 (I-405) Improvement Project (proposed project). This supplemental document is a technical update to the Air Quality Report that focuses on revised traffic data prepared for the proposed project and associated emissions updates. The primary technical update is related to California Air Resources Board's (CARB) release of the EMFAC2011 Motor Vehicle Emission Inventory Model after completion of the Air Quality Report. EMFAC2011 was released by the CARB in January 2013 and made available by U.S. EPA for conformity analysis purposes on March 6, 2013. This supplemental document also updates the regional and localized transportation conformity analyses. In summary, the conclusions presented in this supplemental document are consistent with the conclusions presented in the Air Quality Report.

2.0 Project Summary

The description of alternatives presented in the Air Quality Report remains accurate. The proposed project covers a distance of approximately 14 miles. Within the limits of the proposed project, I-405 is a controlled-access highway facility with a fenced right-of-way (ROW), separated by grade from crossing traffic, with vehicular access limited to interchanges. Within the project area, I-405 consists of 8 to 12 mixed-flow general purpose (GP) lanes and two high-occupancy vehicle (HOV) lanes. There are three proposed Build Alternatives. Alternative 1 includes one additional GP lane in each direction and interchange reconfigurations at Euclid Street, Ellis Avenue, Brookhurst Street, Magnolia Street, Warner Avenue, Beach Boulevard, and Westminster Boulevard. Alternative 2 would add one GP lane in each direction of I-405 from Euclid Street to the Interstate-605 (I-605) interchange (as in Alternative 1), plus add a second GP lane in the northbound direction from Brookhurst Street to the SR-22/7th Street interchange and a second GP lane in the southbound direction from the Seal Beach Boulevard on-ramp to Brookhurst Street. Alternative 3 would add one GP lane in each direction of I-405 from Euclid Street to the I-605 interchange (as in Alternatives 1 and 2), plus add a tolled express lane in each direction of I-405 from SR-73 to I-605. The tolled express lane would be placed beside the existing HOV lane in each direction. The existing HOV lanes and new toll lanes would be managed jointly as an Express Lane Facility with two lanes in each direction. Refer to the Final EIR/EIS for additional detail related to the alternatives.

3.0 Traffic Data

The traffic data for the air quality analysis are derived from data presented and summarized in the I-405 Improvement Project EIR/EIS as revised for final release. The vehicle miles traveled (VMT) for each alternative by segment and lane type are presented in Table 1.

Table 1. Vehicle Miles Traveled by Segment

Scenario	Automobile VMT					
	Northbound			Southbound		
	GP	HOV	Truck	GP	HOV	Truck
2009 EXISTING						
Morning Peak Period (6:00 AM - 9:00 AM)						
SR-73 to Brookhurst	87,143	8,273	2,695	103,376	10,002	3,197
Brookhurst to SR-22 East	151,136	30,190	5,482	133,922	26,073	4,857
SR-22 East to I-605	111,662	14,258	4,050	106,867	11,221	3,876
Evening Peak Period (3:00 PM - 7:00 PM)						
SR-73 to Brookhurst	114,985	19,716	3,556	107,861	15,075	3,336
Brookhurst to SR-22 East	205,248	44,380	7,444	192,580	42,017	6,985
SR-22 East to I-605	139,592	20,454	5,063	153,265	20,083	5,559
Non-Peak Periods						
SR-73 to Brookhurst	225,501	10,341	6,974	275,091	3,746	8,508
Brookhurst to SR-22 East	422,758	40,731	15,333	469,274	26,157	17,020
SR-22 East to I-605	262,794	8,718	9,531	346,669	4,458	12,573
2020 NO BUILD ALTERNATIVE						
Morning Peak Period (6:00 AM - 9:00 AM)						
SR-73 to Brookhurst	149,071	19,035	5,407	164,949	23,022	5,983
Brookhurst to SR-22 East	240,943	46,146	8,739	213,937	44,475	7,759
SR-22 East to I-605	163,722	37,183	5,938	145,491	35,992	5,277
Evening Peak Period (3:00 PM - 7:00 PM)						
SR-73 to Brookhurst	223,844	28,336	8,119	201,597	25,836	7,312
Brookhurst to SR-22 East	347,838	66,043	12,616	306,457	58,906	11,115
SR-22 East to I-605	221,904	49,954	8,048	216,136	49,210	7,839
Non-Peak Periods						
SR-73 to Brookhurst	195,662	9,503	7,097	194,265	3,308	7,046
Brookhurst to SR-22 East	304,609	45,533	11,048	297,993	42,463	10,808
SR-22 East to I-605	180,297	52,084	6,539	213,329	41,112	7,737
2020 ALTERNATIVE 1						
Morning Peak Period (6:00 AM - 9:00 AM)						
SR-73 to Brookhurst	143,284	18,773	4,431	166,002	23,056	5,134
Brookhurst to SR-22 East	244,444	38,632	8,866	223,822	38,359	8,118
SR-22 East to I-605	161,941	34,335	5,874	149,384	33,923	5,418
Evening Peak Period (3:00 PM - 7:00 PM)						
SR-73 to Brookhurst	215,877	27,974	6,677	193,498	25,471	5,984
Brookhurst to SR-22 East	354,082	55,341	12,842	310,474	49,295	11,261
SR-22 East to I-605	220,226	46,173	7,987	213,456	45,440	7,742
Non-Peak Periods						
SR-73 to Brookhurst	213,283	10,218	6,596	205,123	3,723	6,344
Brookhurst to SR-22 East	348,453	30,088	12,638	333,230	27,337	12,086
SR-22 East to I-605	205,826	45,704	7,465	231,969	36,193	8,413

Scenario	Automobile VMT					
	Northbound			Southbound		
	GP	HOV	Truck	GP	HOV	Truck
2020 ALTERNATIVE 2						
Morning Peak Period (6:00 AM - 9:00 AM)						
SR-73 to Brookhurst	136,702	18,511	4,228	176,306	23,524	5,453
Brookhurst to SR-22 East	244,230	33,245	8,858	250,192	33,561	9,074
SR-22 East to I-605	160,730	30,656	5,830	165,430	31,107	6,000
Evening Peak Period (3:00 PM - 7:00 PM)						
SR-73 to Brookhurst	206,719	27,610	6,393	184,324	25,104	5,701
Brookhurst to SR-22 East	355,076	47,670	12,878	309,725	42,400	11,234
SR-22 East to I-605	219,384	41,267	7,957	211,532	40,552	7,672
Non-Peak Periods						
SR-73 to Brookhurst	229,941	10,935	7,112	204,900	3,705	6,337
Brookhurst to SR-22 East	392,309	18,766	14,229	348,530	16,690	12,641
SR-22 East to I-605	241,719	29,090	8,767	241,731	28,962	8,767
2020 ALTERNATIVE 3						
Morning Peak Period (6:00 AM - 9:00 AM)						
SR-73 to Brookhurst	137,501	27,893	4,987	170,413	30,781	6,181
Brookhurst to SR-22 East	242,529	52,928	8,796	223,937	58,807	8,122
SR-22 East to I-605	173,528	31,272	6,294	166,134	31,272	6,026
Evening Peak Period (3:00 PM - 7:00 PM)						
SR-73 to Brookhurst	191,016	41,232	6,928	191,647	37,366	6,951
Brookhurst to SR-22 East	319,773	78,777	11,598	304,227	77,463	11,034
SR-22 East to I-605	217,351	41,892	7,883	234,578	41,892	8,508
Non-Peak Periods						
SR-73 to Brookhurst	225,614	15,486	8,183	187,983	7,107	6,818
Brookhurst to SR-22 East	377,908	28,750	13,707	322,233	25,807	11,687
SR-22 East to I-605	238,522	14,061	8,651	225,357	13,950	8,174
2040 NO BUILD ALTERNATIVE						
Morning Peak Period (6:00 AM - 9:00 AM)						
SR-73 to Brookhurst	171,851	21,285	6,233	229,897	28,066	8,338
Brookhurst to SR-22 East	277,898	51,636	10,079	299,932	54,923	10,878
SR-22 East to I-605	189,230	42,381	6,863	202,168	44,830	7,333
Evening Peak Period (3:00 PM - 7:00 PM)						
SR-73 to Brookhurst	265,592	32,594	9,633	232,234	28,878	8,423
Brookhurst to SR-22 East	396,392	72,972	14,377	344,315	64,217	12,488
SR-22 East to I-605	259,476	57,631	9,411	244,780	54,861	8,878
Non-Peak Periods						
SR-73 to Brookhurst	202,931	9,954	7,360	159,922	1,318	5,800
Brookhurst to SR-22 East	298,919	47,402	10,842	247,617	40,892	8,981
SR-22 East to I-605	181,042	58,197	6,566	181,933	41,740	6,599

Scenario	Automobile VMT					
	Northbound			Southbound		
	GP	HOV	Truck	GP	HOV	Truck
2040 ALTERNATIVE 1						
Morning Peak Period (6:00 AM - 9:00 AM)						
SR-73 to Brookhurst	164,643	20,970	5,092	219,566	27,615	6,791
Brookhurst to SR-22 East	283,745	43,595	10,291	305,277	46,315	11,072
SR-22 East to I-605	188,043	39,098	6,820	200,378	41,237	7,268
Evening Peak Period (3:00 PM - 7:00 PM)						
SR-73 to Brookhurst	255,397	32,148	7,899	222,147	28,438	6,871
Brookhurst to SR-22 East	406,227	61,676	14,734	351,010	54,200	12,731
SR-22 East to I-605	258,836	53,211	9,388	242,775	50,646	8,805
Non-Peak Periods						
SR-73 to Brookhurst	225,196	10,868	6,965	185,062	2,349	5,724
Brookhurst to SR-22 East	352,420	31,476	12,782	299,052	27,210	10,846
SR-22 East to I-605	213,267	50,983	7,735	212,980	37,525	7,725
2040 ALTERNATIVE 2						
Morning Peak Period (6:00 AM - 9:00 AM)						
SR-73 to Brookhurst	156,503	18,576	4,840	209,627	24,302	6,483
Brookhurst to SR-22 East	285,048	34,010	10,339	308,021	35,894	11,172
SR-22 East to I-605	187,030	31,568	6,783	200,176	33,085	7,260
Evening Peak Period (3:00 PM - 7:00 PM)						
SR-73 to Brookhurst	243,768	31,699	7,539	210,800	27,996	6,520
Brookhurst to SR-22 East	409,773	53,562	14,862	352,008	46,990	12,767
SR-22 East to I-605	258,498	47,823	9,376	241,047	45,438	8,743
Non-Peak Periods						
SR-73 to Brookhurst	246,509	13,865	7,624	207,848	6,243	6,428
Brookhurst to SR-22 East	407,582	23,431	14,783	350,361	21,249	12,707
SR-22 East to I-605	253,338	40,356	9,188	245,762	35,135	8,914
2040 ALTERNATIVE 3						
Morning Peak Period (6:00 AM - 9:00 AM)						
SR-73 to Brookhurst	165,010	27,893	5,985	211,440	30,781	7,669
Brookhurst to SR-22 East	296,915	52,928	10,769	292,455	58,807	10,607
SR-22 East to I-605	209,035	31,272	7,582	208,167	31,272	7,550
Evening Peak Period (3:00 PM - 7:00 PM)						
SR-73 to Brookhurst	235,797	41,232	8,552	230,175	37,366	8,348
Brookhurst to SR-22 East	383,718	78,777	13,917	363,555	77,463	13,186
SR-22 East to I-605	263,678	41,892	9,563	276,387	41,892	10,024
Non-Peak Periods						
SR-73 to Brookhurst	237,612	18,062	8,618	182,261	8,057	6,610
Brookhurst to SR-22 East	382,755	32,930	13,882	309,441	29,190	11,223
SR-22 East to I-605	245,494	16,462	8,904	216,968	15,829	7,869

Source: Parsons, 2014.

The average daily traffic (ADT) and VMT for each alternative are presented in **Error! Not a valid bookmark self-reference.**. The traffic volumes and speeds were split into northbound and southbound lanes for three I-405 segments: SR-73 to Brookhurst Street; Brookhurst Street to SR-22 East; and SR-22 East to I-605. The data were also split based on GP and HOV lanes. This process was performed for existing conditions 2009, opening year 2020, and horizon year 2040. Additional traffic data is presented in Appendix A.

Table 2. Average Daily Traffic and Vehicle Miles Traveled

Scenario	ADT	VMT
2009 Existing Conditions	936,000	4,092,000
2020 No Build	1,111,600	4,805,000
2020 Alternative 1	1,124,200	4,868,000
2020 Alternative 2	1,136,800	4,932,000
2020 Alternative 3	1,141,600	4,958,000
2040 No Build	1,230,000	5,299,000
2040 Alternative 1	1,251,000	5,405,000
2040 Alternative 2	1,272,000	5,511,000
2040 Alternative 3	1,280,000	5,554,000

Source: Parsons, 2014.

The truck percentage is 3.5 percent and 3.0 percent for the segments of SR-73 to Brookhurst, Brookhurst to SR-22 East, and SR-22 East to I-605, respectively. The VMT weighted average speeds for the 2020 No Build and Build Alternative 3 are 37 and 57 miles per hour, respectively. The average speeds for the 2020 Build Alternative 1 and 2 are 50 and 57 miles per hour, respectively. The average speeds for the 2040 Build Alternative 1 and 2 are 34 and 45 miles per hour, respectively.

4.0 Emissions Analyses

The update from EMFAC2007 to EMFAC2011 affected various analyses in the Air Quality Report, including operational criteria pollutants, mobile source air toxics (MSAT), construction criteria pollutants, localized carbon monoxide hot-spots, and localized particulate matter emissions. Each of these analyses are updated in the following sections.

4.1. Operational Criteria Pollutants

EMFAC2011 is the latest emission inventory model for motor vehicles operating on roads in California. This model reflects CARB's current understanding of how vehicles travel and how much they pollute. The emission rates provided by EMFAC2011 in grams per mile were used in conjunction with traffic volumes and speeds to calculate daily emissions for existing conditions. Table 3 shows existing emissions, Table 4 shows 2020 emissions, and Table 5 shows 2040

emissions. Regional emissions would be less for each of the Build Alternatives than the No Build Alternative due to higher vehicle speeds, which generally result in lower emission rates. The exception is sulfur oxide emissions, which would increase between one and five percent for the various analyzed scenarios. The South Coast Air Basin is designated as attainment area for the federal and State standards, and sulfur oxide is not of particular concern in the South Coast Air Basin. Emission files are included in Appendix B.

Table 3. Estimated 2009 Daily Operational Emissions

Emission Source	Pounds per Day					
	VOC	NO_X	CO	SO_X	$PM_{2.5}$	PM_{10}
Existing Conditions	1,179	5,756	28,880	42	288	617

Source: Terry A. Hayes Associates Inc., 2014.

Table 4. Estimated 2020 Daily Operational Emissions

Emission Source	Pounds per Day					
	VOC	NO_X	CO	SO_X	$PM_{2.5}$	PM_{10}
No Build Alternative	674	2,990	14,730	49	280	660
Alternative 1 (% Change from 2020 No Build Alternative)	388 (42%)	2,495 (17%)	11,626 (21%)	50 1%	263 (6%)	646 (2%)
Net Change	*(286)*	*(495)*	*(3,105)*	*1*	*(17)*	*(14)*
Alternative 2 (% Change from 2020 No Build Alternative)	392 (42%)	2,593 (13%)	11,147 (24%)	50 3%	268 (4%)	657 (0.5%)
Net Change f	*(282)*	*(397)*	*(3,583)*	*1*	*(12)*	*(3)*
Alternative 3 (% Change from 2020 No Build Alternative)	392 (42%)	2,600 (13%)	11,190 (24%)	51 3%	268 (4%)	659 (0.1%)
Net Change	*(282)*	*(390)*	*(3,540)*	*2*	*(12)*	*(0.5)*

Source: Terry A. Hayes Associates Inc., 2014.

Table 5. Estimated 2040 Daily Operational Emissions

Emission Source	Pounds per Day					
	VOC	NO_X	CO	SO_X	$PM_{2.5}$	PM_{10}
No Build Alternative	1,070	2,553	13,417	55	364	789
Alternative 1 (% Change from 2040 No Build Alternative)	571 (46.6%)	1,932 (24.3%)	10,934 (18.5%)	57 2%	320 (12%)	749 (5%)
Net Change	*(499)*	*(621)*	*(2,483)*	*2*	*(44)*	*(40)*
Alternative 2 (% Change from 2040 No Build Alternative)	397 (63%)	1,674 (34%)	9,399 (30%)	57 4%	307 (16%)	743 (6%)
Net Change	*(673)*	*(879)*	*(4,018)*	*2*	*(58)*	*(46)*
Alternative 3 (% Change from 2040 No Build Alternative)	393 (63%)	1,711 (33%)	9,449 (30%)	57 5%	308 (15%)	749 (5%)
Net Change	*(677)*	*(842)*	*(3,968)*	*2*	*(56)*	*(40)*

Source: Terry A. Hayes Associates Inc., 2014.

4.2. Mobile Source Air Toxics

Federal Highway Administration (FHWA) guidance on MSAT analysis recommends a range of options deemed appropriate for addressing and documenting emissions. Based on the FHWA guidance, the proposed project has the potential for meaningful differences in MSAT emissions among project alternatives; therefore, level of emissions for the highest priority MSATs for the No Build Alternative and Build Alternatives was evaluated (Level 3 Analysis).

The procedure for analyzing emissions for on-road MSATs is to calculate emission factors using CTEMFAC 5 and apply the emission factors to speed and VMT data specific to the proposed project. The emission factors used in this analysis are specific to the Orange County portion of the South Coast Air Basin. Results were produced for the existing year (2009), the first operational year once the proposed project is complete (2020), and the horizon year (2040). Emission files are included in Appendix C.

MSAT emissions in 2020 and 2040 are presented in Tables 6 and 7, respectively. Regional emissions would be less for each of the Build Alternatives than the No Build Alternative due to higher vehicle speeds, which generally result in lower emission rates. In addition, emissions would likely be lower than present levels in the design year as a result of federal and State control programs that are projected to further reduce MSAT emissions.

Table 6. MSAT Emissions – 2020

Toxic Air Contaminant	2009 Existing Emissions (lb/day)	2020 No Build Emissions (lb/day)	2020 Build		
			Emissions (lb/day)	Existing Percent Change	No Build Percent Change
ALTERNATIVE 1					
DPM	78.3	26.8	22.3	(71.5)	(16.6)
Formaldehyde	42.9	32.6	15.0	(65.0)	(53.9)
1,3-Butadiene	8.4	4.4	2.4	(71.0)	(44.1)
Benzene	37.2	21.0	11.3	(69.6)	(45.9)
Acrolein	1.9	1.0	0.6	(70.6)	(43.2)
Acetaldehyde	15.1	12.7	5.5	(63.6)	(56.5)
ALTERNATIVE 2					
DPM	78.3	26.8	24.7	(68.5)	(7.8)
Formaldehyde	42.9	32.6	14.3	(66.6)	(56.0)
1,3-Butadiene	8.4	4.4	2.5	(70.4)	(42.9)
Benzene	37.2	21.0	11.5	(69.2)	(45.3)
Acrolein	1.9	1.0	0.6	(70.0)	(42.0)
Acetaldehyde	15.1	12.7	5.1	(66.1)	(59.5)

Toxic Air Contaminant	2009 Existing Emissions (lb/day)	2020 No Build Emissions (lb/day)	2020 Build		
			Emissions (lb/day)	Existing Percent Change	No Build Percent Change
ALTERNATIVE 3					
DPM	78.3	26.8	24.7	(68.5)	(7.8)
Formaldehyde	42.9	32.6	14.5	(66.1)	(55.4)
1,3-Butadiene	8.4	4.4	2.5	(70.0)	(42.3)
Benzene	37.2	21.0	11.6	(68.9)	(44.7)
Acrolein	1.9	1.0	0.6	(69.7)	(41.5)
Acetaldehyde	15.1	12.7	5.2	(65.6)	(58.9)

Diesel Particulate Matter = DPM
Note: Percent change is calculated as (B-A)/A. For example, the existing percent change for diesel particulate matter in Alternative 1 is (28.6-80.9)/80.9

Source: Terry A. Hayes Associates Inc., 2014.

Table 7. MSAT Emissions – 2040

Toxic Air Contaminant	2009 Existing Emissions (lb/day)	2020 No Build Emissions (lb/day)	2040 Build		
			Emissions (lb/day)	Existing Percent Change	No Build Percent Change
ALTERNATIVE 1					
DPM	78.3	30.4	24.7	(68.5)	(19.0)
Formaldehyde	42.9	75.4	28.4	(33.8)	(62.3)
1,3-Butadiene	8.4	6.7	3.4	(59.4)	(49.1)
Benzene	37.2	34.4	16.6	(55.4)	(51.8)
Acrolein	1.9	1.4	0.8	(59.9)	(47.0)
Acetaldehyde	15.1	32.4	11.4	(24.4)	(64.6)
ALTERNATIVE 2					
DPM	78.3	30.4	22.2	(71.6)	(27.0)
Formaldehyde	42.9	75.4	15.4	(64.1)	(79.5)
1,3-Butadiene	8.4	6.7	2.2	(73.6)	(66.9)
Benzene	37.2	34.4	10.4	(72.0)	(69.7)
Acrolein	1.9	1.4	0.5	(73.7)	(65.2)
Acetaldehyde	15.1	32.4	5.9	(60.8)	(81.7)
ALTERNATIVE 3					
DPM	78.3	30.4	22.7	(71.1)	(25.5)
Formaldehyde	42.9	75.4	16.6	(61.2)	(77.9)
1,3-Butadiene	8.4	6.7	2.4	(71.7)	(64.5)
Benzene	37.2	34.4	11.2	(69.8)	(67.4)
Acrolein	1.9	1.4	0.5	(71.6)	(62.5)
Acetaldehyde	15.1	32.4	6.4	(57.8)	(80.3)

Diesel Particulate Matter = DPM
Note: Percent change is calculated as (B-A)/A. For example, the existing percent change for diesel particulate matter in Alternative 1 is (32.4-80.9)/80.9

Source: Terry A. Hayes Associates Inc., 2014.

4.3. Construction Criteria Pollutants

Construction emissions were assessed using the Roadway Construction Emissions Model Version 7.1.5.1, published in December 2013, which utilizes EMFAC2011 emission factors. Assumptions used for the construction calculations are as follows:

- Year 2015 start date
- 16-mile corridor length
- 250-feet corridor width
- A maximum of 4.5 acres of land disturbed per day
- A maximum of 622 cubic yards per day of soil to be imported
- A maximum of 604 cubic yards per day of soil to be exported

The anticipated construction phases and duration are approximately as follows:

- Grubbing/Land Clearing - 5.4 month
- Grading/Excavation - 24.3 months
- Drainage/Utilities/Sub-Grade - 16.2 months
- Paving - 8.1 months

Construction of the proposed project is anticipated to range between 48 months (4 years) for Alternative 1 and 54 months (4.5 years) for Alternative 3. Stationary or mobile-powered onsite construction equipment would include trucks, tractors, signal boards, excavators, backhoes, concrete saws, crushing and/or processing equipment, graders, trenchers, pavers, and other paving equipment. Table 8 shows the estimated daily emissions associated with each construction phase. While the total construction period would vary by alternative, it is anticipated that the maximum daily intensity of construction activity would be similar regardless of the alternative. Therefore, the daily emissions shown below are relevant for each of the build alternatives. Emission files are included in Appendix D.

Table 8. Estimated Daily Construction Emissions

	Pounds per Day				
Construction Phase	VOC	NO_X	CO	$PM_{2.5}$	PM_{10}
Grubbing/Land Clearing	2	21	18	10	46
Grading/Excavation	11	140	60	15	51
Drainage/Utilities	5	46	33	12	48
Paving	2	18	19	1	1
Potential Overlapping Emissions	20	225	130	38	146

Source: Terry A. Hayes Associates Inc., 2014.

5.0 Transportation Conformity

The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs or projects that do not conform to State Implementation Plan for attainting the National Ambient Air Quality Standards. Transportation Conformity applies to highway and transit projects and takes place on two levels: the regional—or, planning and programming level—and the project level. The proposed project must conform at both levels to be approved.

5.1. Regional Conformity

Regional conformity is demonstrated through consistency with the Southern California Association of Governments (SCAG) 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the Federal Transportation Improvement Program (FTIP). The proposed project will be implemented in two phases. The first phase would add one GP lane in each direction on I-405 from Euclid Street to the I-605 interchange and provide additional capital improvements. The second phase would add a tolled Express Lane in each direction of I-405 from SR-73 to SR-22 East. The tolled Express Lane and the existing HOV lanes would be managed jointly as a tolled Express Facility with two lanes in each direction from SR-73 to I-605. On September 11, 2014, the SCAG Regional Council approved Amendment #2 to the 2012-2035 RTP/SCS after a 30-day public review and comment period. Amendment #2 was developed as a response to changes to projects in the 2012-2035 RTP/SCS. The proposed project is described as "I-405 from SR-73 to I-605 Add 1 MF lane in each direction, and additional capital improvements. Combined with ORA045, ORA151, ORA100507 and ORA120310." and “Add 1 MF lane in each direction, and additional capital improvements: Convert Existing HOV to HOT, add 1 additional HOT lane each direction” (RTP/FTIP ID ORA030605).

Regarding the FTIP, on December 16, 2014, the SCAG Regional Council approved Amendment #15-02 to the 2015 FTIP. This administrative modification did not require federal approval and included the first phase of the proposed project. The project description stated, "I-405 FROM SR-73 TO I-605. Add 1 MF lane in each direction, and additional capital improvements. Combined with ORA045, ORA151, ORA100507 and ORA120310." On December 19, 2014, the Southern California Association of Governments Regional Council approved Amendment #15-03 to the 2015 FTIP. The Federal Transit Administration and FHWA approved Amendment #15-03 on January 26, 2015. The project description in Amendment #15-03 states, "I-405 from SR-73 to I-605. Convert existing HOV to HOT. Add 1 additional HOT lane each direction.”

5.2. Localized Conformity

Localized analyses have been prepared for open-to-traffic year (2020) and 20-year horizon (2040). It is acknowledged that the SCAG 2012-2035 RTP/SCS horizon year is 2035. Project-specific traffic data is not available for 2035, although EMFAC2011 2035 emission rates were used with 2040 traffic data.

5.2.1. Carbon Monoxide Hot-Spots

The CO hot-spot analysis presented in the Air Quality Report was revised using the same methodology as presented in the Report, although emission factors were updated using EMFAC2011. The CO air quality modeling results for 2020 and 2040 are shown in Tables 9 and 10, respectively. One-hour CO concentrations under project conditions would be approximately 4.6 parts per million (ppm) at worst-case sidewalk receptors in the year 2020, and 4.1 ppm in 2040. Eight-hour CO concentrations under project conditions would be approximately 3.2 ppm at worst-case sidewalk receptors in the year 2020, and 2.9 ppm in 2040. The 1- and 8-hour standards of 35 and 9 ppm, respectively, would not be exceeded at the analyzed intersections. Co hot-spot files are included in Appendix E.

Table 9. CO Modeling Results - Opening Year (2020)

Interchange and Intersection	1-hour (ppm)	8-hour (ppm)
BRISTOL STREET INTERCHANGE		
Bristol Street and I-405 NB Off-Ramp/South Coast Plaza	4.5	3.2
EUCLID STREET AND ELLIS AVENUE INTERCHANGE		
Euclid Street and I-405 NB Ramps/Newhope Street	4.2	3.0
I-405 SB Ramps and Ellis Avenue	3.8	2.7
MAGNOLIA STREET AND WARNER AVENUE INTERCHANGE		
Magnolia Street and Warner Avenue	4.3	3.0
BEACH BOULEVARD AND EDINGER AVENUE INTERCHANGE		
Beach Boulevard and McFadden Avenue	4.6	3.2
Beach Boulevard and I-405 SB Ramps	4.5	3.2
GOLDENWEST STREET AND BOLSA AVENUE INTERCHANGE		
Goldenwest Street and Bolsa Avenue	4.2	3.0
SPRINGDALE STREET AND WESTMINSTER BOULEVARD INTERCHANGE		
Springdale Street and Westminster Boulevard	4.0	2.8
GOLDENWEST STREET AND BOLSA AVENUE INTERCHANGE		
I-405 NB Off-Ramps/SR-22 EB Ramps and Garden Grove Boulevard	4.3	3.0
SEAL BEACH BOULEVARD INTERCHANGE		
Seal Beach Boulevard and I-405 SB Ramps	4.6	3.2
Federal Standard	**35**	**9**

Source: Terry A. Hayes Associates Inc., 2014.

Table 10. CO Modeling Results - Design Year (2040)

Interchange and Intersection	1-hour (ppm)	8-hour (ppm)
BRISTOL STREET INTERCHANGE		
Bristol Street and I-405 NB Off-Ramp/South Coast Plaza	3.8	2.7
EUCLID STREET AND ELLIS AVENUE INTERCHANGE		
Euclid Street and I-405 NB Ramps/Newhope Street	3.7	2.6
I-405 SB Ramps and Ellis Avenue	3.5	2.5
MAGNOLIA STREET AND WARNER AVENUE INTERCHANGE		
Magnolia Street and Warner Avenue	3.7	2.6
BEACH BOULEVARD AND EDINGER AVENUE INTERCHANGE		
Beach Boulevard and McFadden Avenue	3.9	2.8
Beach Boulevard and I-405 SB Ramps	4.1	2.9
GOLDENWEST STREET AND BOLSA AVENUE INTERCHANGE		
Goldenwest Street and Bolsa Avenue	3.8	2.7
SPRINGDALE STREET AND WESTMINSTER BOULEVARD INTERCHANGE		
Springdale Street and Westminster Boulevard	3.7	2.6
GOLDENWEST STREET AND BOLSA AVENUE INTERCHANGE		
I-405 NB Off-Ramps/SR-22 EB Ramps and Garden Grove Boulevard	3.5	2.5
SEAL BEACH BOULEVARD INTERCHANGE		
Seal Beach Boulevard and I-405 SB Ramps	3.6	2.5
Federal Standard	**35**	**9**

Source: Terry A. Hayes Associates Inc., 2014.

5.2.2. Particulate Matter Hot-Spots

Pursuant to Federal Conformity Regulations (specifically, 40 Code of Federal Regulations [CFR] 93.105 [c] [1][i]), a qualitative analysis of the localized PM emissions was conducted following the methodology provided in the United States Environmental Protection Agency (U.S. EPA) Guidelines as described in Final Rule of March 10, 2006.

U.S. EPA released guidance in 2010 that describes a more detailed analysis process using dispersion modeling that replaces the emission analysis step in the 2006 guidance. All projects with PM_{10} and/or $PM_{2.5}$ hot-spot analysis started since December 10, 2012 must use the quantitative analysis procedures in the 2010 guidance. Projects with PM analysis started before December 2012 using the 2006 qualitative analysis procedures must complete both the project-level conformity determination and the Final National Environmental Policy Act (NEPA) document within three years of circulating the draft NEPA document.

Based on emission analysis, the proposed project will not cause, contribute to, or worsen an existing violation of the PM_{10} 24-hour, $PM_{2.5}$ annual, and $PM_{2.5}$ 24-hour standards. The Build Alternative will produce PM_{10} and $PM_{2.5}$ emissions that are lower than No Build Alternative, will not reduce level of service (LOS) at intersection with a substantial number of trucks to D or

worse, and will not move emissions significantly closer to existing sensitive receptors. Therefore, the project is unlikely to cause or contribute to, or worsen existing, violations of the PM standards.

Analysis Method. This project was determined to be a Project of Localized Air Quality Concern (POAQC) for localized particulate matter (PM_{10} and $PM_{2.5}$), based on Interagency Consultation (IAC) concluded on January 25, 2011. The I-405 Improvement Project is considered a POAQC for PM_{10} and/or $PM_{2.5}$ because it meets the definition of a POAQC as defined in U.S. EPA's Transportation Conformity Guidance. It falls within the category of new or expanded highway projects with a significant number of diesel vehicles, and it would be affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles.

Project-level particulate matter analysis was started on January 26, 2011. The analysis follows the U.S. EPA Guidelines of 2006. The traffic data for the air quality analysis are derived from data presented and summarized in the I-405 Improvement Project EIR/EIS as revised for final release.

Planning Assumptions. Traffic volumes, fleet mix, and roadway link speeds were determined using traffic analysis developed for this project. Regional travel modeling information was determined in consultation with the Orange County Transportation Authority.

Vehicle Emission Rates. Vehicle emission rates were determined using the CARB's EMFAC2011 emission factor program. EMFAC2011 was made available by U.S. EPA for conformity analysis purposes on March 6, 2013.

EMFAC produces emission rates for exhaust emissions, tire wear, and brake wear. In addition to those emissions, this project is located in an area where re-entrained road dust emissions must be included. The latest U.S. EPA AP-42 analysis method for paved road dust is used; paved road dust emissions are added to emissions estimated using EMFAC to determine the total emissions from the project or any network link.

Roadway and Traffic Conditions. The hot-spot analysis was performed using peak and non-peak traffic volumes, truck volumes or percentage, and average speed for the entire project and, if identified, specific roadway links within the proposed project were determined using traffic analysis developed for this project. Traffic data is shown above in Table 1 and additional traffic data is included in the Appendix A. The truck percentage is 3.5 percent, 3.5 percent, and 3.0 percent for the segments of SR-73 to Brookhurst, Brookhurst to SR-22 East, and SR-22 East to I-605, respectively. In summary, the VMT weighted average speeds for the 2020 No Build and

Build Alternatives are 37 and 57 miles per hour, respectively. The average speeds for the 2040 No Build and Build Alternatives are 25 and 45 miles per hour, respectively.

Analysis was prepared for the following scenarios:

- Open-to-traffic year (2020) without project;
- Open-to-traffic year (2020) with project;
- 20-year horizon year horizon (2040) without project, and
- 20-year horizon year horizon (2040) with project.

Qualitative Emission Analysis. Qualitative emission analysis based on the methodology outlined in the U.S. EPA Guidelines of 2006 was carried out for this proposed project. Emissions evaluated include direct exhaust emissions, tire wear, and brake wear. Paved road dust emissions were calculated and added to direct vehicle emissions.

In order to show that the proposed project is unlikely to cause or contribute to, or worsen existing, PM hot-spots, emissions from the Build Alternative must be equal to or lower than emissions from the No Build Alternative. The emission analysis for this proposed project demonstrates that this criterion is met (Table 11). The improvements in speeds between the same years of analysis, as discussed above, have resulted in a decrease in emissions despite the increase in volumes shown in Tables 1 and 2, above. Emission files are included in Appendix B.

Table 11. Particulate Matter Emissions

Scenario and Emission Source	Total ADT	VMT Weighted Speed (Miles per Hour)[1]	Pounds per Day[2]	
			PM2.5	PM10
No Build (2020)	1,111,600	37	280	660
Alternative 3 (2020)	1,141,600	57	268	659
Net Change from No Build to Alternative 3 (2020)	30,000	20	(12)	(1)
No Build (2040)	1,230,000	25	364	789
Alternative 3 (2040)	1,280,000	45	308	749
Net Change from No Build to Alternative 3 (2040)	50,000	20	(56)	(41)

[1] The weighted average speed is calculated using the following formula:

[2] Total ADTs increase by 3.2% in 2020 and 4.1% in 2040. However, the amount of PM10 and PM2.5 emissions decrease because of the increase in travel speeds. Emission rates obtained from EMFAC2011 indicate a U-shaped curve with emission factors decreasing with speed until an optimal speed is reached and emissions begin to increase. The specifics of the emissions rate curve are dependent on the vehicle type, and emission factors used for this analysis are included in Appendix E.

Source: Terry A. Hayes Associates Inc., 2014.

To show that the proposed project is unlikely to cause, or contribute to, or worsen existing, PM hot-spots, emissions from the build alternatives must be equal to or lower than emissions from the No Build Alternative. The emission analysis for this project demonstrates that this criterion is met. Transportation Conformity Working (TCWG) concurred with this determination on October 28, 2014. Although Alternatives 1 and 2 were not presented to the TCWG, the regional emissions analysis above shows that $PM_{2.5}$ and PM_{10} emissions decrease for each alternative.

In addition, the proposed project cannot move emissions significantly closer to existing sensitive receptors, and cannot cause intersection operation where a substantial number of diesel trucks are present to deteriorate below LOS D. The proposed project also meets those criteria. The proposed project will typically move mainline emissions 25 to 40 feet (closer to sensitive receptors; however, there are a few areas where the widening is 60 to 80 feet. Given the overall reduction in emissions, this is not considered to be a significant reduction in distance to sensitive receptors.

Based on this emission analysis, the Build Alternatives would produce PM emissions that are lower than the No Build Alternative, would not reduce LOS at (an) intersection(s) with a substantial number of trucks to LOS D or worse, and would not move emissions significantly closer to existing sensitive receptors; therefore, the project is unlikely to cause, or contribute to, or worsen existing, violations of the PM standards.

6.0 Greenhouse Gas Emissions

The Greenhouse Gas (GHG) emissions presented in the Air Quality Report have also been updated using EMFAC2011 and new traffic data. As shown in Tables 12 through 14, GHG emissions in 2020 and 2040 would be higher than under existing conditions. This result is strictly related to increased vehicle volumes. However, each of the Build Alternatives would generate less GHG emissions than the No Build Alternatives due to speed improvements. This conclusion is consistent with what was presented in the Air Quality Report. Emission files are included in Appendix F.

Table 12. Estimated Existing Daily Greenhouse Gas Emissions

Source	Carbon Dioxide Equivalent (Metric Tons per Day)
Existing Conditions (2009)	1,780

Table 13. Estimated 2020 Daily Greenhouse Gas Emissions

Source	Carbon Dioxide Equivalent (Metric Tons per Day)
No Build Alternative	2,151
Alternative 1	1,519
Net Change from No Build to Alternative 1	*(632)*
Alternative 2	1,541
Net Change from No Build to Alternative 2	*(610)*
Alternative 3	1,538
Net Change from No Build to Alternative 3	*(613)*

Table 14. Estimated 2040 Daily Greenhouse Gas Emissions

Source	Carbon Dioxide Equivalent (Metric Tons per Day)
No Build Alternative	3,509
Alternative 1	2,338
Net Change from No Build to Alternative 1	*(1,171)*
Alternative 2	1,806
Net Change from No Build to Alternative 2	*(1,703)*
Alternative 3	1,825
Net Change from No Build to Alternative 3	*(1,684)*

Appendix A

Traffic Data

Appendix A. Traffic Data

					Segments	Northbound								Southbound							
						Volume				LOS		Speed		Volume				LOS		Speed	
Year	Build ID	Time Period	Truck %	Segment Length		GP	HOV	TRK	Total	GP	HOV	GP	HOV	GP	HOV	TRK	Total	GP	HO	GP	HOV
2009	EXT	AM	3.0%	3.43	SR-73 to Brookhurst	25,406	2,412	786	28,604	C	B	65	65	30,139	2,916	932	33,987	F	D	45	55
2009	EXT	AM	3.5%	6.99	Brookhurst to SR-22 East	21,622	4,319	784	26,725	F	D	43	53	19,159	3,730	695	23,584	F	D	17	47
2009	EXT	AM	3.5%	3.28	SR-22 East to I-605	34,043	4,347	1,235	39,625	F	D	35	55	32,581	3,421	1,182	37,184	F	D	31	51
2009	EXT	PM	3.0%	3.43	SR-73 to Brookhurst	33,523	5,748	1,037	40,308	F	F	30	40	31,446	4,395	973	36,814	D	D	53	63
2009	EXT	PM	3.5%	6.99	Brookhurst to SR-22 East	29,363	6,349	1,065	36,777	F	F	45	55	27,551	6,011	999	34,561	F	E	50	60
2009	EXT	PM	3.5%	3.28	SR-22 East to I-605	42,558	6,236	1,544	50,338	F	F	47	55	46,727	6,123	1,695	54,545	F	F	45	55
2009	EXT	NP	3.0%	3.43	SR-73 to Brookhurst	65,744	3,015	2,033	70,792	A	A	65	65	80,202	1,092	2,480	83,774	A	A	65	65
2009	EXT	NP	3.5%	6.99	Brookhurst to SR-22 East	60,480	5,827	2,194	68,501	A	A	65	65	67,135	3,742	2,435	73,312	A	A	65	65
2009	EXT	NP	3.5%	3.28	SR-22 East to I-605	80,120	2,658	2,906	85,684	A	A	65	65	105,692	1,359	3,833	110,884	A	A	65	65
2020	NOB	AM	3.5%	3.43	SR-73 to Brookhurst	43,461	5,550	1,576	50,587	F	F	45	45	48,090	6,712	1,744	56,546	F	F	13	13
2020	NOB	AM	3.5%	6.99	Brookhurst to SR-22 East	34,470	6,602	1,250	42,322	F	F	16	16	30,606	6,363	1,110	38,079	F	F	14	14
2020	NOB	AM	3.0%	3.28	SR-22 East to I-605	49,915	11,336	1,810	63,062	F	F	24	40	44,357	10,973	1,609	56,939	F	F	19	39
2020	NOB	PM	3.5%	3.43	SR-73 to Brookhurst	65,261	8,261	2,367	75,889	F	F	25	25	58,775	7,532	2,132	68,439	F	F	39	39
2020	NOB	PM	3.5%	6.99	Brookhurst to SR-22 East	49,762	9,448	1,805	61,015	F	F	12	12	43,842	8,427	1,590	53,860	F	F	15	15
2020	NOB	PM	3.0%	3.28	SR-22 East to I-605	67,654	15,230	2,454	85,337	F	F	25	42	65,895	15,003	2,390	83,288	F	F	22	43
2020	NOB	NP	3.5%	3.43	SR-73 to Brookhurst	57,044	2,770	2,069	61,884	A	A	65	65	56,637	964	2,054	59,656	A	A	65	65
2020	NOB	NP	3.5%	6.99	Brookhurst to SR-22 East	43,578	6,514	1,581	51,672	B	A	65	65	42,631	6,075	1,546	50,252	A	A	65	65
2020	NOB	NP	3.0%	3.28	SR-22 East to I-605	54,968	15,879	1,994	72,841	A	A	65	65	65,039	12,534	2,359	79,932	A	A	65	65
2020	ALT1	AM	3.0%	3.43	SR-73 to Brookhurst	41,774	5,473	1,292	48,539	F	F	58	58	48,397	6,722	1,497	56,616	F	F	18	18
2020	ALT1	AM	3.5%	6.99	Brookhurst to SR-22 East	34,971	5,527	1,268	41,766	F	F	44	44	32,020	5,488	1,161	38,669	F	F	33	33
2020	ALT1	AM	3.5%	3.28	SR-22 East to I-605	49,372	10,468	1,791	61,631	F	F	43	53	45,544	10,342	1,652	57,538	F	F	42	52
2020	ALT1	PM	3.0%	3.43	SR-73 to Brookhurst	62,938	8,156	1,947	73,040	F	F	42	42	56,413	7,426	1,745	65,584	F	F	52	52
2020	ALT1	PM	3.5%	6.99	Brookhurst to SR-22 East	50,656	7,917	1,837	60,410	F	F	33	33	44,417	7,052	1,611	53,080	F	F	44	44
2020	ALT1	PM	3.5%	3.28	SR-22 East to I-605	67,142	14,077	2,435	83,655	F	F	45	54	65,078	13,854	2,360	81,292	F	F	45	54
2020	ALT1	NP	3.0%	3.43	SR-73 to Brookhurst	62,181	2,979	1,923	67,084	A	A	65	65	59,803	1,085	1,850	62,738	A	A	65	65
2020	ALT1	NP	3.5%	6.99	Brookhurst to SR-22 East	49,850	4,304	1,808	55,963	A	A	65	65	47,672	3,911	1,729	53,312	A	A	65	65
2020	ALT1	NP	3.5%	3.28	SR-22 East to I-605	62,752	13,934	2,276	78,962	A	A	65	65	70,722	11,035	2,565	84,322	A	A	65	65
2020	ALT2	AM	3.0%	3.43	SR-73 to Brookhurst	39,855	5,397	1,233	46,484	F	F	60	60	51,401	6,858	1,590	59,849	F	F	22	22
2020	ALT2	AM	3.5%	6.99	Brookhurst to SR-22 East	34,940	4,756	1,267	40,963	F	F	62	62	35,793	4,801	1,298	41,892	F	F	51	51
2020	ALT2	AM	3.5%	3.28	SR-22 East to I-605	49,003	9,346	1,777	60,127	F	D	53	60	50,436	9,484	1,829	61,749	F	F	51	57
2020	ALT2	PM	3.0%	3.43	SR-73 to Brookhurst	60,268	8,050	1,864	70,182	F	F	47	47	53,739	7,319	1,662	62,720	F	F	56	56
2020	ALT2	PM	3.5%	6.99	Brookhurst to SR-22 East	50,798	6,820	1,842	59,460	F	F	56	56	44,310	6,066	1,607	51,983	F	F	56	56
2020	ALT2	PM	3.5%	3.28	SR-22 East to I-605	66,885	12,581	2,426	81,893	F	D	55	62	64,492	12,363	2,339	79,194	F	F	55	60
2020	ALT2	NP	3.0%	3.43	SR-73 to Brookhurst	67,038	3,188	2,073	72,300	A	A	65	65	59,738	1,080	1,848	62,666	A	A	65	65
2020	ALT2	NP	3.5%	6.99	Brookhurst to SR-22 East	56,124	2,685	2,036	60,845	A	A	65	65	49,861	2,388	1,808	54,057	A	A	65	65
2020	ALT2	NP	3.5%	3.28	SR-22 East to I-605	73,695	8,869	2,673	85,237	A	A	65	65	73,698	8,830	2,673	85,201	A	A	65	65
2020	ALT3	AM	3.5%	3.43	SR-73 to Brookhurst	40,088	8,132	1,454	49,674	D	C	64	65	49,683	8,974	1,802	60,459	F	C	37	65
2020	ALT3	AM	3.5%	6.99	Brookhurst to SR-22 East	34,697	7,572	1,258	43,527	F	C	58	65	32,037	8,413	1,162	41,612	F	C	45	65
2020	ALT3	AM	3.0%	3.28	SR-22 East to I-605	52,905	9,534	1,919	64,358	F	D	47	65	50,651	9,534	1,837	62,022	F	D	43	65
2020	ALT3	PM	3.5%	3.43	SR-73 to Brookhurst	55,690	12,021	2,020	69,731	F	C	58	65	55,874	10,894	2,027	68,794	F	C	62	65
2020	ALT3	PM	3.5%	6.99	Brookhurst to SR-22 East	45,747	11,270	1,659	58,676	F	C	51	65	43,523	11,082	1,579	56,184	F	C	51	65

Appendix A. Traffic Data

					Segments	Northbound								Southbound							
						Volume				LOS		Speed		Volume				LOS		Speed	
Year	Build ID	Time Period	Truck %	Segment Length		GP	HOV	TRK	Total	GP	HOV	GP	HOV	GP	HOV	TRK	Total	GP	HO	GP	HOV
2020	ALT3	PM	3.0%	3.28	SR-22 East to I-605	66,265	12,772	2,403	81,441	F	D	48	65	71,518	12,772	2,594	86,884	F	D	46	65
2020	ALT3	NP	3.5%	3.43	SR-73 to Brookhurst	65,777	4,515	2,386	72,677	A	A	65	65	54,805	2,072	1,988	58,865	A	A	65	65
2020	ALT3	NP	3.5%	6.99	Brookhurst to SR-22 East	54,064	4,113	1,961	60,138	A	A	65	65	46,099	3,692	1,672	51,463	A	A	65	65
2020	ALT3	NP	3.0%	3.28	SR-22 East to I-605	72,720	4,287	2,638	79,645	A	A	65	65	68,707	4,253	2,492	75,451	A	A	65	65
2040	NOB	AM	3.5%	3.43	SR-73 to Brookhurst	50,102	6,205	1,817	58,125	F	F	21	21	67,025	8,183	2,431	77,639	F	F	5	5
2040	NOB	AM	3.5%	6.99	Brookhurst to SR-22 East	39,757	7,387	1,442	48,586	F	F	5	5	42,909	7,857	1,556	52,322	F	F	5	5
2040	NOB	AM	3.0%	3.28	SR-22 East to I-605	57,692	12,921	2,092	72,706	F	F	7	15	61,637	13,668	2,236	77,540	F	F	5	10
2040	NOB	PM	3.5%	3.43	SR-73 to Brookhurst	77,432	9,503	2,808	89,743	F	F	10	10	67,707	8,419	2,456	78,582	F	F	20	20
2040	NOB	PM	3.5%	6.99	Brookhurst to SR-22 East	56,708	10,439	2,057	69,205	F	F	5	5	49,258	9,187	1,787	60,232	F	F	6	6
2040	NOB	PM	3.0%	3.28	SR-22 East to I-605	79,108	17,571	2,869	99,548	F	F	7	15	74,628	16,726	2,707	94,061	F	F	8	19
2040	NOB	NP	3.5%	3.43	SR-73 to Brookhurst	59,164	2,902	2,146	64,212	A	A	65	65	46,624	384	1,691	48,700	A	A	65	65
2040	NOB	NP	3.5%	6.99	Brookhurst to SR-22 East	42,764	6,781	1,551	51,096	C	A	65	65	35,425	5,850	1,285	42,559	B	A	65	65
2040	NOB	NP	3.0%	3.28	SR-22 East to I-605	55,196	17,743	2,002	74,941	B	A	65	65	55,467	12,726	2,012	70,205	B	A	65	65
2040	ALT1	AM	3.0%	3.43	SR-73 to Brookhurst	48,001	6,114	1,485	55,599	F	F	38	38	64,013	8,051	1,980	74,044	F	F	6	6
2040	ALT1	AM	3.5%	6.99	Brookhurst to SR-22 East	40,593	6,237	1,472	48,302	F	F	19	19	43,673	6,626	1,584	51,883	F	F	11	11
2040	ALT1	AM	3.5%	3.28	SR-22 East to I-605	57,330	11,920	2,079	71,330	F	F	19	28	61,091	12,572	2,216	75,879	F	F	13	20
2040	ALT1	PM	3.0%	3.43	SR-73 to Brookhurst	74,460	9,373	2,303	86,135	F	F	18	18	64,766	8,291	2,003	75,060	F	F	34	34
2040	ALT1	PM	3.5%	6.99	Brookhurst to SR-22 East	58,115	8,823	2,108	69,047	F	F	12	12	50,216	7,754	1,821	59,791	F	F	24	24
2040	ALT1	PM	3.5%	3.28	SR-22 East to I-605	78,913	16,223	2,862	97,998	F	F	19	27	74,017	15,441	2,685	92,142	F	F	23	32
2040	ALT1	NP	3.0%	3.43	SR-73 to Brookhurst	65,655	3,169	2,031	70,854	A	A	65	65	53,954	685	1,669	56,307	A	A	65	65
2040	ALT1	NP	3.5%	6.99	Brookhurst to SR-22 East	50,418	4,503	1,829	56,749	A	A	65	65	42,783	3,893	1,552	48,227	A	A	65	65
2040	ALT1	NP	3.5%	3.28	SR-22 East to I-605	65,020	15,544	2,358	82,922	B	A	65	65	64,933	11,440	2,355	78,728	A	A	65	65
2040	ALT2	AM	3.0%	3.43	SR-73 to Brookhurst	45,628	5,416	1,411	52,455	F	F	44	44	61,116	7,085	1,890	70,091	F	F	7	7
2040	ALT2	AM	3.5%	6.99	Brookhurst to SR-22 East	40,779	4,866	1,479	47,124	F	F	45	45	44,066	5,135	1,598	50,799	F	F	31	31
2040	ALT2	AM	3.5%	3.28	SR-22 East to I-605	57,021	9,624	2,068	68,714	F	F	29	39	61,029	10,087	2,213	73,330	F	F	21	27
2040	ALT2	PM	3.0%	3.43	SR-73 to Brookhurst	71,069	9,242	2,198	82,509	F	F	22	22	61,458	8,162	1,901	71,521	F	F	39	39
2040	ALT2	PM	3.5%	6.99	Brookhurst to SR-22 East	58,623	7,663	2,126	68,412	F	F	35	35	50,359	6,722	1,826	58,908	F	F	50	50
2040	ALT2	PM	3.5%	3.28	SR-22 East to I-605	78,810	14,580	2,858	96,249	F	F	31	40	73,490	13,853	2,665	90,008	F	F	34	40
2040	ALT2	NP	3.0%	3.43	SR-73 to Brookhurst	71,868	4,042	2,223	78,133	A	A	65	65	60,597	1,820	1,874	64,291	A	A	65	65
2040	ALT2	NP	3.5%	6.99	Brookhurst to SR-22 East	58,309	3,352	2,115	63,776	A	A	65	65	50,123	3,040	1,818	54,981	A	A	65	65
2040	ALT2	NP	3.5%	3.28	SR-22 East to I-605	77,237	12,304	2,801	92,342	B	A	65	65	74,927	10,712	2,718	88,357	A	A	65	65
2040	ALT3	AM	3.5%	3.43	SR-73 to Brookhurst	48,108	8,132	1,745	57,985	F	C	53	65	61,644	8,974	2,236	72,854	F	C	14	65
2040	ALT3	AM	3.5%	6.99	Brookhurst to SR-22 East	42,477	7,572	1,541	51,590	F	C	38	65	41,839	8,413	1,517	51,769	F	C	25	65
2040	ALT3	AM	3.0%	3.28	SR-22 East to I-605	63,730	9,534	2,311	75,576	F	D	22	65	63,466	9,534	2,302	75,301	F	D	14	65
2040	ALT3	PM	3.5%	3.43	SR-73 to Brookhurst	68,746	12,021	2,493	83,260	F	C	36	65	67,106	10,894	2,434	80,434	F	C	50	65
2040	ALT3	PM	3.5%	6.99	Brookhurst to SR-22 East	54,895	11,270	1,991	68,156	F	C	29	65	52,011	11,082	1,886	64,979	F	C	43	65
2040	ALT3	PM	3.0%	3.28	SR-22 East to I-605	80,390	12,772	2,916	96,077	F	D	22	65	84,264	12,772	3,056	100,093	F	D	24	65
2040	ALT3	NP	3.5%	3.43	SR-73 to Brookhurst	69,275	5,266	2,513	77,053	A	A	65	65	53,137	2,349	1,927	57,413	A	A	65	65
2040	ALT3	NP	3.5%	6.99	Brookhurst to SR-22 East	54,758	4,711	1,986	61,455	B	A	65	65	44,269	4,176	1,606	50,051	A	A	65	65
2040	ALT3	NP	3.0%	3.28	SR-22 East to I-605	74,846	5,019	2,715	82,579	B	A	65	65	66,149	4,826	2,399	73,374	A	A	65	65

Appendix A. Traffic Data

					Segments	VMT					
						South Bound			North Bound		
Year	Build ID	Time Period	Truck %	Segment Length		GP	HOV	TRK	GP	HOV	TRK
2009	EXT	AM	3.0%	3.43	SR-73 to Brookhurst	87,143	8,273	2,695	103,376	10,002	3,197
2009	EXT	AM	3.5%	6.99	Brookhurst to SR-22 East	151,136	30,190	5,482	133,922	26,073	4,857
2009	EXT	AM	3.5%	3.28	SR-22 East to I-605	111,662	14,258	4,050	106,867	11,221	3,876
2009	EXT	PM	3.0%	3.43	SR-73 to Brookhurst	114,985	19,716	3,556	107,861	15,075	3,336
2009	EXT	PM	3.5%	6.99	Brookhurst to SR-22 East	205,248	44,380	7,444	192,580	42,017	6,985
2009	EXT	PM	3.5%	3.28	SR-22 East to I-605	139,592	20,454	5,063	153,265	20,083	5,559
2009	EXT	NP	3.0%	3.43	SR-73 to Brookhurst	225,501	10,341	6,974	275,091	3,746	8,508
2009	EXT	NP	3.5%	6.99	Brookhurst to SR-22 East	422,758	40,731	15,333	469,274	26,157	17,020
2009	EXT	NP	3.5%	3.28	SR-22 East to I-605	262,794	8,718	9,531	346,669	4,458	12,573
2020	NOB	AM	3.5%	3.43	SR-73 to Brookhurst	149,071	19,035	5,407	164,949	23,022	5,983
2020	NOB	AM	3.5%	6.99	Brookhurst to SR-22 East	240,943	46,146	8,739	213,937	44,475	7,759
2020	NOB	AM	3.0%	3.28	SR-22 East to I-605	163,722	37,183	5,938	145,491	35,992	5,277
2020	NOB	PM	3.5%	3.43	SR-73 to Brookhurst	223,844	28,336	8,119	201,597	25,836	7,312
2020	NOB	PM	3.5%	6.99	Brookhurst to SR-22 East	347,838	66,043	12,616	306,457	58,906	11,115
2020	NOB	PM	3.0%	3.28	SR-22 East to I-605	221,904	49,954	8,048	216,136	49,210	7,839
2020	NOB	NP	3.5%	3.43	SR-73 to Brookhurst	195,662	9,503	7,097	194,265	3,308	7,046
2020	NOB	NP	3.5%	6.99	Brookhurst to SR-22 East	304,609	45,533	11,048	297,993	42,463	10,808
2020	NOB	NP	3.0%	3.28	SR-22 East to I-605	180,297	52,084	6,539	213,329	41,112	7,737
2020	ALT1	AM	3.0%	3.43	SR-73 to Brookhurst	143,284	18,773	4,431	166,002	23,056	5,134
2020	ALT1	AM	3.5%	6.99	Brookhurst to SR-22 East	244,444	38,632	8,866	223,822	38,359	8,118
2020	ALT1	AM	3.5%	3.28	SR-22 East to I-605	161,941	34,335	5,874	149,384	33,923	5,418
2020	ALT1	PM	3.0%	3.43	SR-73 to Brookhurst	215,877	27,974	6,677	193,498	25,471	5,984
2020	ALT1	PM	3.5%	6.99	Brookhurst to SR-22 East	354,082	55,341	12,842	310,474	49,295	11,261
2020	ALT1	PM	3.5%	3.28	SR-22 East to I-605	220,226	46,173	7,987	213,456	45,440	7,742
2020	ALT1	NP	3.0%	3.43	SR-73 to Brookhurst	213,283	10,218	6,596	205,123	3,723	6,344
2020	ALT1	NP	3.5%	6.99	Brookhurst to SR-22 East	348,453	30,088	12,638	333,230	27,337	12,086
2020	ALT1	NP	3.5%	3.28	SR-22 East to I-605	205,826	45,704	7,465	231,969	36,193	8,413
2020	ALT2	AM	3.0%	3.43	SR-73 to Brookhurst	136,702	18,511	4,228	176,306	23,524	5,453
2020	ALT2	AM	3.5%	6.99	Brookhurst to SR-22 East	244,230	33,245	8,858	250,192	33,561	9,074
2020	ALT2	AM	3.5%	3.28	SR-22 East to I-605	160,730	30,656	5,830	165,430	31,107	6,000
2020	ALT2	PM	3.0%	3.43	SR-73 to Brookhurst	206,719	27,610	6,393	184,324	25,104	5,701
2020	ALT2	PM	3.5%	6.99	Brookhurst to SR-22 East	355,076	47,670	12,878	309,725	42,400	11,234
2020	ALT2	PM	3.5%	3.28	SR-22 East to I-605	219,384	41,267	7,957	211,532	40,552	7,672

Appendix A. Traffic Data

					Segments	VMT					
						South Bound			North Bound		
Year	Build ID	Time Period	Truck %	Segment Length		GP	HOV	TRK	GP	HOV	TRK
2020	ALT2	NP	3.0%	3.43	SR-73 to Brookhurst	229,941	10,935	7,112	204,900	3,705	6,337
2020	ALT2	NP	3.5%	6.99	Brookhurst to SR-22 East	392,309	18,766	14,229	348,530	16,690	12,641
2020	ALT2	NP	3.5%	3.28	SR-22 East to I-605	241,719	29,090	8,767	241,731	28,962	8,767
2020	ALT3	AM	3.5%	3.43	SR-73 to Brookhurst	137,501	27,893	4,987	170,413	30,781	6,181
2020	ALT3	AM	3.5%	6.99	Brookhurst to SR-22 East	242,529	52,928	8,796	223,937	58,807	8,122
2020	ALT3	AM	3.0%	3.28	SR-22 East to I-605	173,528	31,272	6,294	166,134	31,272	6,026
2020	ALT3	PM	3.5%	3.43	SR-73 to Brookhurst	191,016	41,232	6,928	191,647	37,366	6,951
2020	ALT3	PM	3.5%	6.99	Brookhurst to SR-22 East	319,773	78,777	11,598	304,227	77,463	11,034
2020	ALT3	PM	3.0%	3.28	SR-22 East to I-605	217,351	41,892	7,883	234,578	41,892	8,508
2020	ALT3	NP	3.5%	3.43	SR-73 to Brookhurst	225,614	15,486	8,183	187,983	7,107	6,818
2020	ALT3	NP	3.5%	6.99	Brookhurst to SR-22 East	377,908	28,750	13,707	322,233	25,807	11,687
2020	ALT3	NP	3.0%	3.28	SR-22 East to I-605	238,522	14,061	8,651	225,357	13,950	8,174
2040	NOB	AM	3.5%	3.43	SR-73 to Brookhurst	171,851	21,285	6,233	229,897	28,066	8,338
2040	NOB	AM	3.5%	6.99	Brookhurst to SR-22 East	277,898	51,636	10,079	299,932	54,923	10,878
2040	NOB	AM	3.0%	3.28	SR-22 East to I-605	189,230	42,381	6,863	202,168	44,830	7,333
2040	NOB	PM	3.5%	3.43	SR-73 to Brookhurst	265,592	32,594	9,633	232,234	28,878	8,423
2040	NOB	PM	3.5%	6.99	Brookhurst to SR-22 East	396,392	72,972	14,377	344,315	64,217	12,488
2040	NOB	PM	3.0%	3.28	SR-22 East to I-605	259,476	57,631	9,411	244,780	54,861	8,878
2040	NOB	NP	3.5%	3.43	SR-73 to Brookhurst	202,931	9,954	7,360	159,922	1,318	5,800
2040	NOB	NP	3.5%	6.99	Brookhurst to SR-22 East	298,919	47,402	10,842	247,617	40,892	8,981
2040	NOB	NP	3.0%	3.28	SR-22 East to I-605	181,042	58,197	6,566	181,933	41,740	6,599
2040	ALT1	AM	3.0%	3.43	SR-73 to Brookhurst	164,643	20,970	5,092	219,566	27,615	6,791
2040	ALT1	AM	3.5%	6.99	Brookhurst to SR-22 East	283,745	43,595	10,291	305,277	46,315	11,072
2040	ALT1	AM	3.5%	3.28	SR-22 East to I-605	188,043	39,098	6,820	200,378	41,237	7,268
2040	ALT1	PM	3.0%	3.43	SR-73 to Brookhurst	255,397	32,148	7,899	222,147	28,438	6,871
2040	ALT1	PM	3.5%	6.99	Brookhurst to SR-22 East	406,227	61,676	14,734	351,010	54,200	12,731
2040	ALT1	PM	3.5%	3.28	SR-22 East to I-605	258,836	53,211	9,388	242,775	50,646	8,805
2040	ALT1	NP	3.0%	3.43	SR-73 to Brookhurst	225,196	10,868	6,965	185,062	2,349	5,724
2040	ALT1	NP	3.5%	6.99	Brookhurst to SR-22 East	352,420	31,476	12,782	299,052	27,210	10,846
2040	ALT1	NP	3.5%	3.28	SR-22 East to I-605	213,267	50,983	7,735	212,980	37,525	7,725
2040	ALT2	AM	3.0%	3.43	SR-73 to Brookhurst	156,503	18,576	4,840	209,627	24,302	6,483
2040	ALT2	AM	3.5%	6.99	Brookhurst to SR-22 East	285,048	34,010	10,339	308,021	35,894	11,172
2040	ALT2	AM	3.5%	3.28	SR-22 East to I-605	187,030	31,568	6,783	200,176	33,085	7,260

Appendix A. Traffic Data

					Segments	VMT					
						South Bound			North Bound		
Year	Build ID	Time Period	Truck %	Segment Length		GP	HOV	TRK	GP	HOV	TRK
2040	ALT2	PM	3.0%	3.43	SR-73 to Brookhurst	243,768	31,699	7,539	210,800	27,996	6,520
2040	ALT2	PM	3.5%	6.99	Brookhurst to SR-22 East	409,773	53,562	14,862	352,008	46,990	12,767
2040	ALT2	PM	3.5%	3.28	SR-22 East to I-605	258,498	47,823	9,376	241,047	45,438	8,743
2040	ALT2	NP	3.0%	3.43	SR-73 to Brookhurst	246,509	13,865	7,624	207,848	6,243	6,428
2040	ALT2	NP	3.5%	6.99	Brookhurst to SR-22 East	407,582	23,431	14,783	350,361	21,249	12,707
2040	ALT2	NP	3.5%	3.28	SR-22 East to I-605	253,338	40,356	9,188	245,762	35,135	8,914
2040	ALT3	AM	3.5%	3.43	SR-73 to Brookhurst	165,010	27,893	5,985	211,440	30,781	7,669
2040	ALT3	AM	3.5%	6.99	Brookhurst to SR-22 East	296,915	52,928	10,769	292,455	58,807	10,607
2040	ALT3	AM	3.0%	3.28	SR-22 East to I-605	209,035	31,272	7,582	208,167	31,272	7,550
2040	ALT3	PM	3.5%	3.43	SR-73 to Brookhurst	235,797	41,232	8,552	230,175	37,366	8,348
2040	ALT3	PM	3.5%	6.99	Brookhurst to SR-22 East	383,718	78,777	13,917	363,555	77,463	13,186
2040	ALT3	PM	3.0%	3.28	SR-22 East to I-605	263,678	41,892	9,563	276,387	41,892	10,024
2040	ALT3	NP	3.5%	3.43	SR-73 to Brookhurst	237,612	18,062	8,618	182,261	8,057	6,610
2040	ALT3	NP	3.5%	6.99	Brookhurst to SR-22 East	382,755	32,930	13,882	309,441	29,190	11,223
2040	ALT3	NP	3.0%	3.28	SR-22 East to I-605	245,494	16,462	8,904	216,968	15,829	7,869

Appendix B

Regional Operational Emissions

Appendix A. Regional Operational Emissions (lb/day)

Year	Build ID	Time Period	Segment	PM2.5	PM10	TOG	CH4	ROG	NOx	CO	SOx
2009	EXT	AM	SR-73 to Brookhurst	14	31	69	13	55	282	1,449	2.2
2009	EXT	AM	Brookhurst to SR-22 East	28	56	185	37	148	507	2,888	3.6
2009	EXT	AM	SR-22 East to I-605	17	38	91	18	73	328	1,816	2.6
2009	EXT	PM	SR-73 to Brookhurst	18	39	90	18	72	332	1,829	2.7
2009	EXT	PM	Brookhurst to SR-22 East	32	72	142	28	115	622	3,151	5.1
2009	EXT	PM	SR-22 East to I-605	22	50	99	19	79	431	2,194	3.5
2009	EXT	NP	SR-73 to Brookhurst	38	80	192	37	155	775	3,806	5.4
2009	EXT	NP	Brookhurst to SR-22 East	72	152	361	69	292	1,494	7,118	10.2
2009	EXT	NP	SR-22 East to I-605	47	100	235	45	190	986	4,630	6.7
2020	NOB	AM	SR-73 to Brookhurst	21	51	72	20	52	224	1,163	3.8
2020	NOB	AM	Brookhurst to SR-22 East	35	80	161	46	115	406	2,189	5.7
2020	NOB	AM	SR-22 East to I-605	22	53	64	18	46	221	1,228	4.0
2020	NOB	PM	SR-73 to Brookhurst	27	66	63	17	46	260	1,396	5.1
2020	NOB	PM	Brookhurst to SR-22 East	53	117	291	83	208	651	3,386	8.2
2020	NOB	PM	SR-22 East to I-605	31	75	90	25	64	312	1,723	5.7
2020	NOB	NP	SR-73 to Brookhurst	23	56	49	12	37	240	933	4.3
2020	NOB	NP	Brookhurst to SR-22 East	39	96	83	21	63	400	1,593	7.3
2020	NOB	NP	SR-22 East to I-605	27	67	59	14	44	276	1,120	5.1
2020	ALT1	AM	SR-73 to Brookhurst	20	48	55	15	40	202	1,023	3.7
2020	ALT1	AM	Brookhurst to SR-22 East	30	74	56	15	41	271	1,399	5.8
2020	ALT1	AM	SR-22 East to I-605	21	51	36	10	27	184	932	4.0
2020	ALT1	PM	SR-73 to Brookhurst	25	62	44	12	32	220	1,133	4.8
2020	ALT1	PM	Brookhurst to SR-22 East	42	105	79	21	58	384	1,985	8.1
2020	ALT1	PM	SR-22 East to I-605	29	71	49	13	36	254	1,252	5.5
2020	ALT1	NP	SR-73 to Brookhurst	24	59	52	13	39	247	995	4.6
2020	ALT1	NP	Brookhurst to SR-22 East	42	103	90	22	68	435	1,709	7.8
2020	ALT1	NP	SR-22 East to I-605	29	72	63	15	47	298	1,197	5.5
2020	ALT2	AM	SR-73 to Brookhurst	20	49	57	16	41	205	1,046	3.7
2020	ALT2	AM	Brookhurst to SR-22 East	31	77	55	14	41	295	1,273	5.9
2020	ALT2	AM	SR-22 East to I-605	21	53	37	9	27	195	879	4.1
2020	ALT2	PM	SR-73 to Brookhurst	24	60	41	11	31	213	1,031	4.6
2020	ALT2	PM	Brookhurst to SR-22 East	42	103	72	18	54	389	1,691	8.0
2020	ALT2	PM	SR-22 East to I-605	28	70	50	13	37	264	1,144	5.4
2020	ALT2	NP	SR-73 to Brookhurst	25	62	54	13	41	257	1,035	4.7
2020	ALT2	NP	Brookhurst to SR-22 East	45	109	94	23	71	461	1,798	8.3
2020	ALT2	NP	SR-22 East to I-605	31	75	65	16	49	316	1,250	5.7
2020	ALT3	AM	SR-73 to Brookhurst	20	50	43	11	32	199	915	3.9
2020	ALT3	AM	Brookhurst to SR-22 East	32	78	60	15	44	301	1,332	6.1

Appendix A. Regional Operational Emissions (lb/day)

Year	Build ID	Time Period	Segment	PM2.5	PM10	TOG	CH4	ROG	NOx	CO	SOx
2020	ALT3	AM	SR-22 East to I-605	22	55	39	10	29	199	964	4.2
2020	ALT3	PM	SR-73 to Brookhurst	26	63	49	12	37	254	1,027	4.9
2020	ALT3	PM	Brookhurst to SR-22 East	43	105	76	20	57	387	1,797	8.2
2020	ALT3	PM	SR-22 East to I-605	29	73	52	13	39	266	1,261	5.6
2020	ALT3	NP	SR-73 to Brookhurst	25	61	53	13	40	259	1,010	4.6
2020	ALT3	NP	Brookhurst to SR-22 East	43	105	91	22	69	445	1,746	8.0
2020	ALT3	NP	SR-22 East to I-605	28	69	60	15	45	291	1,139	5.2
2040	NOB	AM	SR-73 to Brookhurst	33	70	148	48	100	234	1,276	4.9
2040	NOB	AM	Brookhurst to SR-22 East	56	113	319	105	215	430	2,245	7.4
2040	NOB	AM	SR-22 East to I-605	38	78	207	67	140	289	1,523	5.2
2040	NOB	PM	SR-73 to Brookhurst	37	83	127	40	87	249	1,436	6.1
2040	NOB	PM	Brookhurst to SR-22 East	72	145	409	134	275	551	2,879	9.5
2040	NOB	PM	SR-22 East to I-605	45	96	218	70	149	337	1,827	6.6
2040	NOB	NP	SR-73 to Brookhurst	22	53	35	8	27	121	570	4.1
2040	NOB	NP	Brookhurst to SR-22 East	36	88	59	14	45	199	962	6.9
2040	NOB	NP	SR-22 East to I-605	26	63	43	10	33	142	700	5.0
2040	ALT1	AM	SR-73 to Brookhurst	30	65	126	41	85	199	1,116	4.6
2040	ALT1	AM	Brookhurst to SR-22 East	45	101	151	48	103	298	1,734	7.3
2040	ALT1	AM	SR-22 East to I-605	29	67	74	23	51	177	1,079	5.1
2040	ALT1	PM	SR-73 to Brookhurst	31	74	57	18	39	167	1,075	5.8
2040	ALT1	PM	Brookhurst to SR-22 East	57	129	185	58	127	373	2,166	9.4
2040	ALT1	PM	SR-22 East to I-605	35	85	70	22	48	200	1,265	6.5
2040	ALT1	NP	SR-73 to Brookhurst	24	58	39	9	30	131	641	4.6
2040	ALT1	NP	Brookhurst to SR-22 East	41	99	66	16	51	226	1,079	7.7
2040	ALT1	NP	SR-22 East to I-605	29	71	48	11	37	160	779	5.5
2040	ALT2	AM	SR-73 to Brookhurst	28	62	119	39	80	187	1,036	4.4
2040	ALT2	AM	Brookhurst to SR-22 East	37	91	51	15	36	189	1,146	7.2
2040	ALT2	AM	SR-22 East to I-605	26	63	49	15	34	146	913	4.9
2040	ALT2	PM	SR-73 to Brookhurst	29	71	53	16	37	157	1,006	5.5
2040	ALT2	PM	Brookhurst to SR-22 East	48	118	62	17	44	239	1,421	9.3
2040	ALT2	PM	SR-22 East to I-605	33	81	47	14	33	170	1,067	6.4
2040	ALT2	NP	SR-73 to Brookhurst	27	65	44	10	34	147	718	5.1
2040	ALT2	NP	Brookhurst to SR-22 East	46	112	75	18	57	257	1,221	8.7
2040	ALT2	NP	SR-22 East to I-605	33	80	54	13	41	180	871	6.2
2040	ALT3	AM	SR-73 to Brookhurst	26	62	60	18	42	155	861	4.7
2040	ALT3	AM	Brookhurst to SR-22 East	39	96	62	18	44	210	1,259	7.6
2040	ALT3	AM	SR-22 East to I-605	29	69	76	23	53	184	1,077	5.2
2040	ALT3	PM	SR-73 to Brookhurst	30	74	41	11	30	152	882	5.9

Appendix A. Regional Operational Emissions (lb/day)

Year	Build ID	Time Period	Segment	PM2.5	PM10	TOG	CH4	ROG	NOx	CO	SOx
2040	ALT3	PM	Brookhurst to SR-22 East	50	123	72	20	52	257	1,523	9.7
2040	ALT3	PM	SR-22 East to I-605	36	88	73	22	51	210	1,270	6.7
2040	ALT3	NP	SR-73 to Brookhurst	26	62	42	10	32	143	678	4.8
2040	ALT3	NP	Brookhurst to SR-22 East	43	105	71	17	54	240	1,146	8.2
2040	ALT3	NP	SR-22 East to I-605	28	69	46	11	35	158	752	5.4

Emissions Summary by Build Alternative and Segment

2009	EXT		SR-73 to Brookhurst	69	150	350	68	283	1,389	7,083	10.4
2009	EXT		Brookhurst to SR-22 East	132	280	688	134	554	2,622	13,156	19.0
2009	EXT		SR-22 East to I-605	87	187	424	82	342	1,745	8,640	12.8
2020	NOB		SR-73 to Brookhurst	72	173	184	49	134	724	3,492	13.1
2020	NOB		Brookhurst to SR-22 East	127	292	535	149	386	1,457	7,168	21.3
2020	NOB		SR-22 East to I-605	81	195	212	58	154	809	4,070	14.8
2020	ALT1		SR-73 to Brookhurst	70	170	151	40	111	669	3,151	13.1
2020	ALT1		Brookhurst to SR-22 East	115	282	224	58	166	1,089	5,093	21.7
2020	ALT1		SR-22 East to I-605	79	194	148	38	110	737	3,381	15.0
2020	ALT2		SR-73 to Brookhurst	70	170	152	40	112	674	3,112	13.1
2020	ALT2		Brookhurst to SR-22 East	118	289	222	56	166	1,145	4,761	22.2
2020	ALT2		SR-22 East to I-605	80	198	152	38	114	774	3,274	15.2
2020	ALT3		SR-73 to Brookhurst	71	174	145	36	109	712	2,952	13.4
2020	ALT3		Brookhurst to SR-22 East	118	289	227	57	170	1,132	4,875	22.3
2020	ALT3		SR-22 East to I-605	80	196	151	38	113	756	3,363	15.1
2040	NOB		SR-73 to Brookhurst	91	206	309	96	213	604	3,281	15.0
2040	NOB		Brookhurst to SR-22 East	164	346	788	253	535	1,180	6,086	23.7
2040	NOB		SR-22 East to I-605	109	237	468	147	322	769	4,049	16.8
2040	ALT1		SR-73 to Brookhurst	85	198	222	68	154	497	2,831	15.0
2040	ALT1		Brookhurst to SR-22 East	142	328	403	122	281	897	4,979	24.5
2040	ALT1		SR-22 East to I-605	93	223	192	57	136	537	3,124	17.1
2040	ALT2		SR-73 to Brookhurst	84	198	216	65	150	491	2,760	15.0
2040	ALT2		Brookhurst to SR-22 East	131	322	188	50	138	686	3,788	25.2
2040	ALT2		SR-22 East to I-605	92	224	150	42	108	497	2,851	17.5
2040	ALT3		SR-73 to Brookhurst	82	198	142	38	104	451	2,422	15.4
2040	ALT3		Brookhurst to SR-22 East	132	325	205	54	150	707	3,929	25.5
2040	ALT3		SR-22 East to I-605	94	226	196	57	139	553	3,099	17.3

Emissions Summary by Build Alternative

2009	**EXT**			288	617	1,463	284	1,179	5,756	28,880	42

Appendix A. Regional Operational Emissions (lb/day)

Year	Build ID	Time Period	Segment	PM2.5	PM10	TOG	CH4	ROG	NOx	CO	SOx
2020	NOB			280	660	931	256	674	2,990	14,730	49
2020	ALT1			263	646	524	136	388	2,495	11,626	50
2020	ALT2			268	657	526	134	392	2,593	11,147	50
2020	ALT3			268	659	523	132	392	2,600	11,190	51
2040	NOB			364	789	1,566	496	1,070	2,553	13,417	55
2040	ALT1			320	749	818	247	571	1,932	10,934	57
2040	ALT2			307	743	553	157	397	1,674	9,399	58
2040	ALT3			308	749	542	150	393	1,711	9,449	58

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****

Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	3.858	17.118	0.000	0.000	0.924
5	0.344	0.411	0.505	3.209	2.761	5.022	0.438
10	0.227	0.271	0.329	2.075	1.889	3.902	0.291
15	0.158	0.188	0.226	1.389	1.346	3.178	0.203
20	0.116	0.137	0.163	0.972	0.999	2.714	0.150
25	0.090	0.105	0.124	0.713	0.771	2.431	0.117
30	0.074	0.086	0.098	0.544	0.619	2.285	0.096
35	0.063	0.073	0.082	0.433	0.517	2.254	0.083
40	0.057	0.066	0.072	0.360	0.449	2.334	0.075
45	0.055	0.062	0.066	0.312	0.406	2.534	0.072
50	0.055	0.062	0.064	0.283	0.381	2.887	0.073
55	0.058	0.065	0.065	0.269	0.373	3.446	0.078
60	0.064	0.071	0.069	0.268	0.378	4.309	0.088
65	0.075	0.082	0.078	0.279	0.399	5.643	0.104

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	23.989	175.300	0.000	0.000	6.144
5	4.165	5.508	5.916	51.347	23.447	34.138	5.329
10	3.538	4.730	4.737	34.168	15.355	28.197	4.410
15	3.079	4.143	3.947	24.016	10.645	24.460	3.768
20	2.730	3.687	3.395	17.836	7.811	22.270	3.302
25	2.461	3.328	2.993	14.001	6.066	21.280	2.954
30	2.249	3.040	2.695	11.609	4.984	21.347	2.691
35	2.084	2.811	2.472	10.169	4.334	22.497	2.495
40	1.958	2.631	2.307	9.410	3.986	24.932	2.354
45	1.869	2.496	2.194	9.198	3.879	29.087	2.266
50	1.818	2.406	2.130	9.500	3.993	35.754	2.234
55	1.810	2.363	2.120	10.365	4.347	46.338	2.270
60	1.856	2.380	2.177	11.949	5.007	63.341	2.397
65	1.981	2.477	2.327	14.553	6.099	91.327	2.660

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	4.881	1.148	0.000	0.000	1.051

5	0.310	0.569	1.059	3.194	19.936	1.040	0.599
10	0.272	0.491	0.913	2.821	15.462	1.061	0.516
15	0.244	0.433	0.811	2.616	12.624	1.087	0.458
20	0.223	0.390	0.740	2.578	10.836	1.117	0.417
25	0.208	0.359	0.693	2.624	9.763	1.151	0.390
30	0.198	0.338	0.665	2.677	9.217	1.189	0.372
35	0.191	0.324	0.654	2.737	9.107	1.229	0.363
40	0.188	0.316	0.658	2.805	9.409	1.272	0.361
45	0.188	0.314	0.677	2.879	10.165	1.318	0.367
50	0.190	0.319	0.714	2.961	11.490	1.366	0.381
55	0.196	0.330	0.772	3.050	13.605	1.417	0.404
60	0.205	0.348	0.858	3.146	16.903	1.470	0.440
65	0.218	0.374	0.983	3.250	22.070	1.527	0.492

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	1009.280	3687.191	0.000	0.000	237.227
5	923.717	1220.779	1680.627	2502.787	2501.412	235.607	1170.977
10	698.201	922.529	1242.006	1693.849	2283.958	199.986	878.798
15	547.762	723.571	959.599	1208.199	2155.545	173.162	686.403
20	446.033	589.033	773.925	909.369	2077.356	152.920	557.616
25	376.962	497.683	650.609	729.141	2028.763	137.738	470.896
30	330.654	436.436	569.343	615.396	1998.490	126.574	413.097
35	301.012	397.227	518.034	545.762	1980.273	118.728	376.269
40	284.394	375.239	489.648	507.991	1970.684	113.771	355.707
45	278.853	367.896	480.516	496.057	1968.037	111.498	348.922
50	283.758	374.362	489.505	508.350	1971.880	111.920	355.120
55	299.669	395.372	517.773	547.214	1982.870	115.294	375.042
60	328.443	433.381	569.033	619.626	2002.960	122.190	411.120
65	373.606	493.045	650.406	739.302	2035.989	133.626	467.985

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.011	0.041	0.000	0.000	0.002
5	0.009	0.012	0.017	0.026	0.025	0.003	0.012
10	0.007	0.009	0.013	0.018	0.022	0.003	0.009
15	0.006	0.007	0.010	0.013	0.021	0.002	0.007
20	0.005	0.006	0.008	0.009	0.020	0.002	0.006
25	0.004	0.005	0.007	0.008	0.020	0.002	0.005
30	0.003	0.004	0.006	0.006	0.019	0.002	0.004
35	0.003	0.004	0.005	0.006	0.019	0.002	0.004
40	0.003	0.004	0.005	0.005	0.019	0.002	0.004
45	0.003	0.004	0.005	0.005	0.019	0.002	0.004
50	0.003	0.004	0.005	0.005	0.019	0.002	0.004
55	0.003	0.004	0.005	0.006	0.019	0.002	0.004
60	0.003	0.004	0.006	0.006	0.019	0.002	0.004
65	0.004	0.005	0.007	0.008	0.020	0.003	0.005

Pollutant Name: PM10 Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL

0	0.000	0.000	0.053	0.000	0.000	0.000	0.011
5	0.017	0.017	0.019	0.070	0.499	0.003	0.019
10	0.011	0.011	0.014	0.048	0.361	0.003	0.013
15	0.008	0.008	0.010	0.033	0.271	0.002	0.009
20	0.006	0.006	0.008	0.024	0.211	0.002	0.007
25	0.005	0.005	0.006	0.020	0.170	0.002	0.005
30	0.004	0.004	0.005	0.018	0.142	0.002	0.004
35	0.003	0.003	0.005	0.016	0.122	0.002	0.004
40	0.003	0.003	0.004	0.016	0.109	0.002	0.003
45	0.003	0.003	0.004	0.016	0.101	0.002	0.003
50	0.003	0.003	0.004	0.017	0.097	0.002	0.003
55	0.003	0.003	0.004	0.019	0.097	0.002	0.003
60	0.003	0.003	0.004	0.022	0.100	0.003	0.003
65	0.003	0.003	0.004	0.026	0.106	0.004	0.004

Pollutant Name: PM10 - Tire Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.008	0.008	0.008	0.008	0.008	0.008	0.008
10	0.008	0.008	0.008	0.008	0.008	0.008	0.008
15	0.008	0.008	0.008	0.008	0.008	0.008	0.008
20	0.008	0.008	0.008	0.008	0.008	0.008	0.008
25	0.008	0.008	0.008	0.008	0.008	0.008	0.008
30	0.008	0.008	0.008	0.008	0.008	0.008	0.008
35	0.008	0.008	0.008	0.008	0.008	0.008	0.008
40	0.008	0.008	0.008	0.008	0.008	0.008	0.008
45	0.008	0.008	0.008	0.008	0.008	0.008	0.008
50	0.008	0.008	0.008	0.008	0.008	0.008	0.008
55	0.008	0.008	0.008	0.008	0.008	0.008	0.008
60	0.008	0.008	0.008	0.008	0.008	0.008	0.008
65	0.008	0.008	0.008	0.008	0.008	0.008	0.008

Pollutant Name: PM10 - Brake Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.037	0.037	0.039	0.044	0.634	0.037	0.039
10	0.037	0.037	0.039	0.044	0.634	0.037	0.039
15	0.037	0.037	0.039	0.044	0.634	0.037	0.039
20	0.037	0.037	0.039	0.044	0.634	0.037	0.039
25	0.037	0.037	0.039	0.044	0.634	0.037	0.039
30	0.037	0.037	0.039	0.044	0.634	0.037	0.039
35	0.037	0.037	0.039	0.044	0.634	0.037	0.039
40	0.037	0.037	0.039	0.044	0.634	0.037	0.039
45	0.037	0.037	0.039	0.044	0.634	0.037	0.039
50	0.037	0.037	0.039	0.044	0.634	0.037	0.039
55	0.037	0.037	0.039	0.044	0.634	0.037	0.039
60	0.037	0.037	0.039	0.044	0.634	0.037	0.039
65	0.037	0.037	0.039	0.044	0.634	0.037	0.039

Pollutant Name: Gasoline - mi/gal Temperature: 70F Relative Humidity: 40%

Speed

MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	9.038	6.870	4.894	3.233	3.203	27.548	7.679
10	11.951	9.084	6.574	4.859	4.815	32.750	10.162
15	15.226	11.572	8.502	6.913	6.851	37.916	12.959
20	18.691	14.204	10.581	9.310	9.227	42.762	15.925
25	22.111	16.802	12.666	11.867	11.764	46.968	18.857
30	25.206	19.153	14.576	14.317	14.195	50.191	21.514
35	27.692	21.042	16.121	16.350	16.214	52.095	23.648
40	29.319	22.279	17.130	17.671	17.528	52.380	25.040
45	29.917	22.734	17.485	18.078	17.936	50.836	25.540
50	29.417	22.356	17.144	17.505	17.371	47.401	25.091
55	27.874	21.184	16.148	16.042	15.923	42.224	23.740
60	25.449	19.342	14.614	13.915	13.815	35.708	21.631
65	22.386	17.016	12.712	11.423	11.344	28.494	18.981

Pollutant Name: Diesel - mi/gal Temperature: 70F Relative Humidity: 40%

Speed

MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	25.639	27.331	19.243	4.247	4.036	0.000	17.937
10	26.997	27.331	19.280	5.159	4.036	0.000	18.094
15	28.003	27.331	19.311	6.291	4.036	0.000	18.225
20	28.714	27.331	19.335	7.480	4.036	0.000	18.329
25	29.178	27.331	19.352	7.994	4.036	0.000	18.392
30	29.425	27.331	19.361	8.486	4.036	0.000	18.431
35	29.473	27.331	19.363	8.934	4.036	0.000	18.448
40	29.327	27.331	19.358	9.313	4.036	0.000	18.442
45	28.976	27.331	19.344	9.600	4.036	0.000	18.413
50	28.394	27.331	19.324	9.774	4.036	0.000	18.356
55	27.543	27.331	19.296	9.823	4.036	0.000	18.270
60	26.370	27.331	19.262	9.743	4.036	0.000	18.152
65	24.814	27.331	19.224	9.540	4.036	0.000	17.997

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****

Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time

min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL

5	0.081	0.077	0.102	1.027	0.206	1.323	0.104
10	0.123	0.127	0.183	1.386	0.319	1.373	0.160
20	0.203	0.220	0.336	2.063	0.530	1.498	0.266
30	0.275	0.304	0.474	2.684	0.719	1.653	0.363
40	0.342	0.381	0.598	3.251	0.886	1.841	0.451
50	0.401	0.450	0.709	3.762	1.033	2.060	0.531
60	0.451	0.508	0.803	4.153	1.149	2.182	0.597
120	0.579	0.668	1.040	4.510	1.264	2.206	0.759
180	0.572	0.662	1.059	4.808	1.344	2.358	0.763
240	0.607	0.701	1.122	5.099	1.422	2.535	0.809
300	0.641	0.740	1.183	5.383	1.498	2.710	0.854
360	0.674	0.778	1.243	5.659	1.572	2.884	0.898
420	0.707	0.816	1.302	5.929	1.643	3.057	0.941
480	0.738	0.852	1.360	6.191	1.712	3.229	0.983
540	0.769	0.888	1.416	6.446	1.779	3.399	1.025
600	0.800	0.923	1.472	6.694	1.844	3.569	1.065
660	0.830	0.957	1.525	6.935	1.906	3.738	1.105
720	0.859	0.991	1.578	7.168	1.966	3.905	1.143

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.722	0.793	1.094	12.268	2.401	5.394	0.981
10	1.122	1.353	1.973	17.306	4.012	5.176	1.575
20	1.885	2.419	3.638	26.821	7.036	4.832	2.703
30	2.598	3.411	5.178	35.586	9.799	4.607	3.752
40	3.259	4.328	6.592	43.602	12.299	4.503	4.721
50	3.871	5.172	7.880	50.868	14.537	4.519	5.610
60	4.431	5.942	9.043	57.385	16.513	4.655	6.420
120	6.422	8.491	11.992	68.726	19.358	7.452	8.867
180	6.087	8.062	11.818	73.058	20.163	9.219	8.613
240	6.513	8.584	12.478	77.194	20.960	11.086	9.164
300	6.901	9.061	13.090	81.132	21.748	12.748	9.672
360	7.252	9.494	13.656	84.873	22.528	14.206	10.136
420	7.566	9.882	14.175	88.417	23.299	15.460	10.555
480	7.843	10.226	14.646	91.764	24.062	16.509	10.931
540	8.082	10.525	15.071	94.913	24.816	17.355	11.263
600	8.285	10.780	15.449	97.865	25.562	17.997	11.550
660	8.450	10.990	15.780	100.621	26.299	18.434	11.794
720	8.578	11.155	16.064	103.179	27.028	18.668	11.994

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.199	0.348	0.631	1.475	0.528	0.217	0.347
10	0.230	0.394	0.747	2.187	0.792	0.243	0.408
20	0.285	0.474	0.950	3.437	1.255	0.290	0.516
30	0.331	0.541	1.118	4.456	1.632	0.330	0.605
40	0.367	0.594	1.250	5.244	1.924	0.363	0.675
50	0.393	0.634	1.347	5.802	2.130	0.388	0.727
60	0.411	0.660	1.408	6.129	2.251	0.407	0.760
120	0.429	0.697	1.469	6.174	2.267	0.411	0.792
180	0.431	0.699	1.469	6.149	2.258	0.402	0.793
240	0.427	0.694	1.459	6.110	2.245	0.391	0.787
300	0.422	0.686	1.444	6.059	2.228	0.378	0.779

360	0.415	0.675	1.424	5.995	2.206	0.361	0.768
420	0.407	0.662	1.400	5.918	2.179	0.342	0.754
480	0.397	0.646	1.370	5.828	2.148	0.320	0.737
540	0.386	0.627	1.336	5.726	2.112	0.295	0.717
600	0.373	0.606	1.296	5.611	2.072	0.268	0.695
660	0.358	0.581	1.252	5.483	2.028	0.237	0.670
720	0.342	0.554	1.203	5.342	1.979	0.204	0.642

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	11.773	14.843	17.497	21.923	3.919	26.314	14.004
10	13.985	17.678	21.534	31.787	6.418	28.943	16.865
20	18.775	23.846	30.171	51.303	11.369	34.064	23.018
30	24.054	30.676	39.558	70.536	16.258	39.000	29.748
40	29.822	38.169	49.696	89.487	21.083	43.754	37.054
50	36.078	46.324	60.584	108.154	25.845	48.324	44.936
60	42.823	55.142	72.223	126.539	30.544	52.711	53.394
120	90.495	118.042	151.151	206.803	50.964	73.054	111.933
180	103.130	134.786	173.382	238.403	59.517	74.637	127.854
240	115.553	151.257	195.126	268.140	67.566	76.129	143.467
300	127.761	167.452	216.382	296.013	75.109	77.530	158.772
360	139.756	183.372	237.149	322.022	82.148	78.841	173.769
420	151.537	199.018	257.429	346.168	88.683	80.062	188.458
480	163.105	214.389	277.221	368.450	94.713	81.193	202.839
540	174.458	229.485	296.525	388.869	100.238	82.233	216.913
600	185.599	244.306	315.341	407.424	105.258	83.182	230.679
660	196.525	258.852	333.669	424.115	109.774	84.042	244.137
720	207.238	273.124	351.510	438.943	113.785	84.810	257.287

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.001	0.000	0.000	0.000
20	0.000	0.000	0.000	0.001	0.000	0.000	0.000
30	0.000	0.000	0.000	0.001	0.000	0.001	0.000
40	0.000	0.000	0.001	0.002	0.000	0.001	0.000
50	0.000	0.001	0.001	0.002	0.001	0.001	0.001
60	0.001	0.001	0.001	0.002	0.001	0.001	0.001
120	0.001	0.001	0.002	0.003	0.001	0.001	0.001
180	0.001	0.002	0.002	0.004	0.001	0.001	0.001
240	0.001	0.002	0.002	0.004	0.001	0.001	0.002
300	0.001	0.002	0.002	0.004	0.001	0.001	0.002
360	0.002	0.002	0.003	0.005	0.001	0.001	0.002
420	0.002	0.002	0.003	0.005	0.001	0.001	0.002
480	0.002	0.002	0.003	0.005	0.001	0.001	0.002
540	0.002	0.003	0.003	0.006	0.001	0.001	0.002
600	0.002	0.003	0.003	0.006	0.002	0.001	0.003
660	0.002	0.003	0.004	0.006	0.002	0.001	0.003
720	0.002	0.003	0.004	0.006	0.002	0.001	0.003

Pollutant Name: PM10 Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.001	0.001	0.001	0.005	0.001	0.005	0.001
10	0.001	0.001	0.001	0.005	0.001	0.004	0.001
20	0.002	0.002	0.002	0.006	0.001	0.003	0.002
30	0.003	0.003	0.002	0.006	0.001	0.003	0.003
40	0.003	0.003	0.003	0.007	0.001	0.002	0.003
50	0.004	0.004	0.004	0.008	0.001	0.002	0.004
60	0.004	0.005	0.004	0.009	0.001	0.002	0.004
120	0.007	0.007	0.006	0.013	0.002	0.004	0.007
180	0.007	0.007	0.006	0.015	0.002	0.005	0.007
240	0.008	0.008	0.007	0.016	0.002	0.007	0.008
300	0.009	0.008	0.007	0.018	0.002	0.008	0.008
360	0.009	0.009	0.007	0.019	0.002	0.009	0.009
420	0.009	0.009	0.008	0.020	0.002	0.010	0.009
480	0.010	0.010	0.008	0.022	0.003	0.011	0.009
540	0.010	0.010	0.008	0.022	0.003	0.012	0.010
600	0.010	0.010	0.008	0.023	0.003	0.012	0.010
660	0.011	0.010	0.008	0.024	0.003	0.013	0.010
720	0.011	0.011	0.009	0.024	0.003	0.013	0.010

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****

Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.056	0.052	0.028	0.060	0.045	0.196	0.050
10	0.104	0.096	0.052	0.111	0.083	0.362	0.092
20	0.144	0.133	0.072	0.154	0.115	0.503	0.128
30	0.178	0.164	0.089	0.191	0.142	0.621	0.158
40	0.206	0.191	0.104	0.222	0.164	0.720	0.183

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246

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Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  5a:  Partial Day Diurnal Loss Emissions (grams/hour)

     Pollutant Name: Reactive Org Gases        Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.117    0.111    0.051    0.015    0.003    0.351    0.107
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  5b:  Multi-Day Diurnal Loss Emissions (grams/hour)

     Pollutant Name: Reactive Org Gases        Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.009    0.009    0.004    0.001    0.001    0.028    0.009
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average
```

Table 6a: Partial Day Resting Loss Emissions (grams/hour)

Pollutant Name: Reactive Org Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
70	0.047	0.046	0.024	0.007	0.001	0.131	0.044

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****
Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 6b: Multi-Day Resting Loss Emissions (grams/hour)

Pollutant Name: Reactive Org Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
70	0.004	0.004	0.002	0.000	0.000	0.010	0.003

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****
Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 7: Estimated Travel Fractions

Pollutant Name: Temperature: ALL Relative Humidity: ALL

	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
%VMT	0.518	0.255	0.214	0.006	0.002	0.004	1.000
%TRIP	0.519	0.235	0.228	0.011	0.000	0.007	1.000
%VEH	0.538	0.243	0.187	0.010	0.001	0.022	1.000

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table   8:  Evaporative Running Loss Emissions (grams/minute)

     Pollutant Name: Reactive Org Gases        Temperature:  70F  Relative Humidity: ALL

     Time
      min       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

        1      0.018    0.329    0.177    0.756    0.330    0.154    0.137
        2      0.024    0.171    0.093    0.416    0.178    0.184    0.080
        3      0.028    0.120    0.067    0.304    0.128    0.199    0.062
        4      0.031    0.096    0.055    0.249    0.103    0.208    0.055
        5      0.034    0.082    0.047    0.217    0.088    0.215    0.051
       10      0.039    0.057    0.035    0.154    0.058    0.232    0.044
       15      0.041    0.051    0.032    0.135    0.049    0.241    0.043
       20      0.041    0.050    0.032    0.127    0.044    0.248    0.043
       25      0.042    0.051    0.033    0.123    0.042    0.254    0.044
       30      0.041    0.050    0.032    0.122    0.041    0.252    0.043
       35      0.041    0.049    0.032    0.121    0.041    0.250    0.043
       40      0.041    0.049    0.032    0.120    0.041    0.248    0.042
       45      0.040    0.048    0.031    0.119    0.041    0.247    0.042
       50      0.040    0.048    0.031    0.118    0.040    0.241    0.041
       55      0.039    0.047    0.031    0.117    0.040    0.234    0.041
       60      0.038    0.047    0.031    0.116    0.040    0.227    0.040
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table   1:  Running Exhaust Emissions (grams/mile; grams/idle-hour)

     Pollutant Name: Reactive Org Gases        Temperature:  70F  Relative Humidity:  40%
```

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	4.004	16.343	0.000	0.000	0.925
5	0.068	0.116	0.239	0.749	2.062	4.694	0.147
10	0.043	0.074	0.154	0.476	1.415	3.534	0.097
15	0.030	0.050	0.106	0.310	1.012	2.800	0.068
20	0.021	0.036	0.077	0.213	0.753	2.333	0.050
25	0.016	0.027	0.058	0.157	0.583	2.047	0.040
30	0.013	0.021	0.046	0.120	0.469	1.891	0.033
35	0.011	0.018	0.038	0.095	0.393	1.840	0.029
40	0.010	0.016	0.034	0.079	0.342	1.885	0.027
45	0.009	0.015	0.031	0.068	0.310	2.033	0.026
50	0.009	0.015	0.030	0.062	0.292	2.307	0.027
55	0.009	0.015	0.030	0.059	0.285	2.751	0.029
60	0.010	0.016	0.032	0.059	0.290	3.448	0.034
65	0.012	0.019	0.036	0.062	0.306	4.537	0.042

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	24.983	172.583	0.000	0.000	6.221
5	1.209	1.938	2.973	12.637	15.057	23.076	1.969
10	1.087	1.734	2.475	8.407	9.819	19.613	1.695
15	0.985	1.562	2.125	5.904	6.781	17.305	1.491
20	0.897	1.418	1.867	4.384	4.959	15.817	1.334
25	0.821	1.294	1.670	3.444	3.840	14.971	1.209
30	0.756	1.189	1.514	2.858	3.147	14.689	1.109
35	0.698	1.097	1.390	2.505	2.730	14.980	1.029
40	0.649	1.019	1.292	2.319	2.507	15.943	0.965
45	0.605	0.951	1.214	2.266	2.436	17.789	0.918
50	0.568	0.894	1.156	2.340	2.505	20.912	0.888
55	0.537	0.846	1.119	2.552	2.726	26.011	0.878
60	0.512	0.808	1.105	2.940	3.138	34.331	0.896
65	0.493	0.779	1.121	3.578	3.823	48.149	0.956

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	5.089	1.050	0.000	0.000	1.049
5	0.105	0.191	0.535	1.569	15.175	1.153	0.263
10	0.092	0.165	0.461	1.303	11.773	1.109	0.225
15	0.082	0.146	0.409	1.140	9.616	1.080	0.198
20	0.074	0.131	0.373	1.079	8.257	1.064	0.179
25	0.068	0.120	0.349	1.076	7.441	1.060	0.166
30	0.064	0.112	0.334	1.078	7.027	1.065	0.158
35	0.061	0.106	0.328	1.085	6.944	1.079	0.154
40	0.059	0.103	0.329	1.098	7.175	1.102	0.153
45	0.058	0.102	0.339	1.117	7.750	1.132	0.156
50	0.058	0.102	0.357	1.141	8.758	1.172	0.162
55	0.059	0.105	0.387	1.170	10.367	1.221	0.174
60	0.061	0.110	0.430	1.205	12.876	1.281	0.191
65	0.064	0.117	0.492	1.246	16.807	1.353	0.217

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	1106.747	3774.652	0.000	0.000	250.804
5	928.732	1223.134	1703.437	2505.206	2435.950	263.561	1173.306
10	701.933	924.296	1255.434	1691.459	2218.497	220.050	879.835
15	550.636	724.946	967.929	1204.075	2090.084	189.140	686.772
20	448.328	590.142	779.409	904.624	2011.894	167.322	557.635
25	378.870	498.614	654.474	723.247	1963.301	152.353	470.735
30	332.311	437.249	572.284	608.989	1933.028	142.843	412.855
35	302.524	397.969	520.466	539.212	1914.811	138.001	376.006
40	285.846	375.946	491.840	501.522	1905.222	137.521	355.467
45	280.327	368.601	482.670	489.819	1902.575	141.538	348.744
50	285.335	375.097	491.808	502.476	1906.418	150.676	355.047
55	301.444	396.175	520.446	541.865	1917.408	166.178	375.134
60	330.537	434.297	572.384	615.045	1937.498	190.184	411.466
65	376.182	494.132	654.925	735.897	1970.528	226.208	468.723

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.012	0.041	0.000	0.000	0.003
5	0.009	0.012	0.017	0.025	0.024	0.003	0.012
10	0.007	0.009	0.013	0.017	0.022	0.003	0.009
15	0.006	0.007	0.010	0.012	0.020	0.002	0.007
20	0.005	0.006	0.008	0.009	0.019	0.002	0.006
25	0.004	0.005	0.007	0.007	0.019	0.002	0.005
30	0.003	0.004	0.006	0.006	0.019	0.002	0.004
35	0.003	0.004	0.005	0.005	0.018	0.002	0.004
40	0.003	0.004	0.005	0.005	0.018	0.002	0.004
45	0.003	0.004	0.005	0.005	0.018	0.002	0.004
50	0.003	0.004	0.005	0.005	0.018	0.002	0.004
55	0.003	0.004	0.005	0.005	0.018	0.002	0.004
60	0.003	0.004	0.006	0.006	0.019	0.003	0.004
65	0.004	0.005	0.007	0.007	0.019	0.003	0.005

Pollutant Name: PM10 Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.052	0.000	0.000	0.000	0.011
5	0.009	0.010	0.013	0.030	0.396	0.001	0.011
10	0.006	0.006	0.009	0.021	0.287	0.000	0.007
15	0.004	0.004	0.007	0.015	0.216	0.000	0.005
20	0.003	0.003	0.005	0.011	0.168	0.000	0.004
25	0.002	0.002	0.004	0.010	0.135	0.000	0.003
30	0.002	0.002	0.004	0.009	0.113	0.000	0.002
35	0.001	0.002	0.003	0.008	0.097	0.000	0.002
40	0.001	0.001	0.003	0.008	0.087	0.000	0.002
45	0.001	0.001	0.003	0.009	0.081	0.000	0.002
50	0.001	0.001	0.002	0.010	0.078	0.000	0.002
55	0.001	0.001	0.002	0.011	0.077	0.000	0.002
60	0.001	0.002	0.002	0.013	0.079	0.000	0.002
65	0.002	0.002	0.003	0.015	0.085	0.001	0.002

Pollutant Name: PM10 - Tire Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.008	0.008	0.008	0.008	0.008	0.008	0.008
10	0.008	0.008	0.008	0.008	0.008	0.008	0.008
15	0.008	0.008	0.008	0.008	0.008	0.008	0.008
20	0.008	0.008	0.008	0.008	0.008	0.008	0.008
25	0.008	0.008	0.008	0.008	0.008	0.008	0.008
30	0.008	0.008	0.008	0.008	0.008	0.008	0.008
35	0.008	0.008	0.008	0.008	0.008	0.008	0.008
40	0.008	0.008	0.008	0.008	0.008	0.008	0.008
45	0.008	0.008	0.008	0.008	0.008	0.008	0.008
50	0.008	0.008	0.008	0.008	0.008	0.008	0.008
55	0.008	0.008	0.008	0.008	0.008	0.008	0.008
60	0.008	0.008	0.008	0.008	0.008	0.008	0.008
65	0.008	0.008	0.008	0.008	0.008	0.008	0.008

Pollutant Name: PM10 - Brake Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.037	0.037	0.039	0.043	0.634	0.037	0.039
10	0.037	0.037	0.039	0.043	0.634	0.037	0.039
15	0.037	0.037	0.039	0.043	0.634	0.037	0.039
20	0.037	0.037	0.039	0.043	0.634	0.037	0.039
25	0.037	0.037	0.039	0.043	0.634	0.037	0.039
30	0.037	0.037	0.039	0.043	0.634	0.037	0.039
35	0.037	0.037	0.039	0.043	0.634	0.037	0.039
40	0.037	0.037	0.039	0.043	0.634	0.037	0.039
45	0.037	0.037	0.039	0.043	0.634	0.037	0.039
50	0.037	0.037	0.039	0.043	0.634	0.037	0.039
55	0.037	0.037	0.039	0.043	0.634	0.037	0.039
60	0.037	0.037	0.039	0.043	0.634	0.037	0.039
65	0.037	0.037	0.039	0.043	0.634	0.037	0.039

Pollutant Name: Gasoline - mi/gal Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	9.022	6.886	4.837	3.317	3.255	26.716	7.698
10	11.936	9.109	6.512	4.986	4.893	32.070	10.193
15	15.213	11.609	8.440	7.093	6.961	37.314	13.007
20	18.683	14.256	10.523	9.551	9.375	42.099	15.991
25	22.108	16.869	12.617	12.172	11.951	46.063	18.942
30	25.208	19.233	14.538	14.684	14.421	48.860	21.614
35	27.696	21.132	16.093	16.765	16.469	50.200	23.758
40	29.322	22.373	17.108	18.117	17.803	49.887	25.152
45	29.913	22.824	17.462	18.530	18.215	47.851	25.646
50	29.404	22.437	17.114	17.939	17.639	44.178	25.184
55	27.850	21.253	16.105	16.437	16.167	39.124	23.816

60	25.416	19.397	14.557	14.255	14.025	33.109	21.690
65	22.348	17.057	12.643	11.701	11.515	26.675	19.023

Pollutant Name: Diesel - mi/gal Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	20.588	20.836	19.376	4.223	4.184	0.000	17.708
10	24.639	24.733	19.422	5.130	4.184	0.000	18.219
15	28.432	28.325	19.465	6.255	4.184	0.000	18.703
20	31.675	31.353	19.502	7.438	4.184	0.000	19.121
25	34.105	33.597	19.529	7.950	4.184	0.000	19.425
30	35.525	34.898	19.545	8.439	4.184	0.000	19.607
35	35.816	35.164	19.548	8.884	4.184	0.000	19.653
40	34.955	34.377	19.539	9.261	4.184	0.000	19.559
45	33.013	32.591	19.517	9.546	4.184	0.000	19.333
50	30.150	29.934	19.484	9.720	4.184	0.000	18.993
55	26.598	26.595	19.444	9.769	4.184	0.000	18.567
60	22.639	22.817	19.399	9.689	4.184	0.000	18.088
65	18.569	18.870	19.352	9.487	4.184	0.000	17.592

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.009	0.016	0.049	0.240	0.118	0.742	0.027
10	0.017	0.031	0.095	0.458	0.225	0.877	0.049
20	0.032	0.060	0.181	0.860	0.421	1.140	0.091
30	0.046	0.086	0.261	1.216	0.594	1.394	0.129
40	0.060	0.110	0.334	1.525	0.745	1.639	0.164
50	0.072	0.133	0.400	1.788	0.874	1.876	0.195
60	0.084	0.152	0.460	2.004	0.979	2.042	0.224
120	0.129	0.225	0.664	2.238	1.088	2.267	0.316
180	0.127	0.221	0.668	2.375	1.155	2.314	0.317
240	0.134	0.234	0.709	2.508	1.219	2.464	0.336
300	0.142	0.248	0.749	2.636	1.282	2.611	0.355
360	0.150	0.261	0.788	2.760	1.342	2.756	0.374
420	0.158	0.274	0.827	2.880	1.401	2.898	0.392
480	0.165	0.287	0.866	2.995	1.457	3.037	0.410

540	0.173	0.299	0.904	3.106	1.511	3.174	0.428
600	0.180	0.312	0.941	3.213	1.563	3.308	0.446
660	0.187	0.324	0.978	3.316	1.613	3.439	0.463
720	0.195	0.336	1.014	3.414	1.661	3.567	0.480

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.120	0.215	0.535	3.744	1.494	3.330	0.303
10	0.236	0.423	1.035	7.248	2.878	3.802	0.572
20	0.458	0.820	1.989	13.812	5.472	4.718	1.084
30	0.668	1.193	2.881	19.784	7.832	5.596	1.562
40	0.866	1.541	3.713	25.163	9.959	6.436	2.007
50	1.052	1.865	4.482	29.951	11.851	7.238	2.419
60	1.225	2.164	5.191	34.146	13.510	8.002	2.798
120	1.895	3.248	7.492	39.680	15.628	11.443	4.022
180	1.798	3.073	7.268	40.870	16.102	11.419	3.892
240	1.943	3.297	7.778	42.095	16.589	12.560	4.161
300	2.073	3.499	8.237	43.355	17.089	13.604	4.404
360	2.185	3.676	8.645	44.650	17.602	14.551	4.620
420	2.282	3.830	9.002	45.979	18.128	15.402	4.811
480	2.361	3.961	9.308	47.343	18.667	16.156	4.975
540	2.425	4.069	9.563	48.742	19.220	16.813	5.113
600	2.471	4.153	9.768	50.176	19.786	17.373	5.225
660	2.502	4.214	9.921	51.645	20.364	17.837	5.310
720	2.515	4.251	10.024	53.148	20.957	18.204	5.370

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.067	0.131	0.544	0.846	0.483	0.164	0.203
10	0.070	0.141	0.599	1.274	0.727	0.200	0.226
20	0.077	0.160	0.697	2.026	1.156	0.266	0.266
30	0.083	0.176	0.779	2.639	1.506	0.320	0.300
40	0.088	0.189	0.845	3.112	1.776	0.362	0.326
50	0.092	0.199	0.896	3.446	1.967	0.394	0.347
60	0.095	0.206	0.930	3.642	2.078	0.415	0.360
120	0.103	0.221	0.992	3.668	2.093	0.417	0.383
180	0.104	0.222	0.993	3.654	2.085	0.413	0.383
240	0.103	0.221	0.985	3.634	2.074	0.406	0.381
300	0.102	0.218	0.974	3.606	2.058	0.396	0.376
360	0.100	0.214	0.959	3.571	2.038	0.386	0.371
420	0.098	0.210	0.939	3.529	2.014	0.373	0.363
480	0.095	0.204	0.916	3.480	1.986	0.358	0.354
540	0.092	0.198	0.888	3.424	1.954	0.341	0.344
600	0.088	0.190	0.856	3.360	1.917	0.323	0.332
660	0.084	0.182	0.820	3.290	1.877	0.303	0.318
720	0.079	0.172	0.780	3.212	1.833	0.280	0.303

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL

5	12.600	16.264	19.694	9.736	2.569	15.464	15.111
10	14.159	18.410	22.827	19.219	5.026	17.741	17.273
20	17.792	23.360	29.850	38.026	9.899	22.204	22.188
30	22.111	29.183	37.881	56.620	14.716	26.547	27.893
40	27.116	35.881	46.921	75.003	19.478	30.770	34.388
50	32.808	43.453	56.970	93.173	24.185	34.873	41.674
60	39.185	51.899	68.027	111.132	28.837	38.855	49.749
120	91.160	119.642	152.363	188.875	48.978	56.848	113.079
180	103.486	135.962	173.683	223.043	57.815	60.665	128.642
240	115.788	152.220	194.799	255.194	66.131	64.259	144.106
300	128.068	168.416	215.710	285.329	73.925	67.629	159.471
360	140.324	184.550	236.418	313.447	81.198	70.776	174.738
420	152.557	200.621	256.921	339.548	87.949	73.699	189.906
480	164.767	216.631	277.220	363.633	94.178	76.398	204.976
540	176.954	232.579	297.314	385.701	99.886	78.873	219.946
600	189.118	248.464	317.204	405.752	105.072	81.125	234.818
660	201.259	264.288	336.890	423.787	109.737	83.154	249.592
720	213.376	280.049	356.372	439.805	113.880	84.958	264.266

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.001	0.000	0.000	0.000
30	0.000	0.000	0.000	0.001	0.000	0.000	0.000
40	0.000	0.000	0.001	0.001	0.000	0.000	0.000
50	0.000	0.000	0.001	0.001	0.000	0.001	0.000
60	0.000	0.001	0.001	0.002	0.001	0.001	0.001
120	0.001	0.001	0.002	0.003	0.001	0.001	0.001
180	0.001	0.001	0.002	0.003	0.001	0.001	0.001
240	0.001	0.002	0.002	0.003	0.001	0.001	0.002
300	0.001	0.002	0.002	0.004	0.001	0.001	0.002
360	0.001	0.002	0.003	0.004	0.001	0.001	0.002
420	0.002	0.002	0.003	0.004	0.001	0.001	0.002
480	0.002	0.002	0.003	0.005	0.001	0.001	0.002
540	0.002	0.002	0.003	0.005	0.001	0.001	0.002
600	0.002	0.003	0.003	0.005	0.001	0.001	0.002
660	0.002	0.003	0.004	0.005	0.001	0.001	0.003
720	0.002	0.003	0.004	0.005	0.002	0.001	0.003

Pollutant Name: PM10 Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.001	0.000	0.000	0.000
20	0.001	0.001	0.001	0.001	0.000	0.000	0.001
30	0.001	0.001	0.001	0.002	0.000	0.000	0.001
40	0.001	0.001	0.001	0.002	0.000	0.000	0.001
50	0.001	0.002	0.002	0.003	0.001	0.000	0.001
60	0.001	0.002	0.002	0.003	0.001	0.000	0.002
120	0.002	0.003	0.003	0.004	0.001	0.001	0.003
180	0.002	0.003	0.003	0.004	0.001	0.001	0.003
240	0.003	0.003	0.003	0.004	0.001	0.001	0.003
300	0.003	0.003	0.003	0.004	0.001	0.001	0.003
360	0.003	0.004	0.004	0.005	0.001	0.001	0.003

420	0.003	0.004	0.004	0.005	0.001	0.001	0.003
480	0.003	0.004	0.004	0.005	0.001	0.001	0.004
540	0.003	0.004	0.004	0.005	0.001	0.001	0.004
600	0.003	0.004	0.004	0.005	0.001	0.001	0.004
660	0.003	0.004	0.004	0.005	0.001	0.001	0.004
720	0.003	0.004	0.004	0.005	0.001	0.001	0.004

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.024	0.040	0.039	0.022	0.032	0.102	0.032
10	0.044	0.074	0.072	0.041	0.059	0.190	0.059
20	0.061	0.103	0.100	0.058	0.082	0.265	0.081
30	0.075	0.126	0.123	0.071	0.101	0.329	0.100
40	0.087	0.146	0.143	0.083	0.117	0.382	0.116

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 5a: Partial Day Diurnal Loss Emissions (grams/hour)

Pollutant Name: Reactive Org Gases Temperature: ALL Relative Humidity: ALL

Temp

degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
70	0.035	0.067	0.058	0.007	0.002	0.287	0.053

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 5b: Multi-Day Diurnal Loss Emissions (grams/hour)

Pollutant Name: Reactive Org Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
70	0.003	0.005	0.004	0.000	0.001	0.027	0.004

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 6a: Partial Day Resting Loss Emissions (grams/hour)

Pollutant Name: Reactive Org Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
70	0.019	0.037	0.036	0.004	0.001	0.098	0.029

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 6b: Multi-Day Resting Loss Emissions (grams/hour)

Pollutant Name: Reactive Org Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
70	0.001	0.003	0.003	0.000	0.000	0.010	0.002

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 7: Estimated Travel Fractions

Pollutant Name: Temperature: ALL Relative Humidity: ALL

	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
%VMT	0.524	0.257	0.205	0.006	0.002	0.005	1.000
%TRIP	0.512	0.234	0.235	0.011	0.000	0.007	1.000
%VEH	0.529	0.245	0.194	0.010	0.001	0.022	1.000

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual

Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 8: Evaporative Running Loss Emissions (grams/minute)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	0.006	0.227	0.260	0.660	0.527	0.010	0.121
2	0.006	0.116	0.134	0.340	0.271	0.043	0.064
3	0.008	0.081	0.094	0.235	0.186	0.060	0.047
4	0.010	0.065	0.076	0.185	0.144	0.070	0.039
5	0.012	0.056	0.065	0.154	0.119	0.076	0.035
10	0.015	0.038	0.044	0.096	0.069	0.088	0.028
15	0.016	0.033	0.039	0.078	0.054	0.091	0.026
20	0.017	0.031	0.036	0.070	0.046	0.093	0.025
25	0.017	0.031	0.036	0.067	0.042	0.093	0.025
30	0.017	0.030	0.035	0.066	0.042	0.092	0.025
35	0.017	0.030	0.035	0.065	0.042	0.091	0.025
40	0.017	0.030	0.035	0.065	0.041	0.089	0.024
45	0.016	0.029	0.034	0.064	0.041	0.088	0.024
50	0.016	0.029	0.034	0.064	0.041	0.087	0.024
55	0.016	0.029	0.034	0.063	0.040	0.086	0.024
60	0.016	0.029	0.033	0.063	0.040	0.085	0.023

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual

Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	3.849	12.619	0.000	0.000	0.937
5	0.048	0.062	0.093	0.267	0.845	4.670	0.079
10	0.030	0.039	0.059	0.164	0.597	3.503	0.052
15	0.021	0.026	0.041	0.101	0.438	2.765	0.037
20	0.015	0.019	0.030	0.068	0.334	2.298	0.028
25	0.011	0.014	0.023	0.051	0.264	2.011	0.022
30	0.009	0.011	0.019	0.040	0.217	1.853	0.018
35	0.008	0.010	0.016	0.032	0.185	1.800	0.016
40	0.007	0.009	0.014	0.027	0.164	1.841	0.015
45	0.006	0.008	0.013	0.023	0.151	1.984	0.015
50	0.006	0.008	0.012	0.021	0.143	2.250	0.016

55	0.007	0.008	0.013	0.020	0.142	2.683	0.017
60	0.007	0.009	0.013	0.020	0.145	3.363	0.020
65	0.008	0.011	0.015	0.020	0.154	4.428	0.025

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	24.227	135.734	0.000	0.000	6.357
5	0.918	1.110	1.439	6.083	6.627	21.980	1.205
10	0.837	1.010	1.245	4.039	4.269	18.771	1.063
15	0.765	0.923	1.099	2.829	2.916	16.608	0.952
20	0.701	0.845	0.984	2.098	2.111	15.190	0.862
25	0.644	0.777	0.891	1.652	1.620	14.354	0.787
30	0.594	0.716	0.813	1.374	1.318	14.033	0.725
35	0.549	0.662	0.748	1.207	1.136	14.233	0.672
40	0.509	0.613	0.693	1.119	1.037	15.039	0.629
45	0.473	0.570	0.646	1.095	1.004	16.642	0.594
50	0.441	0.531	0.606	1.131	1.029	19.394	0.567
55	0.412	0.497	0.573	1.233	1.117	23.918	0.552
60	0.386	0.466	0.547	1.419	1.284	31.331	0.550
65	0.363	0.438	0.529	1.724	1.564	43.670	0.569

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	5.079	0.874	0.000	0.000	1.109
5	0.083	0.103	0.225	1.110	9.100	1.169	0.153
10	0.073	0.090	0.194	0.899	7.031	1.117	0.131
15	0.065	0.080	0.173	0.755	5.716	1.082	0.115
20	0.059	0.072	0.158	0.680	4.887	1.061	0.104
25	0.054	0.066	0.147	0.655	4.387	1.052	0.096
30	0.050	0.062	0.141	0.636	4.130	1.054	0.091
35	0.048	0.059	0.138	0.623	4.074	1.065	0.088
40	0.046	0.056	0.138	0.616	4.209	1.085	0.087
45	0.045	0.055	0.142	0.615	4.553	1.115	0.088
50	0.045	0.055	0.148	0.620	5.159	1.153	0.091
55	0.046	0.056	0.159	0.631	6.130	1.202	0.096
60	0.047	0.058	0.176	0.649	7.646	1.263	0.105
65	0.049	0.060	0.200	0.672	10.025	1.337	0.119

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	1098.432	3018.000	0.000	0.000	262.765
5	929.357	1224.269	1706.774	2504.384	2346.548	266.365	1192.893
10	702.382	925.148	1258.243	1699.878	2129.095	222.036	894.020
15	550.967	725.608	970.287	1215.470	2000.682	190.709	697.544
20	448.580	590.677	781.411	916.857	1922.493	168.739	566.207
25	379.068	499.062	656.209	737.714	1873.900	153.807	477.897
30	332.473	437.640	573.826	624.391	1843.626	144.484	419.096
35	302.664	398.323	521.878	554.805	1825.409	139.973	381.667
40	285.976	376.280	493.176	516.866	1815.821	139.980	360.805

45	280.455	368.931	483.979	504.625	1813.173	144.678	353.970
50	285.471	375.435	493.136	516.493	1817.017	154.755	360.361
55	301.598	396.537	521.840	554.784	1828.007	171.562	380.747
60	330.722	434.700	573.896	626.385	1848.097	197.406	417.631
65	376.415	494.599	656.613	744.835	1881.126	236.072	475.781

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.011	0.033	0.000	0.000	0.003
5	0.009	0.012	0.017	0.025	0.023	0.003	0.012
10	0.007	0.009	0.013	0.017	0.021	0.003	0.009
15	0.006	0.007	0.010	0.012	0.019	0.002	0.007
20	0.005	0.006	0.008	0.009	0.018	0.002	0.006
25	0.004	0.005	0.007	0.007	0.018	0.002	0.005
30	0.003	0.004	0.006	0.006	0.018	0.002	0.004
35	0.003	0.004	0.005	0.006	0.018	0.002	0.004
40	0.003	0.004	0.005	0.005	0.017	0.002	0.004
45	0.003	0.004	0.005	0.005	0.017	0.002	0.004
50	0.003	0.004	0.005	0.005	0.017	0.002	0.004
55	0.003	0.004	0.005	0.006	0.018	0.002	0.004
60	0.003	0.004	0.006	0.006	0.018	0.003	0.004
65	0.004	0.005	0.007	0.008	0.018	0.003	0.005

Pollutant Name: PM10 Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.051	0.000	0.000	0.000	0.011
5	0.011	0.011	0.012	0.008	0.270	0.000	0.012
10	0.007	0.007	0.008	0.006	0.196	0.000	0.008
15	0.005	0.005	0.006	0.005	0.147	0.000	0.005
20	0.003	0.003	0.004	0.004	0.115	0.000	0.004
25	0.003	0.003	0.003	0.003	0.092	0.000	0.003
30	0.002	0.002	0.003	0.003	0.077	0.000	0.002
35	0.002	0.002	0.002	0.003	0.067	0.000	0.002
40	0.002	0.002	0.002	0.003	0.060	0.000	0.002
45	0.001	0.001	0.002	0.004	0.055	0.000	0.002
50	0.001	0.001	0.002	0.004	0.053	0.000	0.002
55	0.002	0.002	0.002	0.005	0.053	0.000	0.002
60	0.002	0.002	0.002	0.006	0.054	0.000	0.002
65	0.002	0.002	0.002	0.007	0.058	0.000	0.002

Pollutant Name: PM10 - Tire Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.008	0.008	0.008	0.008	0.008	0.008	0.008
10	0.008	0.008	0.008	0.008	0.008	0.008	0.008
15	0.008	0.008	0.008	0.008	0.008	0.008	0.008
20	0.008	0.008	0.008	0.008	0.008	0.008	0.008
25	0.008	0.008	0.008	0.008	0.008	0.008	0.008
30	0.008	0.008	0.008	0.008	0.008	0.008	0.008

35	0.008	0.008	0.008	0.008	0.008	0.008	0.008
40	0.008	0.008	0.008	0.008	0.008	0.008	0.008
45	0.008	0.008	0.008	0.008	0.008	0.008	0.008
50	0.008	0.008	0.008	0.008	0.008	0.008	0.008
55	0.008	0.008	0.008	0.008	0.008	0.008	0.008
60	0.008	0.008	0.008	0.008	0.008	0.008	0.008
65	0.008	0.008	0.008	0.008	0.008	0.008	0.008

Pollutant Name: PM10 - Brake Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.037	0.037	0.039	0.045	0.634	0.037	0.039
10	0.037	0.037	0.039	0.045	0.634	0.037	0.039
15	0.037	0.037	0.039	0.045	0.634	0.037	0.039
20	0.037	0.037	0.039	0.045	0.634	0.037	0.039
25	0.037	0.037	0.039	0.045	0.634	0.037	0.039
30	0.037	0.037	0.039	0.045	0.634	0.037	0.039
35	0.037	0.037	0.039	0.045	0.634	0.037	0.039
40	0.037	0.037	0.039	0.045	0.634	0.037	0.039
45	0.037	0.037	0.039	0.045	0.634	0.037	0.039
50	0.037	0.037	0.039	0.045	0.634	0.037	0.039
55	0.037	0.037	0.039	0.045	0.634	0.037	0.039
60	0.037	0.037	0.039	0.045	0.634	0.037	0.039
65	0.037	0.037	0.039	0.045	0.634	0.037	0.039

Pollutant Name: Gasoline - mi/gal Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	9.022	6.887	4.832	3.333	3.321	26.631	7.571
10	11.937	9.111	6.506	5.010	4.992	32.001	10.034
15	15.215	11.614	8.432	7.127	7.102	37.253	12.814
20	18.687	14.264	10.514	9.597	9.563	42.032	15.766
25	22.114	16.881	12.606	12.231	12.189	45.970	18.686
30	25.215	19.248	14.525	14.753	14.703	48.721	21.333
35	27.704	21.148	16.078	16.844	16.788	50.001	23.457
40	29.330	22.389	17.091	18.201	18.142	49.623	24.841
45	29.920	22.840	17.444	18.616	18.556	47.534	25.333
50	29.410	22.450	17.094	18.021	17.964	43.834	24.879
55	27.854	21.262	16.085	16.512	16.460	38.791	23.528
60	25.418	19.402	14.538	14.319	14.275	32.826	21.427
65	22.348	17.058	12.625	11.753	11.718	26.473	18.792

Pollutant Name: Diesel - mi/gal Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	19.999	20.017	19.426	4.182	4.405	0.000	17.406
10	24.295	24.307	19.477	5.080	4.405	0.000	17.892
15	28.437	28.439	19.525	6.194	4.405	0.000	18.370
20	32.073	32.064	19.568	7.366	4.405	0.000	18.798

25	34.857	34.838	19.600	7.872	4.405	0.000	19.110
30	36.508	36.482	19.619	8.357	4.405	0.000	19.302
35	36.849	36.821	19.623	8.798	4.405	0.000	19.355
40	35.843	35.820	19.612	9.171	4.405	0.000	19.264
45	33.600	33.585	19.585	9.453	4.405	0.000	19.039
50	30.352	30.348	19.547	9.625	4.405	0.000	18.705
55	26.420	26.427	19.501	9.673	4.405	0.000	18.294
60	22.158	22.174	19.452	9.594	4.405	0.000	17.844
65	17.906	17.926	19.402	9.394	4.405	0.000	17.389

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.004	0.005	0.020	0.130	0.074	0.646	0.013
10	0.008	0.011	0.040	0.253	0.143	0.798	0.023
20	0.015	0.021	0.078	0.479	0.272	1.089	0.042
30	0.022	0.030	0.114	0.679	0.385	1.365	0.061
40	0.029	0.040	0.149	0.853	0.484	1.624	0.079
50	0.036	0.049	0.182	1.001	0.567	1.867	0.095
60	0.043	0.058	0.213	1.122	0.636	2.044	0.110
120	0.075	0.100	0.359	1.261	0.715	2.312	0.176
180	0.073	0.097	0.356	1.338	0.759	2.339	0.175
240	0.078	0.103	0.379	1.413	0.801	2.487	0.186
300	0.083	0.110	0.401	1.485	0.842	2.631	0.197
360	0.087	0.116	0.424	1.555	0.881	2.772	0.207
420	0.092	0.122	0.446	1.622	0.919	2.911	0.218
480	0.097	0.128	0.468	1.687	0.956	3.046	0.229
540	0.101	0.134	0.490	1.749	0.991	3.178	0.240
600	0.106	0.140	0.512	1.809	1.025	3.307	0.250
660	0.111	0.147	0.534	1.867	1.058	3.434	0.261
720	0.115	0.153	0.556	1.922	1.089	3.557	0.271

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.068	0.089	0.275	2.149	0.776	2.949	0.162
10	0.135	0.176	0.545	4.212	1.520	3.559	0.310
20	0.264	0.343	1.065	8.074	2.914	4.728	0.593

30	0.388	0.504	1.561	11.587	4.181	5.828	0.862
40	0.507	0.657	2.033	14.750	5.323	6.859	1.116
50	0.620	0.802	2.481	17.565	6.339	7.821	1.355
60	0.727	0.939	2.904	20.030	7.228	8.714	1.579
120	1.192	1.527	4.660	23.391	8.441	12.332	2.442
180	1.132	1.450	4.461	24.075	8.688	11.941	2.351
240	1.238	1.582	4.861	24.781	8.943	12.948	2.547
300	1.331	1.698	5.213	25.510	9.206	13.878	2.721
360	1.410	1.797	5.515	26.262	9.477	14.733	2.872
420	1.476	1.881	5.770	27.036	9.757	15.510	3.000
480	1.529	1.948	5.976	27.832	10.044	16.212	3.107
540	1.569	1.999	6.133	28.651	10.340	16.837	3.190
600	1.596	2.034	6.242	29.493	10.643	17.386	3.251
660	1.610	2.053	6.303	30.357	10.955	17.858	3.290
720	1.611	2.056	6.315	31.243	11.275	18.254	3.306

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.046	0.062	0.404	0.499	0.325	0.153	0.145
10	0.047	0.064	0.422	0.753	0.490	0.192	0.153
20	0.049	0.068	0.454	1.197	0.779	0.261	0.168
30	0.051	0.071	0.481	1.559	1.015	0.318	0.182
40	0.053	0.074	0.505	1.839	1.198	0.363	0.193
50	0.055	0.077	0.525	2.037	1.326	0.396	0.202
60	0.056	0.079	0.541	2.152	1.401	0.417	0.208
120	0.062	0.087	0.592	2.167	1.411	0.419	0.226
180	0.063	0.088	0.593	2.160	1.406	0.415	0.226
240	0.062	0.087	0.588	2.147	1.398	0.409	0.225
300	0.061	0.086	0.580	2.131	1.388	0.401	0.222
360	0.060	0.084	0.570	2.110	1.374	0.391	0.218
420	0.059	0.082	0.556	2.086	1.358	0.380	0.213
480	0.057	0.079	0.540	2.057	1.339	0.367	0.207
540	0.055	0.076	0.520	2.023	1.318	0.352	0.200
600	0.052	0.073	0.497	1.986	1.293	0.335	0.191
660	0.049	0.069	0.472	1.944	1.266	0.317	0.182
720	0.046	0.065	0.443	1.899	1.236	0.297	0.172

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	12.810	16.853	21.167	9.520	2.467	13.112	15.842
10	14.312	18.843	23.804	18.987	4.921	15.303	17.840
20	17.845	23.517	29.943	37.763	9.788	19.606	22.479
30	22.083	29.119	37.234	56.328	14.600	23.803	27.975
40	27.028	35.648	45.677	74.682	19.358	27.893	34.327
50	32.678	43.104	55.273	92.826	24.060	31.877	41.536
60	39.033	51.487	66.021	110.759	28.709	35.755	49.602
120	91.538	120.627	153.498	188.382	48.829	53.165	114.999
180	103.831	136.841	174.277	222.560	57.687	57.432	130.576
240	116.121	153.048	195.014	254.720	66.023	61.448	146.114
300	128.408	169.247	215.707	284.863	73.836	65.215	161.614
360	140.691	185.439	236.358	312.988	81.126	68.730	177.076
420	152.971	201.623	256.966	339.096	87.894	71.995	192.499
480	165.248	217.799	277.531	363.188	94.138	75.010	207.884
540	177.522	233.968	298.054	385.262	99.859	77.774	223.230

600	189.793	250.130	318.533	405.318	105.058	80.288	238.538
660	202.060	266.283	338.970	423.358	109.734	82.551	253.808
720	214.324	282.430	359.363	439.380	113.887	84.564	269.039

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.001	0.000	0.000	0.000
30	0.000	0.000	0.000	0.001	0.000	0.000	0.000
40	0.000	0.000	0.000	0.001	0.000	0.000	0.000
50	0.000	0.000	0.001	0.001	0.000	0.001	0.000
60	0.000	0.001	0.001	0.001	0.000	0.001	0.001
120	0.001	0.001	0.002	0.002	0.001	0.001	0.001
180	0.001	0.001	0.002	0.003	0.001	0.001	0.001
240	0.001	0.002	0.002	0.003	0.001	0.001	0.002
300	0.001	0.002	0.002	0.003	0.001	0.001	0.002
360	0.001	0.002	0.002	0.004	0.001	0.001	0.002
420	0.002	0.002	0.003	0.004	0.001	0.001	0.002
480	0.002	0.002	0.003	0.004	0.001	0.001	0.002
540	0.002	0.002	0.003	0.004	0.001	0.001	0.002
600	0.002	0.003	0.003	0.005	0.001	0.001	0.002
660	0.002	0.003	0.004	0.005	0.001	0.001	0.003
720	0.002	0.003	0.004	0.005	0.001	0.001	0.003

Pollutant Name: PM10 Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.001	0.000	0.000	0.000	0.000	0.000
30	0.001	0.001	0.001	0.000	0.000	0.000	0.001
40	0.001	0.001	0.001	0.000	0.000	0.000	0.001
50	0.001	0.001	0.001	0.000	0.000	0.000	0.001
60	0.001	0.001	0.001	0.001	0.000	0.000	0.001
120	0.002	0.002	0.002	0.001	0.000	0.000	0.002
180	0.003	0.003	0.002	0.001	0.000	0.000	0.002
240	0.003	0.003	0.002	0.001	0.000	0.000	0.003
300	0.003	0.003	0.002	0.001	0.000	0.000	0.003
360	0.003	0.003	0.002	0.001	0.000	0.000	0.003
420	0.003	0.003	0.002	0.001	0.000	0.000	0.003
480	0.003	0.003	0.002	0.001	0.000	0.000	0.003
540	0.004	0.004	0.002	0.001	0.000	0.000	0.003
600	0.004	0.004	0.002	0.001	0.000	0.000	0.003
660	0.004	0.004	0.003	0.001	0.000	0.000	0.003
720	0.004	0.004	0.003	0.001	0.000	0.000	0.003

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246

Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.014	0.026	0.032	0.018	0.013	0.118	0.022
10	0.025	0.048	0.060	0.033	0.025	0.218	0.040
20	0.035	0.066	0.083	0.046	0.034	0.303	0.056
30	0.043	0.082	0.102	0.057	0.042	0.375	0.069
40	0.049	0.095	0.118	0.066	0.049	0.436	0.080

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 5a: Partial Day Diurnal Loss Emissions (grams/hour)

Pollutant Name: Reactive Org Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
70	0.017	0.044	0.056	0.003	0.001	0.310	0.036

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual

```
Area     : Orange
*******************************************************************************************
     Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  5b:  Multi-Day Diurnal Loss Emissions (grams/hour)

     Pollutant Name: Reactive Org Gases        Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.001    0.003    0.003    0.000    0.000    0.029    0.002
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  6a:  Partial Day Resting Loss Emissions (grams/hour)

     Pollutant Name: Reactive Org Gases        Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.010    0.029    0.040    0.002    0.001    0.108    0.023
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  6b:  Multi-Day Resting Loss Emissions (grams/hour)

     Pollutant Name: Reactive Org Gases        Temperature: ALL   Relative Humidity: ALL
```

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
70	0.001	0.002	0.003	0.000	0.000	0.011	0.002

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 7: Estimated Travel Fractions

Pollutant Name: Temperature: ALL Relative Humidity: ALL

	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
%VMT	0.496	0.274	0.217	0.008	0.002	0.003	1.000
%TRIP	0.488	0.248	0.248	0.011	0.000	0.005	1.000
%VEH	0.503	0.259	0.207	0.014	0.001	0.015	1.000

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 8: Evaporative Running Loss Emissions (grams/minute)

Pollutant Name: Reactive Org Gases Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	0.005	0.126	0.202	0.286	0.261	0.005	0.084
2	0.005	0.065	0.103	0.145	0.131	0.037	0.044
3	0.006	0.047	0.073	0.100	0.088	0.054	0.033
4	0.008	0.039	0.059	0.080	0.068	0.064	0.028

5	0.009	0.034	0.051	0.067	0.055	0.070	0.026
10	0.011	0.025	0.036	0.044	0.031	0.082	0.021
15	0.012	0.023	0.032	0.038	0.025	0.085	0.020
20	0.012	0.022	0.030	0.036	0.022	0.086	0.019
25	0.013	0.022	0.029	0.036	0.021	0.086	0.019
30	0.012	0.022	0.029	0.035	0.021	0.084	0.019
35	0.012	0.022	0.029	0.035	0.020	0.083	0.019
40	0.012	0.021	0.029	0.035	0.020	0.082	0.019
45	0.012	0.021	0.028	0.034	0.020	0.081	0.018
50	0.012	0.021	0.028	0.034	0.020	0.080	0.018
55	0.012	0.021	0.028	0.034	0.019	0.079	0.018
60	0.012	0.021	0.028	0.033	0.019	0.078	0.018

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****

Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Methane Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.165	0.711	0.000	0.000	0.039
5	0.067	0.079	0.082	0.197	0.133	0.303	0.075
10	0.052	0.062	0.065	0.147	0.095	0.260	0.059
15	0.041	0.050	0.052	0.115	0.070	0.232	0.047
20	0.033	0.041	0.042	0.095	0.055	0.214	0.038
25	0.027	0.034	0.036	0.082	0.045	0.203	0.032
30	0.023	0.030	0.031	0.072	0.038	0.197	0.028
35	0.021	0.026	0.028	0.065	0.033	0.196	0.025
40	0.019	0.024	0.026	0.060	0.030	0.199	0.023
45	0.018	0.023	0.024	0.057	0.028	0.207	0.022
50	0.018	0.023	0.024	0.054	0.027	0.221	0.022
55	0.018	0.024	0.024	0.053	0.026	0.242	0.022
60	0.020	0.025	0.026	0.053	0.026	0.276	0.024
65	0.022	0.028	0.029	0.054	0.027	0.326	0.027

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	23.989	175.300	0.000	0.000	6.144
5	4.165	5.508	5.916	51.347	23.447	34.138	5.329
10	3.538	4.730	4.737	34.168	15.355	28.197	4.410
15	3.079	4.143	3.947	24.016	10.645	24.460	3.768

20	2.730	3.687	3.395	17.836	7.811	22.270	3.302
25	2.461	3.328	2.993	14.001	6.066	21.280	2.954
30	2.249	3.040	2.695	11.609	4.984	21.347	2.691
35	2.084	2.811	2.472	10.169	4.334	22.497	2.495
40	1.958	2.631	2.307	9.410	3.986	24.932	2.354
45	1.869	2.496	2.194	9.198	3.879	29.087	2.266
50	1.818	2.406	2.130	9.500	3.993	35.754	2.234
55	1.810	2.363	2.120	10.365	4.347	46.338	2.270
60	1.856	2.380	2.177	11.949	5.007	63.341	2.397
65	1.981	2.477	2.327	14.553	6.099	91.327	2.660

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	4.881	1.148	0.000	0.000	1.051
5	0.310	0.569	1.059	3.194	19.936	1.040	0.599
10	0.272	0.491	0.913	2.821	15.462	1.061	0.516
15	0.244	0.433	0.811	2.616	12.624	1.087	0.458
20	0.223	0.390	0.740	2.578	10.836	1.117	0.417
25	0.208	0.359	0.693	2.624	9.763	1.151	0.390
30	0.198	0.338	0.665	2.677	9.217	1.189	0.372
35	0.191	0.324	0.654	2.737	9.107	1.229	0.363
40	0.188	0.316	0.658	2.805	9.409	1.272	0.361
45	0.188	0.314	0.677	2.879	10.165	1.318	0.367
50	0.190	0.319	0.714	2.961	11.490	1.366	0.381
55	0.196	0.330	0.772	3.050	13.605	1.417	0.404
60	0.205	0.348	0.858	3.146	16.903	1.470	0.440
65	0.218	0.374	0.983	3.250	22.070	1.527	0.492

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	1009.280	3687.191	0.000	0.000	237.227
5	923.717	1220.779	1680.627	2502.787	2501.412	235.607	1170.977
10	698.201	922.529	1242.006	1693.849	2283.958	199.986	878.798
15	547.762	723.571	959.599	1208.199	2155.545	173.162	686.403
20	446.033	589.033	773.925	909.369	2077.356	152.920	557.616
25	376.962	497.683	650.609	729.141	2028.763	137.738	470.896
30	330.654	436.436	569.343	615.396	1998.490	126.574	413.097
35	301.012	397.227	518.034	545.762	1980.273	118.728	376.269
40	284.394	375.239	489.648	507.991	1970.684	113.771	355.707
45	278.853	367.896	480.516	496.057	1968.037	111.498	348.922
50	283.758	374.362	489.505	508.350	1971.880	111.920	355.120
55	299.669	395.372	517.773	547.214	1982.870	115.294	375.042
60	328.443	433.381	569.033	619.626	2002.960	122.190	411.120
65	373.606	493.045	650.406	739.302	2035.989	133.626	467.985

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.011	0.041	0.000	0.000	0.002
5	0.009	0.012	0.017	0.026	0.025	0.003	0.012

10	0.007	0.009	0.013	0.018	0.022	0.003	0.009
15	0.006	0.007	0.010	0.013	0.021	0.002	0.007
20	0.005	0.006	0.008	0.009	0.020	0.002	0.006
25	0.004	0.005	0.007	0.008	0.020	0.002	0.005
30	0.003	0.004	0.006	0.006	0.019	0.002	0.004
35	0.003	0.004	0.005	0.006	0.019	0.002	0.004
40	0.003	0.004	0.005	0.005	0.019	0.002	0.004
45	0.003	0.004	0.005	0.005	0.019	0.002	0.004
50	0.003	0.004	0.005	0.005	0.019	0.002	0.004
55	0.003	0.004	0.005	0.006	0.019	0.002	0.004
60	0.003	0.004	0.006	0.006	0.019	0.002	0.004
65	0.004	0.005	0.007	0.008	0.020	0.003	0.005

Pollutant Name: PM2.5 Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.049	0.000	0.000	0.000	0.011
5	0.016	0.016	0.018	0.064	0.458	0.003	0.017
10	0.010	0.010	0.013	0.044	0.332	0.002	0.012
15	0.007	0.007	0.009	0.030	0.249	0.002	0.008
20	0.005	0.005	0.007	0.022	0.194	0.001	0.006
25	0.004	0.004	0.006	0.019	0.156	0.001	0.005
30	0.003	0.003	0.005	0.016	0.130	0.001	0.004
35	0.003	0.003	0.004	0.015	0.113	0.001	0.003
40	0.003	0.003	0.004	0.014	0.101	0.001	0.003
45	0.002	0.002	0.003	0.015	0.093	0.001	0.003
50	0.002	0.002	0.003	0.016	0.090	0.002	0.003
55	0.002	0.002	0.003	0.018	0.089	0.002	0.003
60	0.003	0.003	0.003	0.020	0.092	0.002	0.003
65	0.003	0.003	0.004	0.023	0.098	0.003	0.004

Pollutant Name: PM2.5 - Tire Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.002	0.002	0.002	0.002	0.002	0.002	0.002
10	0.002	0.002	0.002	0.002	0.002	0.002	0.002
15	0.002	0.002	0.002	0.002	0.002	0.002	0.002
20	0.002	0.002	0.002	0.002	0.002	0.002	0.002
25	0.002	0.002	0.002	0.002	0.002	0.002	0.002
30	0.002	0.002	0.002	0.002	0.002	0.002	0.002
35	0.002	0.002	0.002	0.002	0.002	0.002	0.002
40	0.002	0.002	0.002	0.002	0.002	0.002	0.002
45	0.002	0.002	0.002	0.002	0.002	0.002	0.002
50	0.002	0.002	0.002	0.002	0.002	0.002	0.002
55	0.002	0.002	0.002	0.002	0.002	0.002	0.002
60	0.002	0.002	0.002	0.002	0.002	0.002	0.002
65	0.002	0.002	0.002	0.002	0.002	0.002	0.002

Pollutant Name: PM2.5 - Brake Wear Temperature: 70F Relative Humidity: 40%

Speed
MPH LDA LDT MDT HDT UBUS MCY ALL

0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.016	0.016	0.017	0.019	0.272	0.016	0.017
10	0.016	0.016	0.017	0.019	0.272	0.016	0.017
15	0.016	0.016	0.017	0.019	0.272	0.016	0.017
20	0.016	0.016	0.017	0.019	0.272	0.016	0.017
25	0.016	0.016	0.017	0.019	0.272	0.016	0.017
30	0.016	0.016	0.017	0.019	0.272	0.016	0.017
35	0.016	0.016	0.017	0.019	0.272	0.016	0.017
40	0.016	0.016	0.017	0.019	0.272	0.016	0.017
45	0.016	0.016	0.017	0.019	0.272	0.016	0.017
50	0.016	0.016	0.017	0.019	0.272	0.016	0.017
55	0.016	0.016	0.017	0.019	0.272	0.016	0.017
60	0.016	0.016	0.017	0.019	0.272	0.016	0.017
65	0.016	0.016	0.017	0.019	0.272	0.016	0.017

Pollutant Name: Gasoline - mi/gal Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	9.038	6.870	4.894	3.233	3.203	27.548	7.679
10	11.951	9.084	6.574	4.859	4.815	32.750	10.162
15	15.226	11.572	8.502	6.913	6.851	37.916	12.959
20	18.691	14.204	10.581	9.310	9.227	42.762	15.925
25	22.111	16.802	12.666	11.867	11.764	46.968	18.857
30	25.206	19.153	14.576	14.317	14.195	50.191	21.514
35	27.692	21.042	16.121	16.350	16.214	52.095	23.648
40	29.319	22.279	17.130	17.671	17.528	52.380	25.040
45	29.917	22.734	17.485	18.078	17.936	50.836	25.540
50	29.417	22.356	17.144	17.505	17.371	47.401	25.091
55	27.874	21.184	16.148	16.042	15.923	42.224	23.740
60	25.449	19.342	14.614	13.915	13.815	35.708	21.631
65	22.386	17.016	12.712	11.423	11.344	28.494	18.981

Pollutant Name: Diesel - mi/gal Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	25.639	27.331	19.243	4.247	4.036	0.000	17.937
10	26.997	27.331	19.280	5.159	4.036	0.000	18.094
15	28.003	27.331	19.311	6.291	4.036	0.000	18.225
20	28.714	27.331	19.335	7.480	4.036	0.000	18.329
25	29.178	27.331	19.352	7.994	4.036	0.000	18.392
30	29.425	27.331	19.361	8.486	4.036	0.000	18.431
35	29.473	27.331	19.363	8.934	4.036	0.000	18.448
40	29.327	27.331	19.358	9.313	4.036	0.000	18.442
45	28.976	27.331	19.344	9.600	4.036	0.000	18.413
50	28.394	27.331	19.324	9.774	4.036	0.000	18.356
55	27.543	27.331	19.296	9.823	4.036	0.000	18.270
60	26.370	27.331	19.262	9.743	4.036	0.000	18.152
65	24.814	27.331	19.224	9.540	4.036	0.000	17.997

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                           Table   2:  Starting Emissions (grams/trip)

     Pollutant Name: Methane                   Temperature:  70F  Relative Humidity: ALL
```

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.005	0.005	0.006	0.067	0.013	0.092	0.006
10	0.007	0.007	0.011	0.087	0.019	0.095	0.010
20	0.012	0.013	0.019	0.125	0.031	0.102	0.016
30	0.016	0.018	0.027	0.161	0.042	0.111	0.021
40	0.020	0.022	0.034	0.193	0.051	0.123	0.026
50	0.023	0.026	0.040	0.223	0.060	0.138	0.031
60	0.026	0.029	0.046	0.246	0.066	0.145	0.034
120	0.033	0.038	0.059	0.266	0.073	0.147	0.044
180	0.033	0.038	0.060	0.283	0.077	0.157	0.044
240	0.035	0.040	0.064	0.301	0.082	0.169	0.047
300	0.037	0.042	0.067	0.318	0.086	0.181	0.049
360	0.039	0.044	0.070	0.334	0.091	0.193	0.052
420	0.041	0.047	0.074	0.351	0.095	0.204	0.054
480	0.043	0.049	0.077	0.366	0.099	0.216	0.057
540	0.044	0.051	0.080	0.382	0.103	0.228	0.059
600	0.046	0.053	0.083	0.397	0.107	0.239	0.061
660	0.048	0.055	0.087	0.411	0.110	0.251	0.064
720	0.050	0.057	0.090	0.425	0.114	0.262	0.066

```
     Pollutant Name: Carbon Monoxide           Temperature:  70F  Relative Humidity: ALL
```

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.722	0.793	1.094	12.268	2.401	5.394	0.981
10	1.122	1.353	1.973	17.306	4.012	5.176	1.575
20	1.885	2.419	3.638	26.821	7.036	4.832	2.703
30	2.598	3.411	5.178	35.586	9.799	4.607	3.752
40	3.259	4.328	6.592	43.602	12.299	4.503	4.721
50	3.871	5.172	7.880	50.868	14.537	4.519	5.610
60	4.431	5.942	9.043	57.385	16.513	4.655	6.420
120	6.422	8.491	11.992	68.726	19.358	7.452	8.867
180	6.087	8.062	11.818	73.058	20.163	9.219	8.613
240	6.513	8.584	12.478	77.194	20.960	11.086	9.164
300	6.901	9.061	13.090	81.132	21.748	12.748	9.672
360	7.252	9.494	13.656	84.873	22.528	14.206	10.136
420	7.566	9.882	14.175	88.417	23.299	15.460	10.555
480	7.843	10.226	14.646	91.764	24.062	16.509	10.931
540	8.082	10.525	15.071	94.913	24.816	17.355	11.263
600	8.285	10.780	15.449	97.865	25.562	17.997	11.550
660	8.450	10.990	15.780	100.621	26.299	18.434	11.794
720	8.578	11.155	16.064	103.179	27.028	18.668	11.994

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.199	0.348	0.631	1.475	0.528	0.217	0.347
10	0.230	0.394	0.747	2.187	0.792	0.243	0.408
20	0.285	0.474	0.950	3.437	1.255	0.290	0.516
30	0.331	0.541	1.118	4.456	1.632	0.330	0.605
40	0.367	0.594	1.250	5.244	1.924	0.363	0.675
50	0.393	0.634	1.347	5.802	2.130	0.388	0.727
60	0.411	0.660	1.408	6.129	2.251	0.407	0.760
120	0.429	0.697	1.469	6.174	2.267	0.411	0.792
180	0.431	0.699	1.469	6.149	2.258	0.402	0.793
240	0.427	0.694	1.459	6.110	2.245	0.391	0.787
300	0.422	0.686	1.444	6.059	2.228	0.378	0.779
360	0.415	0.675	1.424	5.995	2.206	0.361	0.768
420	0.407	0.662	1.400	5.918	2.179	0.342	0.754
480	0.397	0.646	1.370	5.828	2.148	0.320	0.737
540	0.386	0.627	1.336	5.726	2.112	0.295	0.717
600	0.373	0.606	1.296	5.611	2.072	0.268	0.695
660	0.358	0.581	1.252	5.483	2.028	0.237	0.670
720	0.342	0.554	1.203	5.342	1.979	0.204	0.642

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	11.773	14.843	17.497	21.923	3.919	26.314	14.004
10	13.985	17.678	21.534	31.787	6.418	28.943	16.865
20	18.775	23.846	30.171	51.303	11.369	34.064	23.018
30	24.054	30.676	39.558	70.536	16.258	39.000	29.748
40	29.822	38.169	49.696	89.487	21.083	43.754	37.054
50	36.078	46.324	60.584	108.154	25.845	48.324	44.936
60	42.823	55.142	72.223	126.539	30.544	52.711	53.394
120	90.495	118.042	151.151	206.803	50.964	73.054	111.933
180	103.130	134.786	173.382	238.403	59.517	74.637	127.854
240	115.553	151.257	195.126	268.140	67.566	76.129	143.467
300	127.761	167.452	216.382	296.013	75.109	77.530	158.772
360	139.756	183.372	237.149	322.022	82.148	78.841	173.769
420	151.537	199.018	257.429	346.168	88.683	80.062	188.458
480	163.105	214.389	277.221	368.450	94.713	81.193	202.839
540	174.458	229.485	296.525	388.869	100.238	82.233	216.913
600	185.599	244.306	315.341	407.424	105.258	83.182	230.679
660	196.525	258.852	333.669	424.115	109.774	84.042	244.137
720	207.238	273.124	351.510	438.943	113.785	84.810	257.287

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.001	0.000	0.000	0.000
20	0.000	0.000	0.000	0.001	0.000	0.000	0.000
30	0.000	0.000	0.000	0.001	0.000	0.001	0.000

40	0.000	0.000	0.001	0.002	0.000	0.001	0.000
50	0.000	0.001	0.001	0.002	0.001	0.001	0.001
60	0.001	0.001	0.001	0.002	0.001	0.001	0.001
120	0.001	0.001	0.002	0.003	0.001	0.001	0.001
180	0.001	0.002	0.002	0.004	0.001	0.001	0.001
240	0.001	0.002	0.002	0.004	0.001	0.001	0.002
300	0.001	0.002	0.002	0.004	0.001	0.001	0.002
360	0.002	0.002	0.003	0.005	0.001	0.001	0.002
420	0.002	0.002	0.003	0.005	0.001	0.001	0.002
480	0.002	0.002	0.003	0.005	0.001	0.001	0.002
540	0.002	0.003	0.003	0.006	0.001	0.001	0.002
600	0.002	0.003	0.003	0.006	0.002	0.001	0.003
660	0.002	0.003	0.004	0.006	0.002	0.001	0.003
720	0.002	0.003	0.004	0.006	0.002	0.001	0.003

Pollutant Name: PM2.5 Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.001	0.001	0.001	0.004	0.000	0.004	0.001
10	0.001	0.001	0.001	0.004	0.000	0.003	0.001
20	0.002	0.002	0.002	0.005	0.001	0.003	0.002
30	0.003	0.002	0.002	0.006	0.001	0.002	0.002
40	0.003	0.003	0.003	0.006	0.001	0.002	0.003
50	0.004	0.004	0.003	0.007	0.001	0.001	0.004
60	0.004	0.004	0.004	0.008	0.001	0.001	0.004
120	0.006	0.006	0.005	0.012	0.001	0.003	0.006
180	0.007	0.007	0.006	0.013	0.002	0.004	0.007
240	0.007	0.007	0.006	0.014	0.002	0.005	0.007
300	0.008	0.008	0.006	0.016	0.002	0.006	0.007
360	0.008	0.008	0.007	0.017	0.002	0.007	0.008
420	0.009	0.008	0.007	0.018	0.002	0.008	0.008
480	0.009	0.009	0.007	0.018	0.002	0.009	0.009
540	0.009	0.009	0.007	0.019	0.002	0.009	0.009
600	0.009	0.009	0.008	0.020	0.002	0.009	0.009
660	0.010	0.009	0.008	0.020	0.002	0.010	0.009
720	0.010	0.010	0.008	0.021	0.002	0.010	0.009

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****

Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Methane Temperature: 70F Relative Humidity: ALL

Time

min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****

Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 5a: Partial Day Diurnal Loss Emissions (grams/hour)

Pollutant Name: Methane Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****

Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 5b: Multi-Day Diurnal Loss Emissions (grams/hour)

Pollutant Name: Methane Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  6a:  Partial Day Resting Loss Emissions (grams/hour)

     Pollutant Name: Methane                   Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.000    0.000    0.000    0.000    0.000    0.000    0.000
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  6b:  Multi-Day Resting Loss Emissions (grams/hour)

     Pollutant Name: Methane                   Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.000    0.000    0.000    0.000    0.000    0.000    0.000
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
```

Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****

Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 7: Estimated Travel Fractions

Pollutant Name: Temperature: ALL Relative Humidity: ALL

	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
%VMT	0.518	0.255	0.214	0.006	0.002	0.004	1.000
%TRIP	0.519	0.235	0.228	0.011	0.000	0.007	1.000
%VEH	0.538	0.243	0.187	0.010	0.001	0.022	1.000

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2009 -- All model years in the range 1965 to 2009 selected
Season : Annual
Area : Orange
****

Year: 2009 -- Model Years 1965 to 2009 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 8: Evaporative Running Loss Emissions (grams/minute)

Pollutant Name: Methane Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table   1:  Running Exhaust Emissions (grams/mile; grams/idle-hour)

     Pollutant Name: Methane                   Temperature:  70F  Relative Humidity:  40%

     Speed
      MPH       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

        0      0.000    0.000    0.173    0.682    0.000    0.000    0.040
        5      0.039    0.050    0.059    0.078    0.102    0.290    0.048
       10      0.027    0.036    0.045    0.057    0.072    0.246    0.034
       15      0.019    0.026    0.034    0.043    0.053    0.218    0.025
       20      0.014    0.020    0.027    0.034    0.041    0.199    0.019
       25      0.011    0.016    0.022    0.029    0.033    0.188    0.015
       30      0.009    0.013    0.018    0.025    0.027    0.181    0.013
       35      0.008    0.011    0.016    0.022    0.024    0.179    0.011
       40      0.007    0.010    0.015    0.020    0.021    0.181    0.010
       45      0.006    0.010    0.014    0.019    0.020    0.187    0.010
       50      0.006    0.010    0.014    0.018    0.019    0.198    0.010
       55      0.007    0.010    0.014    0.017    0.019    0.215    0.010
       60      0.007    0.011    0.015    0.017    0.019    0.242    0.011
       65      0.008    0.012    0.017    0.018    0.020    0.284    0.013



     Pollutant Name: Carbon Monoxide           Temperature:  70F  Relative Humidity:  40%

     Speed
      MPH       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

        0      0.000    0.000   24.983  172.583    0.000    0.000    6.221
        5      1.209    1.938    2.973   12.637   15.057   23.076    1.969
       10      1.087    1.734    2.475    8.407    9.819   19.613    1.695
       15      0.985    1.562    2.125    5.904    6.781   17.305    1.491
       20      0.897    1.418    1.867    4.384    4.959   15.817    1.334
       25      0.821    1.294    1.670    3.444    3.840   14.971    1.209
       30      0.756    1.189    1.514    2.858    3.147   14.689    1.109
       35      0.698    1.097    1.390    2.505    2.730   14.980    1.029
       40      0.649    1.019    1.292    2.319    2.507   15.943    0.965
       45      0.605    0.951    1.214    2.266    2.436   17.789    0.918
       50      0.568    0.894    1.156    2.340    2.505   20.912    0.888
       55      0.537    0.846    1.119    2.552    2.726   26.011    0.878
       60      0.512    0.808    1.105    2.940    3.138   34.331    0.896
       65      0.493    0.779    1.121    3.578    3.823   48.149    0.956



     Pollutant Name: Oxides of Nitrogen        Temperature:  70F  Relative Humidity:  40%
```

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	5.089	1.050	0.000	0.000	1.049
5	0.105	0.191	0.535	1.569	15.175	1.153	0.263
10	0.092	0.165	0.461	1.303	11.773	1.109	0.225
15	0.082	0.146	0.409	1.140	9.616	1.080	0.198
20	0.074	0.131	0.373	1.079	8.257	1.064	0.179
25	0.068	0.120	0.349	1.076	7.441	1.060	0.166
30	0.064	0.112	0.334	1.078	7.027	1.065	0.158
35	0.061	0.106	0.328	1.085	6.944	1.079	0.154
40	0.059	0.103	0.329	1.098	7.175	1.102	0.153
45	0.058	0.102	0.339	1.117	7.750	1.132	0.156
50	0.058	0.102	0.357	1.141	8.758	1.172	0.162
55	0.059	0.105	0.387	1.170	10.367	1.221	0.174
60	0.061	0.110	0.430	1.205	12.876	1.281	0.191
65	0.064	0.117	0.492	1.246	16.807	1.353	0.217

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	1106.747	3774.652	0.000	0.000	250.804
5	928.732	1223.134	1703.437	2505.206	2435.950	263.561	1173.306
10	701.933	924.296	1255.434	1691.459	2218.497	220.050	879.835
15	550.636	724.946	967.929	1204.075	2090.084	189.140	686.772
20	448.328	590.142	779.409	904.624	2011.894	167.322	557.635
25	378.870	498.614	654.474	723.247	1963.301	152.353	470.735
30	332.311	437.249	572.284	608.989	1933.028	142.843	412.855
35	302.524	397.969	520.466	539.212	1914.811	138.001	376.006
40	285.846	375.946	491.840	501.522	1905.222	137.521	355.467
45	280.327	368.601	482.670	489.819	1902.575	141.538	348.744
50	285.335	375.097	491.808	502.476	1906.418	150.676	355.047
55	301.444	396.175	520.446	541.865	1917.408	166.178	375.134
60	330.537	434.297	572.384	615.045	1937.498	190.184	411.466
65	376.182	494.132	654.925	735.897	1970.528	226.208	468.723

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.012	0.041	0.000	0.000	0.003
5	0.009	0.012	0.017	0.025	0.024	0.003	0.012
10	0.007	0.009	0.013	0.017	0.022	0.003	0.009
15	0.006	0.007	0.010	0.012	0.020	0.002	0.007
20	0.005	0.006	0.008	0.009	0.019	0.002	0.006
25	0.004	0.005	0.007	0.007	0.019	0.002	0.005
30	0.003	0.004	0.006	0.006	0.019	0.002	0.004
35	0.003	0.004	0.005	0.005	0.018	0.002	0.004
40	0.003	0.004	0.005	0.005	0.018	0.002	0.004
45	0.003	0.004	0.005	0.005	0.018	0.002	0.004
50	0.003	0.004	0.005	0.005	0.018	0.002	0.004
55	0.003	0.004	0.005	0.005	0.018	0.002	0.004
60	0.003	0.004	0.006	0.006	0.019	0.003	0.004
65	0.004	0.005	0.007	0.007	0.019	0.003	0.005

Pollutant Name: PM2.5 Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.048	0.000	0.000	0.000	0.010
5	0.008	0.009	0.012	0.028	0.365	0.001	0.010
10	0.005	0.006	0.009	0.019	0.264	0.000	0.007
15	0.004	0.004	0.006	0.014	0.199	0.000	0.005
20	0.003	0.003	0.005	0.010	0.154	0.000	0.004
25	0.002	0.002	0.004	0.009	0.124	0.000	0.003
30	0.002	0.002	0.003	0.008	0.104	0.000	0.002
35	0.001	0.002	0.003	0.007	0.090	0.000	0.002
40	0.001	0.001	0.003	0.008	0.080	0.000	0.002
45	0.001	0.001	0.002	0.008	0.074	0.000	0.002
50	0.001	0.001	0.002	0.009	0.071	0.000	0.002
55	0.001	0.001	0.002	0.010	0.071	0.000	0.002
60	0.001	0.001	0.002	0.012	0.073	0.000	0.002
65	0.001	0.002	0.002	0.014	0.078	0.001	0.002

Pollutant Name: PM2.5 - Tire Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.002	0.002	0.002	0.002	0.002	0.002	0.002
10	0.002	0.002	0.002	0.002	0.002	0.002	0.002
15	0.002	0.002	0.002	0.002	0.002	0.002	0.002
20	0.002	0.002	0.002	0.002	0.002	0.002	0.002
25	0.002	0.002	0.002	0.002	0.002	0.002	0.002
30	0.002	0.002	0.002	0.002	0.002	0.002	0.002
35	0.002	0.002	0.002	0.002	0.002	0.002	0.002
40	0.002	0.002	0.002	0.002	0.002	0.002	0.002
45	0.002	0.002	0.002	0.002	0.002	0.002	0.002
50	0.002	0.002	0.002	0.002	0.002	0.002	0.002
55	0.002	0.002	0.002	0.002	0.002	0.002	0.002
60	0.002	0.002	0.002	0.002	0.002	0.002	0.002
65	0.002	0.002	0.002	0.002	0.002	0.002	0.002

Pollutant Name: PM2.5 - Brake Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.016	0.016	0.017	0.018	0.272	0.016	0.017
10	0.016	0.016	0.017	0.018	0.272	0.016	0.017
15	0.016	0.016	0.017	0.018	0.272	0.016	0.017
20	0.016	0.016	0.017	0.018	0.272	0.016	0.017
25	0.016	0.016	0.017	0.018	0.272	0.016	0.017
30	0.016	0.016	0.017	0.018	0.272	0.016	0.017
35	0.016	0.016	0.017	0.018	0.272	0.016	0.017
40	0.016	0.016	0.017	0.018	0.272	0.016	0.017
45	0.016	0.016	0.017	0.018	0.272	0.016	0.017
50	0.016	0.016	0.017	0.018	0.272	0.016	0.017
55	0.016	0.016	0.017	0.018	0.272	0.016	0.017
60	0.016	0.016	0.017	0.018	0.272	0.016	0.017
65	0.016	0.016	0.017	0.018	0.272	0.016	0.017

Pollutant Name: Gasoline - mi/gal Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	9.022	6.886	4.837	3.317	3.255	26.716	7.698
10	11.936	9.109	6.512	4.986	4.893	32.070	10.193
15	15.213	11.609	8.440	7.093	6.961	37.314	13.007
20	18.683	14.256	10.523	9.551	9.375	42.099	15.991
25	22.108	16.869	12.617	12.172	11.951	46.063	18.942
30	25.208	19.233	14.538	14.684	14.421	48.860	21.614
35	27.696	21.132	16.093	16.765	16.469	50.200	23.758
40	29.322	22.373	17.108	18.117	17.803	49.887	25.152
45	29.913	22.824	17.462	18.530	18.215	47.851	25.646
50	29.404	22.437	17.114	17.939	17.639	44.178	25.184
55	27.850	21.253	16.105	16.437	16.167	39.124	23.816
60	25.416	19.397	14.557	14.255	14.025	33.109	21.690
65	22.348	17.057	12.643	11.701	11.515	26.675	19.023

Pollutant Name: Diesel - mi/gal Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	20.588	20.836	19.376	4.223	4.184	0.000	17.708
10	24.639	24.733	19.422	5.130	4.184	0.000	18.219
15	28.432	28.325	19.465	6.255	4.184	0.000	18.703
20	31.675	31.353	19.502	7.438	4.184	0.000	19.121
25	34.105	33.597	19.529	7.950	4.184	0.000	19.425
30	35.525	34.898	19.545	8.439	4.184	0.000	19.607
35	35.816	35.164	19.548	8.884	4.184	0.000	19.653
40	34.955	34.377	19.539	9.261	4.184	0.000	19.559
45	33.013	32.591	19.517	9.546	4.184	0.000	19.333
50	30.150	29.934	19.484	9.720	4.184	0.000	18.993
55	26.598	26.595	19.444	9.769	4.184	0.000	18.567
60	22.639	22.817	19.399	9.689	4.184	0.000	18.088
65	18.569	18.870	19.352	9.487	4.184	0.000	17.592

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Methane Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.001	0.003	0.014	0.007	0.050	0.002
10	0.001	0.002	0.005	0.026	0.013	0.058	0.003
20	0.002	0.003	0.010	0.049	0.024	0.072	0.005
30	0.003	0.005	0.015	0.069	0.034	0.087	0.007
40	0.003	0.006	0.019	0.086	0.042	0.102	0.009
50	0.004	0.007	0.023	0.101	0.049	0.116	0.011
60	0.005	0.009	0.026	0.113	0.055	0.126	0.013
120	0.007	0.013	0.037	0.126	0.061	0.138	0.018
180	0.007	0.012	0.038	0.134	0.065	0.142	0.018
240	0.008	0.013	0.040	0.142	0.069	0.151	0.019
300	0.008	0.014	0.042	0.149	0.072	0.160	0.020
360	0.008	0.015	0.044	0.156	0.076	0.170	0.021
420	0.009	0.015	0.047	0.163	0.079	0.178	0.022
480	0.009	0.016	0.049	0.169	0.082	0.187	0.023
540	0.010	0.017	0.051	0.175	0.085	0.196	0.024
600	0.010	0.018	0.053	0.181	0.088	0.204	0.025
660	0.011	0.018	0.055	0.187	0.091	0.213	0.026
720	0.011	0.019	0.057	0.193	0.094	0.221	0.027

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.120	0.215	0.535	3.744	1.494	3.330	0.303
10	0.236	0.423	1.035	7.248	2.878	3.802	0.572
20	0.458	0.820	1.989	13.812	5.472	4.718	1.084
30	0.668	1.193	2.881	19.784	7.832	5.596	1.562
40	0.866	1.541	3.713	25.163	9.959	6.436	2.007
50	1.052	1.865	4.482	29.951	11.851	7.238	2.419
60	1.225	2.164	5.191	34.146	13.510	8.002	2.798
120	1.895	3.248	7.492	39.680	15.628	11.443	4.022
180	1.798	3.073	7.268	40.870	16.102	11.419	3.892
240	1.943	3.297	7.778	42.095	16.589	12.560	4.161
300	2.073	3.499	8.237	43.355	17.089	13.604	4.404
360	2.185	3.676	8.645	44.650	17.602	14.551	4.620
420	2.282	3.830	9.002	45.979	18.128	15.402	4.811
480	2.361	3.961	9.308	47.343	18.667	16.156	4.975
540	2.425	4.069	9.563	48.742	19.220	16.813	5.113
600	2.471	4.153	9.768	50.176	19.786	17.373	5.225
660	2.502	4.214	9.921	51.645	20.364	17.837	5.310
720	2.515	4.251	10.024	53.148	20.957	18.204	5.370

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.067	0.131	0.544	0.846	0.483	0.164	0.203
10	0.070	0.141	0.599	1.274	0.727	0.200	0.226
20	0.077	0.160	0.697	2.026	1.156	0.266	0.266
30	0.083	0.176	0.779	2.639	1.506	0.320	0.300
40	0.088	0.189	0.845	3.112	1.776	0.362	0.326
50	0.092	0.199	0.896	3.446	1.967	0.394	0.347
60	0.095	0.206	0.930	3.642	2.078	0.415	0.360

120	0.103	0.221	0.992	3.668	2.093	0.417	0.383
180	0.104	0.222	0.993	3.654	2.085	0.413	0.383
240	0.103	0.221	0.985	3.634	2.074	0.406	0.381
300	0.102	0.218	0.974	3.606	2.058	0.396	0.376
360	0.100	0.214	0.959	3.571	2.038	0.386	0.371
420	0.098	0.210	0.939	3.529	2.014	0.373	0.363
480	0.095	0.204	0.916	3.480	1.986	0.358	0.354
540	0.092	0.198	0.888	3.424	1.954	0.341	0.344
600	0.088	0.190	0.856	3.360	1.917	0.323	0.332
660	0.084	0.182	0.820	3.290	1.877	0.303	0.318
720	0.079	0.172	0.780	3.212	1.833	0.280	0.303

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	12.600	16.264	19.694	9.736	2.569	15.464	15.111
10	14.159	18.410	22.827	19.219	5.026	17.741	17.273
20	17.792	23.360	29.850	38.026	9.899	22.204	22.188
30	22.111	29.183	37.881	56.620	14.716	26.547	27.893
40	27.116	35.881	46.921	75.003	19.478	30.770	34.388
50	32.808	43.453	56.970	93.173	24.185	34.873	41.674
60	39.185	51.899	68.027	111.132	28.837	38.855	49.749
120	91.160	119.642	152.363	188.875	48.978	56.848	113.079
180	103.486	135.962	173.683	223.043	57.815	60.665	128.642
240	115.788	152.220	194.799	255.194	66.131	64.259	144.106
300	128.068	168.416	215.710	285.329	73.925	67.629	159.471
360	140.324	184.550	236.418	313.447	81.198	70.776	174.738
420	152.557	200.621	256.921	339.548	87.949	73.699	189.906
480	164.767	216.631	277.220	363.633	94.178	76.398	204.976
540	176.954	232.579	297.314	385.701	99.886	78.873	219.946
600	189.118	248.464	317.204	405.752	105.072	81.125	234.818
660	201.259	264.288	336.890	423.787	109.737	83.154	249.592
720	213.376	280.049	356.372	439.805	113.880	84.958	264.266

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.001	0.000	0.000	0.000
30	0.000	0.000	0.000	0.001	0.000	0.000	0.000
40	0.000	0.000	0.001	0.001	0.000	0.000	0.000
50	0.000	0.000	0.001	0.001	0.000	0.001	0.000
60	0.000	0.001	0.001	0.002	0.001	0.001	0.001
120	0.001	0.001	0.002	0.003	0.001	0.001	0.001
180	0.001	0.001	0.002	0.003	0.001	0.001	0.001
240	0.001	0.002	0.002	0.003	0.001	0.001	0.002
300	0.001	0.002	0.002	0.004	0.001	0.001	0.002
360	0.001	0.002	0.003	0.004	0.001	0.001	0.002
420	0.002	0.002	0.003	0.004	0.001	0.001	0.002
480	0.002	0.002	0.003	0.005	0.001	0.001	0.002
540	0.002	0.002	0.003	0.005	0.001	0.001	0.002
600	0.002	0.003	0.003	0.005	0.001	0.001	0.002
660	0.002	0.003	0.004	0.005	0.001	0.001	0.003
720	0.002	0.003	0.004	0.005	0.002	0.001	0.003

Pollutant Name: PM2.5 Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.001	0.000	0.000	0.000
20	0.000	0.001	0.001	0.001	0.000	0.000	0.001
30	0.001	0.001	0.001	0.002	0.000	0.000	0.001
40	0.001	0.001	0.001	0.002	0.000	0.000	0.001
50	0.001	0.001	0.002	0.002	0.001	0.000	0.001
60	0.001	0.002	0.002	0.003	0.001	0.000	0.002
120	0.002	0.003	0.003	0.004	0.001	0.000	0.002
180	0.002	0.003	0.003	0.004	0.001	0.001	0.003
240	0.002	0.003	0.003	0.004	0.001	0.001	0.003
300	0.003	0.003	0.003	0.004	0.001	0.001	0.003
360	0.003	0.003	0.003	0.004	0.001	0.001	0.003
420	0.003	0.004	0.004	0.004	0.001	0.001	0.003
480	0.003	0.004	0.004	0.005	0.001	0.001	0.003
540	0.003	0.004	0.004	0.005	0.001	0.001	0.003
600	0.003	0.004	0.004	0.005	0.001	0.001	0.003
660	0.003	0.004	0.004	0.005	0.001	0.001	0.003
720	0.003	0.004	0.004	0.005	0.001	0.001	0.004

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Methane Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

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Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  5a:  Partial Day Diurnal Loss Emissions (grams/hour)

     Pollutant Name: Methane                   Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.000    0.000    0.000    0.000    0.000    0.000    0.000
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```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  5b:  Multi-Day Diurnal Loss Emissions (grams/hour)

     Pollutant Name: Methane                   Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.000    0.000    0.000    0.000    0.000    0.000    0.000
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
```

```
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                             Table  6a:  Partial Day Resting Loss Emissions (grams/hour)

     Pollutant Name: Methane                   Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.000    0.000    0.000    0.000    0.000    0.000    0.000
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                             Table  6b:  Multi-Day Resting Loss Emissions (grams/hour)

     Pollutant Name: Methane                   Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.000    0.000    0.000    0.000    0.000    0.000    0.000
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                             Table   7:  Estimated Travel Fractions

     Pollutant Name:                           Temperature: ALL   Relative Humidity: ALL


                LDA      LDT      MDT      HDT      UBUS     MCY      ALL
```

%VMT	0.524	0.257	0.205	0.006	0.002	0.005	1.000
%TRIP	0.512	0.234	0.235	0.011	0.000	0.007	1.000
%VEH	0.529	0.245	0.194	0.010	0.001	0.022	1.000

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : Orange
****

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 8: Evaporative Running Loss Emissions (grams/minute)

Pollutant Name: Methane Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Methane Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.167	0.528	0.000	0.000	0.040
5	0.037	0.044	0.044	0.051	0.051	0.290	0.041
10	0.025	0.030	0.032	0.035	0.036	0.245	0.028
15	0.017	0.021	0.022	0.025	0.026	0.216	0.020
20	0.012	0.015	0.017	0.019	0.020	0.198	0.015
25	0.009	0.011	0.013	0.015	0.016	0.186	0.011
30	0.007	0.009	0.011	0.013	0.013	0.180	0.009
35	0.006	0.008	0.009	0.011	0.011	0.177	0.008
40	0.006	0.007	0.008	0.010	0.010	0.179	0.007
45	0.005	0.007	0.008	0.009	0.009	0.185	0.007
50	0.005	0.006	0.007	0.008	0.009	0.196	0.007
55	0.005	0.007	0.008	0.008	0.009	0.213	0.007
60	0.006	0.007	0.008	0.008	0.009	0.239	0.008
65	0.007	0.009	0.009	0.008	0.009	0.280	0.009

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	24.227	135.734	0.000	0.000	6.357
5	0.918	1.110	1.439	6.083	6.627	21.980	1.205
10	0.837	1.010	1.245	4.039	4.269	18.771	1.063
15	0.765	0.923	1.099	2.829	2.916	16.608	0.952
20	0.701	0.845	0.984	2.098	2.111	15.190	0.862
25	0.644	0.777	0.891	1.652	1.620	14.354	0.787
30	0.594	0.716	0.813	1.374	1.318	14.033	0.725
35	0.549	0.662	0.748	1.207	1.136	14.233	0.672
40	0.509	0.613	0.693	1.119	1.037	15.039	0.629
45	0.473	0.570	0.646	1.095	1.004	16.642	0.594
50	0.441	0.531	0.606	1.131	1.029	19.394	0.567
55	0.412	0.497	0.573	1.233	1.117	23.918	0.552
60	0.386	0.466	0.547	1.419	1.284	31.331	0.550
65	0.363	0.438	0.529	1.724	1.564	43.670	0.569

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	5.079	0.874	0.000	0.000	1.109
5	0.083	0.103	0.225	1.110	9.100	1.169	0.153
10	0.073	0.090	0.194	0.899	7.031	1.117	0.131
15	0.065	0.080	0.173	0.755	5.716	1.082	0.115
20	0.059	0.072	0.158	0.680	4.887	1.061	0.104
25	0.054	0.066	0.147	0.655	4.387	1.052	0.096
30	0.050	0.062	0.141	0.636	4.130	1.054	0.091
35	0.048	0.059	0.138	0.623	4.074	1.065	0.088
40	0.046	0.056	0.138	0.616	4.209	1.085	0.087
45	0.045	0.055	0.142	0.615	4.553	1.115	0.088
50	0.045	0.055	0.148	0.620	5.159	1.153	0.091
55	0.046	0.056	0.159	0.631	6.130	1.202	0.096

60	0.047	0.058	0.176	0.649	7.646	1.263	0.105
65	0.049	0.060	0.200	0.672	10.025	1.337	0.119

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	1098.432	3018.000	0.000	0.000	262.765
5	929.357	1224.269	1706.774	2504.384	2346.548	266.365	1192.893
10	702.382	925.148	1258.243	1699.878	2129.095	222.036	894.020
15	550.967	725.608	970.287	1215.470	2000.682	190.709	697.544
20	448.580	590.677	781.411	916.857	1922.493	168.739	566.207
25	379.068	499.062	656.209	737.714	1873.900	153.807	477.897
30	332.473	437.640	573.826	624.391	1843.626	144.484	419.096
35	302.664	398.323	521.878	554.805	1825.409	139.973	381.667
40	285.976	376.280	493.176	516.866	1815.821	139.980	360.805
45	280.455	368.931	483.979	504.625	1813.173	144.678	353.970
50	285.471	375.435	493.136	516.493	1817.017	154.755	360.361
55	301.598	396.537	521.840	554.784	1828.007	171.562	380.747
60	330.722	434.700	573.896	626.385	1848.097	197.406	417.631
65	376.415	494.599	656.613	744.835	1881.126	236.072	475.781

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.011	0.033	0.000	0.000	0.003
5	0.009	0.012	0.017	0.025	0.023	0.003	0.012
10	0.007	0.009	0.013	0.017	0.021	0.003	0.009
15	0.006	0.007	0.010	0.012	0.019	0.002	0.007
20	0.005	0.006	0.008	0.009	0.018	0.002	0.006
25	0.004	0.005	0.007	0.007	0.018	0.002	0.005
30	0.003	0.004	0.006	0.006	0.018	0.002	0.004
35	0.003	0.004	0.005	0.006	0.018	0.002	0.004
40	0.003	0.004	0.005	0.005	0.017	0.002	0.004
45	0.003	0.004	0.005	0.005	0.017	0.002	0.004
50	0.003	0.004	0.005	0.005	0.017	0.002	0.004
55	0.003	0.004	0.005	0.006	0.018	0.002	0.004
60	0.003	0.004	0.006	0.006	0.018	0.003	0.004
65	0.004	0.005	0.007	0.008	0.018	0.003	0.005

Pollutant Name: PM2.5 Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.047	0.000	0.000	0.000	0.010
5	0.010	0.010	0.011	0.007	0.249	0.000	0.011
10	0.007	0.006	0.007	0.006	0.180	0.000	0.007
15	0.004	0.004	0.005	0.004	0.136	0.000	0.005
20	0.003	0.003	0.004	0.003	0.105	0.000	0.004
25	0.002	0.002	0.003	0.003	0.085	0.000	0.003
30	0.002	0.002	0.003	0.003	0.071	0.000	0.002
35	0.002	0.002	0.002	0.003	0.061	0.000	0.002
40	0.001	0.001	0.002	0.003	0.055	0.000	0.002
45	0.001	0.001	0.002	0.004	0.051	0.000	0.002

50	0.001	0.001	0.002	0.004	0.049	0.000	0.002
55	0.001	0.001	0.002	0.005	0.048	0.000	0.002
60	0.002	0.002	0.002	0.005	0.050	0.000	0.002
65	0.002	0.002	0.002	0.006	0.053	0.000	0.002

Pollutant Name: PM2.5 - Tire Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.002	0.002	0.002	0.002	0.002	0.002	0.002
10	0.002	0.002	0.002	0.002	0.002	0.002	0.002
15	0.002	0.002	0.002	0.002	0.002	0.002	0.002
20	0.002	0.002	0.002	0.002	0.002	0.002	0.002
25	0.002	0.002	0.002	0.002	0.002	0.002	0.002
30	0.002	0.002	0.002	0.002	0.002	0.002	0.002
35	0.002	0.002	0.002	0.002	0.002	0.002	0.002
40	0.002	0.002	0.002	0.002	0.002	0.002	0.002
45	0.002	0.002	0.002	0.002	0.002	0.002	0.002
50	0.002	0.002	0.002	0.002	0.002	0.002	0.002
55	0.002	0.002	0.002	0.002	0.002	0.002	0.002
60	0.002	0.002	0.002	0.002	0.002	0.002	0.002
65	0.002	0.002	0.002	0.002	0.002	0.002	0.002

Pollutant Name: PM2.5 - Brake Wear Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.016	0.016	0.017	0.019	0.272	0.016	0.017
10	0.016	0.016	0.017	0.019	0.272	0.016	0.017
15	0.016	0.016	0.017	0.019	0.272	0.016	0.017
20	0.016	0.016	0.017	0.019	0.272	0.016	0.017
25	0.016	0.016	0.017	0.019	0.272	0.016	0.017
30	0.016	0.016	0.017	0.019	0.272	0.016	0.017
35	0.016	0.016	0.017	0.019	0.272	0.016	0.017
40	0.016	0.016	0.017	0.019	0.272	0.016	0.017
45	0.016	0.016	0.017	0.019	0.272	0.016	0.017
50	0.016	0.016	0.017	0.019	0.272	0.016	0.017
55	0.016	0.016	0.017	0.019	0.272	0.016	0.017
60	0.016	0.016	0.017	0.019	0.272	0.016	0.017
65	0.016	0.016	0.017	0.019	0.272	0.016	0.017

Pollutant Name: Gasoline - mi/gal Temperature: 70F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	9.022	6.887	4.832	3.333	3.321	26.631	7.571
10	11.937	9.111	6.506	5.010	4.992	32.001	10.034
15	15.215	11.614	8.432	7.127	7.102	37.253	12.814
20	18.687	14.264	10.514	9.597	9.563	42.032	15.766
25	22.114	16.881	12.606	12.231	12.189	45.970	18.686
30	25.215	19.248	14.525	14.753	14.703	48.721	21.333
35	27.704	21.148	16.078	16.844	16.788	50.001	23.457

40	29.330	22.389	17.091	18.201	18.142	49.623	24.841
45	29.920	22.840	17.444	18.616	18.556	47.534	25.333
50	29.410	22.450	17.094	18.021	17.964	43.834	24.879
55	27.854	21.262	16.085	16.512	16.460	38.791	23.528
60	25.418	19.402	14.538	14.319	14.275	32.826	21.427
65	22.348	17.058	12.625	11.753	11.718	26.473	18.792

Pollutant Name: Diesel - mi/gal Temperature: 70F Relative Humidity: 40%

Speed

MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	19.999	20.017	19.426	4.182	4.405	0.000	17.406
10	24.295	24.307	19.477	5.080	4.405	0.000	17.892
15	28.437	28.439	19.525	6.194	4.405	0.000	18.370
20	32.073	32.064	19.568	7.366	4.405	0.000	18.798
25	34.857	34.838	19.600	7.872	4.405	0.000	19.110
30	36.508	36.482	19.619	8.357	4.405	0.000	19.302
35	36.849	36.821	19.623	8.798	4.405	0.000	19.355
40	35.843	35.820	19.612	9.171	4.405	0.000	19.264
45	33.600	33.585	19.585	9.453	4.405	0.000	19.039
50	30.352	30.348	19.547	9.625	4.405	0.000	18.705
55	26.420	26.427	19.501	9.673	4.405	0.000	18.294
60	22.158	22.174	19.452	9.594	4.405	0.000	17.844
65	17.906	17.926	19.402	9.394	4.405	0.000	17.389

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Methane Temperature: 70F Relative Humidity: ALL

Time

min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.001	0.007	0.004	0.043	0.001
10	0.000	0.001	0.002	0.014	0.008	0.052	0.001
20	0.001	0.001	0.004	0.027	0.015	0.068	0.002
30	0.001	0.002	0.006	0.038	0.022	0.084	0.003
40	0.002	0.002	0.008	0.048	0.027	0.099	0.004
50	0.002	0.003	0.010	0.056	0.032	0.113	0.005
60	0.002	0.003	0.012	0.063	0.036	0.124	0.006
120	0.004	0.006	0.020	0.071	0.040	0.139	0.010
180	0.004	0.005	0.020	0.075	0.043	0.141	0.010
240	0.004	0.006	0.021	0.080	0.045	0.150	0.011

300	0.005	0.006	0.023	0.084	0.047	0.159	0.011
360	0.005	0.007	0.024	0.088	0.050	0.168	0.012
420	0.005	0.007	0.025	0.091	0.052	0.176	0.012
480	0.005	0.007	0.026	0.095	0.054	0.185	0.013
540	0.006	0.008	0.028	0.099	0.056	0.193	0.014
600	0.006	0.008	0.029	0.102	0.058	0.201	0.014
660	0.006	0.008	0.030	0.105	0.060	0.209	0.015
720	0.007	0.009	0.031	0.108	0.061	0.216	0.015

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.068	0.089	0.275	2.149	0.776	2.949	0.162
10	0.135	0.176	0.545	4.212	1.520	3.559	0.310
20	0.264	0.343	1.065	8.074	2.914	4.728	0.593
30	0.388	0.504	1.561	11.587	4.181	5.828	0.862
40	0.507	0.657	2.033	14.750	5.323	6.859	1.116
50	0.620	0.802	2.481	17.565	6.339	7.821	1.355
60	0.727	0.939	2.904	20.030	7.228	8.714	1.579
120	1.192	1.527	4.660	23.391	8.441	12.332	2.442
180	1.132	1.450	4.461	24.075	8.688	11.941	2.351
240	1.238	1.582	4.861	24.781	8.943	12.948	2.547
300	1.331	1.698	5.213	25.510	9.206	13.878	2.721
360	1.410	1.797	5.515	26.262	9.477	14.733	2.872
420	1.476	1.881	5.770	27.036	9.757	15.510	3.000
480	1.529	1.948	5.976	27.832	10.044	16.212	3.107
540	1.569	1.999	6.133	28.651	10.340	16.837	3.190
600	1.596	2.034	6.242	29.493	10.643	17.386	3.251
660	1.610	2.053	6.303	30.357	10.955	17.858	3.290
720	1.611	2.056	6.315	31.243	11.275	18.254	3.306

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.046	0.062	0.404	0.499	0.325	0.153	0.145
10	0.047	0.064	0.422	0.753	0.490	0.192	0.153
20	0.049	0.068	0.454	1.197	0.779	0.261	0.168
30	0.051	0.071	0.481	1.559	1.015	0.318	0.182
40	0.053	0.074	0.505	1.839	1.198	0.363	0.193
50	0.055	0.077	0.525	2.037	1.326	0.396	0.202
60	0.056	0.079	0.541	2.152	1.401	0.417	0.208
120	0.062	0.087	0.592	2.167	1.411	0.419	0.226
180	0.063	0.088	0.593	2.160	1.406	0.415	0.226
240	0.062	0.087	0.588	2.147	1.398	0.409	0.225
300	0.061	0.086	0.580	2.131	1.388	0.401	0.222
360	0.060	0.084	0.570	2.110	1.374	0.391	0.218
420	0.059	0.082	0.556	2.086	1.358	0.380	0.213
480	0.057	0.079	0.540	2.057	1.339	0.367	0.207
540	0.055	0.076	0.520	2.023	1.318	0.352	0.200
600	0.052	0.073	0.497	1.986	1.293	0.335	0.191
660	0.049	0.069	0.472	1.944	1.266	0.317	0.182
720	0.046	0.065	0.443	1.899	1.236	0.297	0.172

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	12.810	16.853	21.167	9.520	2.467	13.112	15.842
10	14.312	18.843	23.804	18.987	4.921	15.303	17.840
20	17.845	23.517	29.943	37.763	9.788	19.606	22.479
30	22.083	29.119	37.234	56.328	14.600	23.803	27.975
40	27.028	35.648	45.677	74.682	19.358	27.893	34.327
50	32.678	43.104	55.273	92.826	24.060	31.877	41.536
60	39.033	51.487	66.021	110.759	28.709	35.755	49.602
120	91.538	120.627	153.498	188.382	48.829	53.165	114.999
180	103.831	136.841	174.277	222.560	57.687	57.432	130.576
240	116.121	153.048	195.014	254.720	66.023	61.448	146.114
300	128.408	169.247	215.707	284.863	73.836	65.215	161.614
360	140.691	185.439	236.358	312.988	81.126	68.730	177.076
420	152.971	201.623	256.966	339.096	87.894	71.995	192.499
480	165.248	217.799	277.531	363.188	94.138	75.010	207.884
540	177.522	233.968	298.054	385.262	99.859	77.774	223.230
600	189.793	250.130	318.533	405.318	105.058	80.288	238.538
660	202.060	266.283	338.970	423.358	109.734	82.551	253.808
720	214.324	282.430	359.363	439.380	113.887	84.564	269.039

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.001	0.000	0.000	0.000
30	0.000	0.000	0.000	0.001	0.000	0.000	0.000
40	0.000	0.000	0.000	0.001	0.000	0.000	0.000
50	0.000	0.000	0.001	0.001	0.000	0.001	0.000
60	0.000	0.001	0.001	0.001	0.000	0.001	0.001
120	0.001	0.001	0.002	0.002	0.001	0.001	0.001
180	0.001	0.001	0.002	0.003	0.001	0.001	0.001
240	0.001	0.002	0.002	0.003	0.001	0.001	0.002
300	0.001	0.002	0.002	0.003	0.001	0.001	0.002
360	0.001	0.002	0.002	0.004	0.001	0.001	0.002
420	0.002	0.002	0.003	0.004	0.001	0.001	0.002
480	0.002	0.002	0.003	0.004	0.001	0.001	0.002
540	0.002	0.002	0.003	0.004	0.001	0.001	0.002
600	0.002	0.003	0.003	0.005	0.001	0.001	0.002
660	0.002	0.003	0.004	0.005	0.001	0.001	0.003
720	0.002	0.003	0.004	0.005	0.001	0.001	0.003

Pollutant Name: PM2.5 Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.001	0.001	0.001	0.000	0.000	0.000	0.001
40	0.001	0.001	0.001	0.000	0.000	0.000	0.001
50	0.001	0.001	0.001	0.000	0.000	0.000	0.001
60	0.001	0.001	0.001	0.000	0.000	0.000	0.001
120	0.002	0.002	0.001	0.001	0.000	0.000	0.002

180	0.002	0.002	0.002	0.001	0.000	0.000	0.002
240	0.003	0.003	0.002	0.001	0.000	0.000	0.002
300	0.003	0.003	0.002	0.001	0.000	0.000	0.003
360	0.003	0.003	0.002	0.001	0.000	0.000	0.003
420	0.003	0.003	0.002	0.001	0.000	0.000	0.003
480	0.003	0.003	0.002	0.001	0.000	0.000	0.003
540	0.003	0.003	0.002	0.001	0.000	0.000	0.003
600	0.003	0.003	0.002	0.001	0.000	0.000	0.003
660	0.003	0.003	0.002	0.001	0.000	0.000	0.003
720	0.003	0.003	0.002	0.001	0.000	0.000	0.003

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Methane Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

Title : I-405 Improvements Project
Version : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 5a: Partial Day Diurnal Loss Emissions (grams/hour)

```
     Pollutant Name: Methane                    Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.000    0.000    0.000    0.000    0.000    0.000    0.000
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  5b:  Multi-Day Diurnal Loss Emissions (grams/hour)

     Pollutant Name: Methane                    Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.000    0.000    0.000    0.000    0.000    0.000    0.000
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  6a:  Partial Day Resting Loss Emissions (grams/hour)

     Pollutant Name: Methane                    Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.000    0.000    0.000    0.000    0.000    0.000    0.000
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table  6b:  Multi-Day Resting Loss Emissions (grams/hour)

     Pollutant Name: Methane                   Temperature: ALL   Relative Humidity: ALL

     Temp
     degF       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       70      0.000    0.000    0.000    0.000    0.000    0.000    0.000
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
Season   : Annual
Area     : Orange
*******************************************************************************************
     Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
     Emfac2011-LDV Emission Factors: V2.50.57.246

     County Average                                Orange                County Average

                            Table   7:  Estimated Travel Fractions

     Pollutant Name:                           Temperature: ALL   Relative Humidity: ALL


                 LDA      LDT      MDT      HDT      UBUS     MCY      ALL

    %VMT       0.496    0.274    0.217    0.008    0.002    0.003    1.000
    %TRIP      0.488    0.248    0.248    0.011    0.000    0.005    1.000
    %VEH       0.503    0.259    0.207    0.014    0.001    0.015    1.000
```

```
Title    : I-405 Improvements Project
Version  : Emfac2011-LDV V2.50.57.246
Run Date : 2014/11/11 10:07:34
Scen Year: 2035 -- All model years in the range 1991 to 2035 selected
```

Season : Annual
Area : Orange
****

Year: 2035 -- Model Years 1991 to 2035 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.57.246

County Average Orange County Average

Table 8: Evaporative Running Loss Emissions (grams/minute)

Pollutant Name: Methane Temperature: 70F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000

EMFAC2011-PL Emission Factors

Region_Ty	Region	CalYr	Season	Veh	Fuel	Veh & Tec MdlYr	Speed	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	CO2(Pavley I + LCFS)_RUNEX	PM10_RUNEX	PM2_5_RUNEX	SOx_RUNEX	PM2.5	PM10
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	5	0.172	0.257	2.303	0.329	1319	970	0.014	0.013	0.004	0.032	0.062
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	10	0.116	0.170	1.975	0.274	981	724	0.010	0.009	0.004	0.028	0.057
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	15	0.081	0.116	1.737	0.230	756	558	0.007	0.006	0.004	0.025	0.054
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	20	0.059	0.084	1.547	0.200	605	447	0.005	0.004	0.004	0.023	0.052
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	25	0.045	0.065	1.404	0.181	503	372	0.004	0.003	0.004	0.022	0.051
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	30	0.037	0.052	1.288	0.169	434	321	0.003	0.003	0.004	0.022	0.050
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	35	0.032	0.045	1.200	0.163	389	287	0.002	0.002	0.004	0.021	0.050
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	40	0.029	0.041	1.140	0.159	363	268	0.002	0.002	0.004	0.021	0.050
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	45	0.028	0.038	1.065	0.157	349	258	0.002	0.002	0.004	0.021	0.050
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	50	0.028	0.038	1.017	0.160	349	258	0.002	0.002	0.004	0.021	0.049
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	55	0.029	0.040	0.981	0.169	360	266	0.002	0.002	0.004	0.021	0.049
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	60	0.033	0.044	0.969	0.186	383	283	0.002	0.002	0.004	0.021	0.050
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	65	0.038	0.051	1.004	0.192	425	314	0.002	0.002	0.004	0.021	0.050
County	Orange	2020	Annual	NT	TOT	Non-Trucks AllMYr	70	0.049	0.065	1.237	0.217	464	337	0.002	0.002	0.004	0.021	0.050
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	5	1.448	1.661	5.775	6.081	2775	2498	0.054	0.050	0.010	0.081	0.134
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	10	0.900	1.035	4.219	4.639	2289	2060	0.047	0.044	0.010	0.075	0.128
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	15	0.497	0.572	2.746	3.550	1776	1598	0.040	0.037	0.010	0.068	0.121
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	20	0.255	0.295	1.829	2.781	1378	1240	0.034	0.032	0.010	0.063	0.115
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	25	0.210	0.243	1.482	2.544	1219	1097	0.032	0.029	0.010	0.060	0.112
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	30	0.177	0.205	1.264	2.353	1107	996	0.030	0.028	0.010	0.059	0.111
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	35	0.152	0.175	1.133	2.205	1027	924	0.030	0.028	0.010	0.059	0.111
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	40	0.132	0.152	1.064	2.098	971	874	0.032	0.029	0.010	0.060	0.112
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	45	0.116	0.134	1.030	2.030	937	843	0.034	0.031	0.010	0.063	0.114
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	50	0.104	0.120	1.037	2.006	922	829	0.038	0.035	0.010	0.066	0.118
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	55	0.096	0.111	1.086	2.031	926	833	0.042	0.039	0.010	0.070	0.123
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	60	0.091	0.105	1.182	2.111	951	856	0.048	0.044	0.010	0.075	0.128
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	65	0.090	0.104	1.343	2.243	1003	902	0.055	0.051	0.010	0.082	0.135
County	Orange	2020	Annual	T	TOT	Trucks - TC AllMYr	70	0.101	0.117	1.845	2.547	1089	980	0.064	0.059	0.010	0.090	0.145

Region_Ty	Region	CalYr	Season	Veh	Fuel	Veh & Tec MdlYr	Speed	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	CO2(Pavley I + LCFS)_RUNEX	PM10_RUNEX	PM2_5_RUNEX	SOx_RUNEX	PM2.5	PM10
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	5	0.108	0.172	1.385	0.188	1338	867	0.015	0.014	0.005	0.033	0.063
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	10	0.073	0.114	1.230	0.159	997	647	0.010	0.009	0.005	0.028	0.057
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	15	0.050	0.077	1.084	0.133	767	499	0.007	0.006	0.005	0.025	0.054
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	20	0.037	0.055	0.973	0.115	614	399	0.005	0.004	0.005	0.023	0.052
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	25	0.029	0.043	0.895	0.105	510	333	0.004	0.003	0.005	0.022	0.051
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	30	0.024	0.035	0.828	0.098	440	287	0.003	0.003	0.005	0.022	0.051
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	35	0.021	0.031	0.783	0.094	395	257	0.002	0.002	0.005	0.021	0.050
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	40	0.020	0.028	0.743	0.091	367	240	0.002	0.002	0.005	0.021	0.050
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	45	0.019	0.027	0.693	0.089	354	231	0.002	0.002	0.005	0.021	0.050
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	50	0.020	0.027	0.664	0.091	354	231	0.002	0.002	0.005	0.021	0.050
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	55	0.022	0.030	0.651	0.096	365	238	0.002	0.002	0.005	0.021	0.050
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	60	0.025	0.033	0.632	0.104	388	253	0.002	0.002	0.005	0.021	0.050
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	65	0.030	0.040	0.664	0.109	431	281	0.002	0.002	0.005	0.021	0.050
County	Orange	2040	Annual	NT	TOT	Non-Trucks AllMYr	70	0.040	0.053	0.857	0.127	466	302	0.002	0.002	0.005	0.021	0.050
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	5	1.126	1.293	3.355	3.172	2806	2526	0.041	0.038	0.010	0.069	0.122
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	10	0.671	0.773	2.349	2.428	2315	2083	0.038	0.035	0.010	0.066	0.119
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	15	0.352	0.407	1.474	1.860	1803	1623	0.034	0.031	0.010	0.062	0.114
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	20	0.163	0.190	0.918	1.443	1401	1261	0.029	0.027	0.010	0.058	0.110
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	25	0.140	0.163	0.781	1.307	1244	1120	0.028	0.025	0.010	0.057	0.108
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	30	0.121	0.141	0.691	1.195	1132	1019	0.027	0.025	0.010	0.056	0.108
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	35	0.106	0.122	0.639	1.105	1052	947	0.027	0.025	0.010	0.057	0.108
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	40	0.093	0.107	0.613	1.038	996	896	0.029	0.027	0.010	0.058	0.110
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	45	0.082	0.095	0.602	0.993	961	865	0.032	0.029	0.010	0.060	0.112
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	50	0.074	0.085	0.609	0.970	945	850	0.035	0.032	0.010	0.064	0.116
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	55	0.068	0.078	0.640	0.974	948	853	0.040	0.037	0.010	0.068	0.120
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	60	0.064	0.074	0.686	1.003	972	875	0.045	0.042	0.010	0.073	0.126
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	65	0.062	0.072	0.762	1.062	1022	920	0.052	0.048	0.010	0.079	0.133
County	Orange	2040	Annual	T	TOT	Trucks - TC AllMYr	70	0.065	0.075	0.980	1.170	1106	995	0.060	0.055	0.010	0.087	0.141

Region_Ty	Region	CalYr	Season	Veh	Fuel	Veh & Tec MdlYr	Speed	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	CO2(Pavley I + LCFS)_RUNEX	PM10_RUNEX	PM2_5_RUNEX	SOx_RUNEX	PM2.5	PM10
County	Orange	2009	Annual	NT	TOT	Non-Trucks AllMYr	5	0.623	0.809	7.327	0.784	1321	1321	0.031	0.028	0.005	0.047	0.078
County	Orange	2009	Annual	NT	TOT	Non-Trucks AllMYr	10	0.405	0.521	5.802	0.641	983	982	0.021	0.019	0.005	0.038	0.068
County	Orange	2009	Annual	NT	TOT	Non-Trucks AllMYr	15	0.284	0.362	4.877	0.546	757	757	0.014	0.013	0.005	0.032	0.062
County	Orange	2009	Annual	NT	TOT	Non-Trucks AllMYr	20	0.208	0.265	4.226	0.483	606	606	0.010	0.009	0.005	0.028	0.058

EMFAC2011-PL Emission Factors

County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	25	0.162	0.206	3.766	0.445	505	505	0.008	0.007	0.005	0.026	0.056
County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	30	0.133	0.168	3.421	0.420	435	435	0.006	0.006	0.005	0.025	0.054
County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	35	0.116	0.146	3.198	0.409	390	390	0.005	0.005	0.005	0.024	0.053
County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	40	0.107	0.134	3.087	0.408	363	363	0.005	0.004	0.005	0.023	0.052
County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	45	0.099	0.124	2.906	0.399	351	351	0.004	0.004	0.005	0.023	0.052
County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	50	0.097	0.122	2.830	0.407	349	349	0.004	0.004	0.005	0.023	0.052
County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	55	0.100	0.125	2.809	0.422	361	361	0.004	0.004	0.005	0.023	0.052
County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	60	0.109	0.136	2.916	0.457	384	384	0.005	0.004	0.005	0.023	0.052
County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	65	0.128	0.158	3.247	0.486	426	426	0.005	0.005	0.005	0.024	0.053
County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	70	0.188	0.231	4.634	0.626	464	464	0.006	0.005	0.005	0.024	0.054
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	5	4.026	4.582	15.720	16.207	2622	2622	0.778	0.716	0.009	0.746	0.855
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	10	2.580	2.936	12.310	11.709	2161	2161	0.552	0.508	0.009	0.538	0.629
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	15	1.449	1.648	8.503	8.556	1655	1655	0.377	0.347	0.009	0.377	0.453
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	20	0.732	0.835	6.054	6.707	1280	1280	0.243	0.224	0.009	0.254	0.320
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	25	0.574	0.654	4.801	6.363	1118	1118	0.206	0.189	0.009	0.219	0.282
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	30	0.459	0.524	3.965	6.106	1005	1005	0.178	0.163	0.009	0.193	0.254
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	35	0.376	0.430	3.406	5.928	928	928	0.159	0.146	0.009	0.176	0.235
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	40	0.321	0.367	3.064	5.835	875	875	0.149	0.137	0.009	0.167	0.225
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	45	0.283	0.323	2.846	5.790	844	844	0.148	0.136	0.009	0.166	0.224
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	50	0.263	0.301	2.770	5.826	832	832	0.155	0.143	0.009	0.173	0.232
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	55	0.261	0.299	2.839	5.942	840	840	0.172	0.158	0.009	0.188	0.248
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	60	0.277	0.317	3.087	6.174	869	869	0.197	0.181	0.009	0.211	0.273
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	65	0.312	0.358	3.564	6.526	925	925	0.231	0.212	0.009	0.242	0.307
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	70	0.418	0.476	5.395	7.616	1017	1017	0.275	0.253	0.009	0.283	0.351

Region_Ty	Region	CalYr	Season	Veh	Fuel	Veh & Tec	MdlYr	Speed	PM10_PMTW	PM10_PMBW	PM2_5_PMTW	PM2_5_PMBW
County	Orange	2035	Annual	NT	TOT	Non-Trucks	AllMYr	AllSpeeds	0.008	0.040	0.002	0.017
County	Orange	2035	Annual	T	TOT	Trucks - TC	AllMYr	AllSpeeds	0.019	0.062	0.005	0.026

Region_Ty	Region	CalYr	Season	Veh	Fuel	Veh & Tec	MdlYr	Speed	PM10_PMTW	PM10_PMBW	PM2_5_PMTW	PM2_5_PMBW
County	Orange	2020	Annual	NT	TOT	Non-Trucks	AllMYr	AllSpeeds	0.008	0.040	0.002	0.017
County	Orange	2020	Annual	T	TOT	Trucks - TC	AllMYr	AllSpeeds	0.018	0.062	0.005	0.027

Region_Ty	Region	CalYr	Season	Veh	Fuel	Veh & Tec	MdlYr	Speed	PM10_PMTW	PM10_PMBW	PM2_5_PMTW	PM2_5_PMBW
County	Orange	2009	Annual	NT	TOT	Non-Trucks	AllMYr	AllSpeeds	0.008	0.040	0.002	0.017
County	Orange	2009	Annual	T	TOT	Trucks - TC	AllMYr	AllSpeeds	0.016	0.060	0.004	0.026

Appendix C

Mobile Source Air Toxic Emissions

Appendix B. Mobile Source Air Toxic Emissions (lb/day)

Year	Build ID	Time Period	Segments	Diesel PM	Formaldehyde	Butadiene	Benzene	Acrolein	Acetaldehyde	Naphthalene
2009	EXT	AM	SR-73 to Brookhurst	4.7	2.4	0.5	2.1	0.1	0.8	0.2
2009	EXT	AM	Brookhurst to SR-22 East	5.1	3.1	0.6	2.7	0.1	1.1	0.2
2009	EXT	AM	SR-22 East to I-605	4.0	2.7	0.5	2.3	0.1	1.0	0.2
2009	EXT	PM	SR-73 to Brookhurst	4.8	3.4	0.6	2.8	0.1	1.2	0.2
2009	EXT	PM	Brookhurst to SR-22 East	7.3	4.3	0.8	3.8	0.2	1.5	0.3
2009	EXT	PM	SR-22 East to I-605	5.0	3.0	0.6	2.6	0.1	1.1	0.2
2009	EXT	NP	SR-73 to Brookhurst	11.6	5.9	1.2	5.1	0.3	2.1	0.4
2009	EXT	NP	Brookhurst to SR-22 East	21.7	11.0	2.2	9.6	0.5	3.9	0.7
2009	EXT	NP	SR-22 East to I-605	14.1	7.2	1.4	6.3	0.3	2.5	0.5
2020	NOB	AM	SR-73 to Brookhurst	1.4	1.1	0.2	0.7	0.0	0.4	0.1
2020	NOB	AM	Brookhurst to SR-22 East	3.5	5.7	0.7	3.5	0.2	2.2	0.5
2020	NOB	AM	SR-22 East to I-605	1.7	1.9	0.3	1.3	0.1	0.7	0.2
2020	NOB	PM	SR-73 to Brookhurst	2.2	2.4	0.4	1.7	0.1	0.9	0.3
2020	NOB	PM	Brookhurst to SR-22 East	6.3	13.7	1.5	7.5	0.3	5.6	1.2
2020	NOB	PM	SR-22 East to I-605	2.4	2.7	0.4	1.9	0.1	1.0	0.3
2020	NOB	NP	SR-73 to Brookhurst	2.4	1.3	0.2	1.1	0.1	0.4	0.1
2020	NOB	NP	Brookhurst to SR-22 East	4.1	2.2	0.4	1.9	0.1	0.8	0.2
2020	NOB	NP	SR-22 East to I-605	2.8	1.6	0.3	1.3	0.1	0.5	0.2
2020	ALT1	AM	SR-73 to Brookhurst	1.8	1.0	0.2	0.8	0.0	0.4	0.1
2020	ALT1	AM	Brookhurst to SR-22 East	2.2	1.6	0.2	1.1	0.1	0.6	0.2
2020	ALT1	AM	SR-22 East to I-605	1.5	1.1	0.2	0.8	0.0	0.4	0.1
2020	ALT1	PM	SR-73 to Brookhurst	1.8	1.5	0.2	1.0	0.0	0.6	0.1
2020	ALT1	PM	Brookhurst to SR-22 East	3.0	2.8	0.4	1.9	0.1	1.1	0.3
2020	ALT1	PM	SR-22 East to I-605	2.1	1.6	0.2	1.1	0.1	0.6	0.1
2020	ALT1	NP	SR-73 to Brookhurst	2.5	1.4	0.3	1.2	0.1	0.5	0.1
2020	ALT1	NP	Brookhurst to SR-22 East	4.3	2.4	0.4	2.0	0.1	0.8	0.2
2020	ALT1	NP	SR-22 East to I-605	3.0	1.7	0.3	1.4	0.1	0.6	0.2
2020	ALT2	AM	SR-73 to Brookhurst	1.8	1.0	0.2	0.8	0.0	0.4	0.1
2020	ALT2	AM	Brookhurst to SR-22 East	2.9	1.6	0.3	1.3	0.1	0.6	0.2
2020	ALT2	AM	SR-22 East to I-605	1.8	1.1	0.2	0.8	0.0	0.4	0.1
2020	ALT2	PM	SR-73 to Brookhurst	1.8	1.3	0.2	0.9	0.0	0.5	0.1
2020	ALT2	PM	Brookhurst to SR-22 East	3.5	2.1	0.3	1.6	0.1	0.8	0.2
2020	ALT2	PM	SR-22 East to I-605	2.4	1.4	0.2	1.1	0.1	0.5	0.1
2020	ALT2	NP	SR-73 to Brookhurst	2.6	1.4	0.3	1.2	0.1	0.5	0.1
2020	ALT2	NP	Brookhurst to SR-22 East	4.6	2.5	0.5	2.1	0.1	0.9	0.3
2020	ALT2	NP	SR-22 East to I-605	3.2	1.7	0.3	1.5	0.1	0.6	0.2
2020	ALT3	AM	SR-73 to Brookhurst	2.1	1.2	0.2	1.0	0.1	0.4	0.1

Appendix B. Mobile Source Air Toxic Emissions (lb/day)

Year	Build ID	Time Period	Segments	Diesel PM	Formaldehyde	Butadiene	Benzene	Acrolein	Acetaldehyde	Naphthalene
2020	ALT3	AM	Brookhurst to SR-22 East	3.0	1.7	0.3	1.4	0.1	0.6	0.2
2020	ALT3	AM	SR-22 East to I-605	1.6	1.2	0.2	0.8	0.0	0.5	0.1
2020	ALT3	PM	SR-73 to Brookhurst	2.4	1.4	0.2	1.1	0.1	0.5	0.1
2020	ALT3	PM	Brookhurst to SR-22 East	3.3	2.2	0.3	1.6	0.1	0.8	0.2
2020	ALT3	PM	SR-22 East to I-605	2.3	1.5	0.2	1.1	0.1	0.6	0.1
2020	ALT3	NP	SR-73 to Brookhurst	2.6	1.4	0.3	1.2	0.1	0.5	0.1
2020	ALT3	NP	Brookhurst to SR-22 East	4.4	2.4	0.5	2.1	0.1	0.8	0.2
2020	ALT3	NP	SR-22 East to I-605	2.9	1.6	0.3	1.4	0.1	0.5	0.2
2040	NOB	AM	SR-73 to Brookhurst	1.8	2.1	0.3	1.3	0.1	0.8	0.3
2040	NOB	AM	Brookhurst to SR-22 East	4.5	15.8	1.3	6.8	0.3	6.9	1.8
2040	NOB	AM	SR-22 East to I-605	3.1	11.1	0.9	4.7	0.2	4.8	1.3
2040	NOB	PM	SR-73 to Brookhurst	3.2	8.1	0.7	3.7	0.2	3.5	0.9
2040	NOB	PM	Brookhurst to SR-22 East	5.7	20.3	1.7	8.7	0.4	8.8	2.3
2040	NOB	PM	SR-22 East to I-605	4.0	14.3	1.2	6.1	0.2	6.2	1.6
2040	NOB	NP	SR-73 to Brookhurst	2.0	1.0	0.2	0.8	0.0	0.3	0.1
2040	NOB	NP	Brookhurst to SR-22 East	3.4	1.6	0.3	1.3	0.1	0.6	0.2
2040	NOB	NP	SR-22 East to I-605	2.5	1.2	0.2	1.0	0.0	0.4	0.2
2040	ALT1	AM	SR-73 to Brookhurst	1.4	1.1	0.1	0.7	0.0	0.4	0.1
2040	ALT1	AM	Brookhurst to SR-22 East	2.7	3.1	0.4	2.0	0.1	1.2	0.5
2040	ALT1	AM	SR-22 East to I-605	1.9	2.2	0.3	1.4	0.1	0.8	0.4
2040	ALT1	PM	SR-73 to Brookhurst	2.2	2.5	0.3	1.6	0.1	1.0	0.4
2040	ALT1	PM	Brookhurst to SR-22 East	5.0	12.6	1.1	5.7	0.2	5.4	1.4
2040	ALT1	PM	SR-22 East to I-605	2.4	2.8	0.4	1.8	0.1	1.1	0.5
2040	ALT1	NP	SR-73 to Brookhurst	2.3	1.1	0.2	0.9	0.0	0.4	0.1
2040	ALT1	NP	Brookhurst to SR-22 East	3.9	1.8	0.3	1.5	0.1	0.7	0.2
2040	ALT1	NP	SR-22 East to I-605	2.8	1.3	0.2	1.1	0.1	0.5	0.2
2040	ALT2	AM	SR-73 to Brookhurst	1.4	0.9	0.1	0.6	0.0	0.4	0.1
2040	ALT2	AM	Brookhurst to SR-22 East	2.3	1.5	0.2	1.0	0.0	0.6	0.2
2040	ALT2	AM	SR-22 East to I-605	1.5	1.5	0.2	0.9	0.0	0.6	0.2
2040	ALT2	PM	SR-73 to Brookhurst	2.1	2.4	0.3	1.5	0.1	0.9	0.4
2040	ALT2	PM	Brookhurst to SR-22 East	2.8	2.4	0.3	1.4	0.1	1.0	0.3
2040	ALT2	PM	SR-22 East to I-605	2.0	1.9	0.2	1.1	0.1	0.8	0.3
2040	ALT2	NP	SR-73 to Brookhurst	2.6	1.2	0.2	1.0	0.1	0.4	0.2
2040	ALT2	NP	Brookhurst to SR-22 East	4.4	2.1	0.4	1.7	0.1	0.7	0.3
2040	ALT2	NP	SR-22 East to I-605	3.1	1.5	0.3	1.2	0.1	0.5	0.2
2040	ALT3	AM	SR-73 to Brookhurst	1.9	1.0	0.1	0.7	0.0	0.4	0.1
2040	ALT3	AM	Brookhurst to SR-22 East	2.3	1.8	0.2	1.1	0.0	0.7	0.2

Appendix B. Mobile Source Air Toxic Emissions (lb/day)

Year	Build ID	Time Period	Segments	Diesel PM	Formaldehyde	Butadiene	Benzene	Acrolein	Acetaldehyde	Naphthalene
2040	ALT3	AM	SR-22 East to I-605	1.9	2.2	0.3	1.4	0.1	0.9	0.4
2040	ALT3	PM	SR-73 to Brookhurst	1.8	1.5	0.2	0.9	0.0	0.6	0.2
2040	ALT3	PM	Brookhurst to SR-22 East	3.0	2.9	0.4	1.7	0.1	1.2	0.4
2040	ALT3	PM	SR-22 East to I-605	2.5	2.9	0.4	1.8	0.1	1.1	0.5
2040	ALT3	NP	SR-73 to Brookhurst	2.4	1.1	0.2	0.9	0.0	0.4	0.2
2040	ALT3	NP	Brookhurst to SR-22 East	4.1	1.9	0.4	1.6	0.1	0.7	0.3
2040	ALT3	NP	SR-22 East to I-605	2.7	1.3	0.2	1.1	0.1	0.5	0.2

Emissions Summary by Build Alternative and Segment

2009	EXT		SR-73 to Brookhurst	21.1	11.6	2.3	10.0	0.5	4.1	0.8
2009	EXT		Brookhurst to SR-22 East	34.1	18.4	3.6	16.1	0.8	6.5	1.2
2009	EXT		SR-22 East to I-605	23.2	12.9	2.5	11.1	0.6	4.5	0.8
2020	NOB		SR-73 to Brookhurst	6.0	4.8	0.8	3.5	0.2	1.8	0.5
2020	NOB		Brookhurst to SR-22 East	13.8	21.7	2.7	12.9	0.6	8.6	1.9
2020	NOB		SR-22 East to I-605	7.0	6.1	1.0	4.5	0.2	2.3	0.6
2020	ALT1		SR-73 to Brookhurst	6.1	3.9	0.7	3.0	0.1	1.4	0.4
2020	ALT1		Brookhurst to SR-22 East	9.5	6.8	1.1	5.0	0.2	2.5	0.7
2020	ALT1		SR-22 East to I-605	6.7	4.3	0.7	3.3	0.2	1.6	0.4
2020	ALT2		SR-73 to Brookhurst	6.2	3.8	0.6	3.0	0.1	1.4	0.4
2020	ALT2		Brookhurst to SR-22 East	11.0	6.3	1.1	5.1	0.3	2.2	0.6
2020	ALT2		SR-22 East to I-605	7.4	4.3	0.7	3.4	0.2	1.5	0.4
2020	ALT3		SR-73 to Brookhurst	7.1	3.9	0.7	3.3	0.2	1.4	0.4
2020	ALT3		Brookhurst to SR-22 East	10.8	6.3	1.1	5.0	0.2	2.3	0.6
2020	ALT3		SR-22 East to I-605	6.8	4.3	0.7	3.3	0.2	1.6	0.4
2040	NOB		SR-73 to Brookhurst	7.1	11.1	1.2	5.8	0.3	4.6	1.4
2040	NOB		Brookhurst to SR-22 East	13.7	37.8	3.3	16.8	0.7	16.3	4.3
2040	NOB		SR-22 East to I-605	9.7	26.5	2.3	11.8	0.5	11.4	3.0
2040	ALT1		SR-73 to Brookhurst	5.9	4.6	0.7	3.1	0.1	1.8	0.7
2040	ALT1		Brookhurst to SR-22 East	11.6	17.5	1.9	9.2	0.4	7.3	2.2
2040	ALT1		SR-22 East to I-605	7.1	6.3	0.9	4.3	0.2	2.4	1.0
2040	ALT2		SR-73 to Brookhurst	6.1	4.5	0.7	3.1	0.1	1.7	0.7
2040	ALT2		Brookhurst to SR-22 East	9.5	6.0	0.9	4.1	0.2	2.3	0.8
2040	ALT2		SR-22 East to I-605	6.6	4.9	0.7	3.2	0.2	1.9	0.7
2040	ALT3		SR-73 to Brookhurst	6.1	3.6	0.5	2.5	0.1	1.4	0.5
2040	ALT3		Brookhurst to SR-22 East	9.5	6.6	0.9	4.4	0.2	2.6	0.9
2040	ALT3		SR-22 East to I-605	7.1	6.3	0.9	4.3	0.2	2.4	1.0

Appendix B. Mobile Source Air Toxic Emissions (lb/day)

Year	Build ID	Time Period	Segments	Diesel PM	Formaldehyde	Butadiene	Benzene	Acrolein	Acetaldehyde	Naphthalene
Emissions Summary by Build Alternative										
2009	EXT			78.3	42.9	8.4	37.2	1.9	15.1	2.8
2020	NOB			26.8	32.6	4.4	21.0	1.0	12.7	3.1
2020	ALT1			22.3	15.0	2.4	11.3	0.6	5.5	1.5
2020	ALT2			24.7	14.3	2.5	11.5	0.6	5.1	1.4
2020	ALT3			24.7	14.5	2.5	11.6	0.6	5.2	1.4
2040	NOB			30.4	75.4	6.7	34.4	1.4	32.4	8.7
2040	ALT1			24.7	28.4	3.4	16.6	0.8	11.4	3.9
2040	ALT2			22.2	15.4	2.2	10.4	0.5	5.9	2.1
2040	ALT3			22.7	16.6	2.4	11.2	0.5	6.4	2.4

Appendix D

Construction Emissions

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> I-405 Roadway Expansion Project Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	2.3	17.6	21.1	46.0	1.0	45.0	10.2	0.9	9.4	3,650.8
Grading/Excavation	11.2	59.4	140.4	51.3	6.3	45.0	14.8	5.4	9.4	18,733.8
Drainage/Utilities/Sub-Grade	5.3	33.4	46.3	47.8	2.8	45.0	11.8	2.5	9.4	7,102.0
Paving	2.3	19.0	17.9	1.2	1.2	-	1.1	1.1	-	4,195.2
Maximum (pounds/day)	11.2	59.4	140.4	51.3	6.3	45.0	14.8	5.4	9.4	18,733.8
Total (tons/construction project)	4.3	24.6	48.6	25.1	2.3	22.7	6.8	2.0	4.7	6,863.8

Notes: Project Start Year -> 2015
Project Length (months) -> 54
Total Project Area (acres) -> 485
Maximum Area Disturbed/Day (acres) -> 5
Total Soil Imported/Exported (yd^3/day)-> 1226

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

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

Emission Estimates for -> I-405 Roadway Expansion Project Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.0	8.0	9.6	20.9	0.5	20.5	4.7	0.4	4.3	1,659.4
Grading/Excavation	5.1	27.0	63.8	23.3	2.8	20.5	6.7	2.5	4.3	8,515.3
Drainage/Utilities/Sub-Grade	2.4	15.2	21.1	21.7	1.3	20.5	5.4	1.1	4.3	3,228.2
Paving	1.0	8.6	8.1	0.6	0.6	-	0.5	0.5	-	1,906.9
Maximum (kilograms/day)	5.1	27.0	63.8	23.3	2.8	20.5	6.7	2.5	4.3	8,515.3
Total (megagrams/construction project)	3.9	22.3	44.1	22.7	2.1	20.6	6.1	1.8	4.3	6,225.6

Notes: Project Start Year -> 2015
Project Length (months) -> 54
Total Project Area (hectares) -> 196
Maximum Area Disturbed/Day (hectares) -> 2
Total Soil Imported/Exported ($meters^3$/day)-> 937

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

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

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

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

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	I-405 Roadway Expansion Project	
Construction Start Year	2015	Enter a Year between 2009 and 2025 (inclusive)
Project Type	2	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	54.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	14.00	miles
Total Project Area	485.00	acres
Maximum Area Disturbed/Day	4.50	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	622.00	yd^3/day
Soil Exported	604.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

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

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

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

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing		5.40	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		24.30	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		16.20	0.00	0.00	0.00	0.00	0.00	0.00
Paving		8.10	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	54.00						

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

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

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		61
Vehicle miles traveled/day (calculated)		1839

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.18	8.37	0.79	0.18	0.11	1677.48
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.72	33.91	3.22	0.73	0.45	6794.89
Tons per contruction period	0.19	9.07	0.86	0.19	0.12	1816.27

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

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		39
No. of employees: Grading/Excavation		54
No. of employees: Drainage/Utilities/Sub-Grade		48
No. of employees: Paving		44

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.164	0.219	1.956	0.047	0.020	443.518
Emission rate - Grading/Excavation (grams/mile)	0.148	0.196	1.757	0.047	0.020	443.641
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.125	0.161	1.460	0.047	0.020	443.835
Emission rate - Paving (grams/mile)	0.114	0.144	1.319	0.047	0.020	442.294
Emission rate - Grubbing/Land Clearing (grams/trip)	0.558	0.363	4.666	0.004	0.003	95.528
Emission rate - Grading/Excavation (grams/trip)	0.508	0.325	4.228	0.004	0.003	95.587
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.431	0.267	3.553	0.004	0.003	95.685
Emission rate - Paving (grams/trip)	0.390	0.235	3.181	0.004	0.003	95.793
Pounds per day - Grubbing/Land Clearing	0.654	0.810	7.475	0.161	0.068	1530.520
Tons per const. Period - Grub/Land Clear	0.039	0.048	0.444	0.010	0.004	90.913
Pounds per day - Grading/Excavation	0.823	1.005	9.323	0.223	0.094	2123.578
Tons per const. Period - Grading/Excavation	0.220	0.269	2.492	0.060	0.025	567.632
Pounds per day - Drainage/Utilities/Sub-Grade	0.613	0.731	6.852	0.197	0.083	1877.483
Tons per const. Period - Drain/Util/Sub-Grade	0.109	0.130	1.221	0.035	0.015	334.567
Pounds per day - Paving	0.515	0.600	5.697	0.181	0.076	1723.341
Tons per const. Period - Paving	0.046	0.053	0.508	0.016	0.007	153.550
tons per construction period	0.414	0.500	4.665	0.120	0.051	1146.662

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

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		1		40
Grading/Excavation - Exhaust		1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.25	9.41	1.09	0.22	0.15	1694.67
Emission rate - Grading/Excavation (grams/mile)	0.18	8.37	0.79	0.18	0.11	1677.48
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.15	6.96	0.67	0.16	0.09	1635.48
Pounds per day - Grubbing/Land Clearing	0.02	0.83	0.10	0.02	0.01	149.31
Tons per const. Period - Grub/Land Clear	0.00	0.05	0.01	0.00	0.00	8.87
Pound per day - Grading/Excavation	0.02	0.74	0.07	0.02	0.01	147.80
Tons per const. Period - Grading/Excavation	0.00	0.20	0.02	0.00	0.00	39.51
Pound per day - Drainage/Utilities/Subgrade	0.01	0.61	0.06	0.01	0.01	144.10
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.11	0.01	0.00	0.00	25.68

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

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		4.5	45.0	2.7	9.4	0.6
Fugitive Dust - Grading/Excavation		4.5	45.0	12.0	9.4	2.5
Fugitive Dust - Drainage/Utilities/Subgrade		4.5	45.0	8.0	9.4	1.7

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.74	4.47	9.67	0.37	0.34	825.35
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	2	Excavators	0.88	5.58	9.81	0.48	0.45	1145.60
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	28	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	1.6	10.0	19.5	0.9	0.8	1971.0
	Grubbing/Land Clearing	tons per phase	0.1	0.6	1.2	0.1	0.0	117.1

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.73	4.47	9.45	0.36	0.33	825.16
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	1.23	8.37	13.46	0.66	0.61	1718.46
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	2	Graders	2.12	6.96	20.68	1.16	1.07	1341.72
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.70	3.02	6.22	0.46	0.42	559.04
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.52	3.12	6.49	0.22	0.20	662.67
	2	Scrapers	2.90	14.51	35.34	1.42	1.31	3216.61
0.00	28	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	1.43	6.29	13.07	1.01	0.93	1343.83
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	9.7	46.7	104.7	5.3	4.9	9667.5
	Grading	tons per phase	2.6	12.5	28.0	1.4	1.3	2584.1

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.60	3.40	3.96	0.31	0.29	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.44	2.96	3.51	0.23	0.22	487.07
	1	Graders	0.92	3.47	8.83	0.50	0.46	668.11
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.38	2.45	2.90	0.20	0.18	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.18	2.03	2.18	0.11	0.10	372.70
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	1	Scrapers	1.26	7.26	14.96	0.59	0.55	1608.32
0.00	28	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Tractors/Loaders/Backhoes	0.90	4.71	8.41	0.61	0.56	1005.66
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	4.7	26.5	45.0	2.6	2.4	5080.4
	Drainage	tons per phase	0.8	4.7	8.0	0.5	0.4	905.3

Paving	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.30	2.84	3.11	0.15	0.14	482.16
	1	Paving Equipment	0.22	2.69	2.30	0.11	0.10	426.29
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.49	3.02	4.58	0.31	0.28	558.87
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	28	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Tractors/Loaders/Backhoes	0.76	4.70	7.27	0.49	0.45	1004.55
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	1.8	13.3	17.3	1.1	1.0	2471.9
	Paving	tons per phase	0.2	1.2	1.5	0.1	0.1	220.2
Total Emissions all Phases (tons per construction period) =>			3.7	19.0	38.7	2.0	1.9	3826.8

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

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

0

END OF DATA ENTRY SHEET

Appendix E

Carbon Monoxide Hot-Spot Analysis

```
SPRINGDALE AND WESTMINISTER
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
193 163 1230 1230 429 139 35 35 2406 2383 1400 1400 554 554 917 917 30 290 23 0
1.29 2.64 2.64 1.29 1.29 2.64 2.19 1.29 1.29 2.64 1.57 1.29 1.29 2.19 1.57 1.29 2.64 2.64 1.83 1.83
0 0.5 7 1000 5 0 15.6
BEACH BLVD AND I-405SBRAMPS
```

```
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
2353 2353 3308 3308 2586 2586 3620 3620 1642 1205 334 334 681 681 0 0 0 0 437 0
1.29 2.64 1.83 1.29 1.29 2.64 1.83 1.29 1.29 2.64 1.57 1.29 1.29 2.64 1.57 1.29 1.83 1.83 2.64 2.64
0 0.5 7 1000 5 0 15.6

End of Input file
```

```
=====================================================
*****************************************************
=====================================================
BEACH BOULEVARD AND MCFADDEN AVENUE
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
3075 2881 3262 3262 3119 2924 3100 3100 1090 716 1042 1042 784 438 664 664 194 195 374 346
```

```
1.29 2.64 1.57 1.29 1.29 2.64 1.57 1.29 1.29 2.64 2.64 1.29 1.29 2.64 2.64 1.29 1.83 1.83 2.64 2.64
0 0.5 7 1000 5 0 15.6

End of Input file
=====================================================
*****************************************************
=====================================================
BRISTOL STREET AND I-405 NB OFF RAMP
1Carbon Monoxide
100       28      0       0       8       20      0.3048  1       1       0       0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25        25      6
25        -25     6
-25       -25     6
-25       25      6
38        38      6
38        -38     6
-38       -38     6
-38       38      6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1         7.5     -1500   7.5     -500    0       33      0       0       0
1         7.5     -500    7.5     0       0       33      0       0       0
1         7.5     0       7.5     500     0       33      0       0       0
1         7.5     500     7.5     1500    0       33      0       0       0
1         -7.5    1500    -7.5    500     0       33      0       0       0
1         -7.5    500     -7.5    0       0       33      0       0       0
1         -7.5    0       -7.5    -500    0       33      0       0       0
1         -7.5    -500    -7.5    -1500   0       33      0       0       0
1         1500    7.5     500     7.5     0       33      0       0       0
1         500     7.5     0       7.5     0       33      0       0       0
1         0       7.5     -500    7.5     0       33      0       0       0
1         -500    7.5     -1500   7.5     0       33      0       0       0
1         -1500   -7.5    -500    -7.5    0       33      0       0       0
1         -500    -7.5    0       -7.5    0       33      0       0       0
1         0       -7.5    500     -7.5    0       33      0       0       0
1         500     -7.5    1500    -7.5    0       33      0       0       0
1         0       0       7.5     -500    0       33      0       0       0
1         0       0       -7.5    500     0       33      0       0       0
```

```
1         0       0       500     7.5     0       33      0       0       0
1         0       0       -500    -7.5    0       33      0       0       0
31111
2353      2353    3308    3308    2586    2586    3620    3620    1642    1205    334     334     681     681
0       0       0       0       437     0
1.29      2.64    1.83    1.29    1.29    2.64    1.83    1.29    1.29    2.64    1.57    1.29    1.29    2.64
1.57    1.29    1.83    1.83    2.64    2.64
0.000000E+00    5.000000E-01           7        1000.00       5.000000
0.000000E+00       0.500000       7       1000.00       5.000000       0.000000       15.600000

End of Input file
====================================================
****************************************************
====================================================
EUCLID STREET AND I-405 RAMP
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
End of Input file
====================================================
****************************************************
====================================================
GOLDENWESTST AND BOLSA AVE
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
```

```
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
917 751 1440 1440 1242 1242 2406 2406 712 282 668 668 2097 1202 454 454 166 0 430 895
1.29 2.64 2.64 1.29 1.29 2.64 2.64 1.29 1.29 2.19 1.57 1.29 1.29 2.64 1.57 1.29 2.19 2.19 2.19 2.64
0 0.5 7 1000 5 0 15.6

SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
```

```
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
917 751 1440 1440 1242 1242 2406 2406 712 282 668 668 2097 1202 454 454 166 0 430 895
1.29 2.64 2.64 1.29 1.29 2.64 2.64 1.29 1.29 2.19 1.57 1.29 1.29 2.64 1.57 1.29 2.19 2.19 2.19 2.64
0 0.5 7 1000 5 0 15.6

End of Input file
====================================================
****************************************************
====================================================
I-405SB RAMP AND ELLIS AVE
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
```

```
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
193 163 1230 1230 429 139 35 35 2406 2383 1400 1400 554 554 917 917 30 290 23 0
1.29 2.64 2.64 1.29 1.29 2.64 2.19 1.29 1.29 2.64 1.57 1.29 1.29 2.19 1.57 1.29 2.64 2.64 1.83 1.83
0 0.5 7 1000 5 0 15.6

End of Input file
=====================================================
*****************************************************
=====================================================
I-405 OFFRAMP AND GARDENGROVE
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
```

```
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
1389 1230 1440 1440 1585 1365 1457 1457 1931 1741 1948 1948 1694 1419 1754 1754 159 220 190 275
1.29 2.64 2.64 1.29 1.29 2.64 2.64 1.29 1.29 2.64 2.19 1.29 1.29 2.64 2.19 1.29 2.19 2.19 2.19 2.19
0 0.5 7 1000 5 0 15.6

End of Input file
=====================================================
*****************************************************
=====================================================

SEALBEACH BLVD AND I-405SBRAMPS
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
```

```
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
3075 2881 3262 3262 3119 2924 3100 3100 1090 716 1042 1042 784 438 664 664 194 195 374 346
1.29 2.64 1.57 1.29 1.29 2.64 1.57 1.29 1.29 2.64 2.64 1.29 1.29 2.64 2.64 1.29 1.83 1.83 2.64 2.64
0 0.5 7 1000 5 0 15.6

End of Input file
=====================================================
*****************************************************
=====================================================
MAGNOLIA STREET AND WARNER AVENU
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
```

```
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
1389 1230 1440 1440 1585 1365 1457 1457 1931 1741 1948 1948 1694 1419 1754 1754 159 220 190 275
1.29 2.64 2.64 1.29 1.29 2.64 2.64 1.29 1.29 2.64 2.19 1.29 1.29 2.64 2.19 1.29 2.19 2.19 2.19 2.19
0 0.5 7 1000 5 0 15.6
```

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

     JOB: SPRINGDALE AND WESTMINISTER
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=   0.5 M/S             Z0= 100. CM            ALT= 0.0 (M)
     BRG= WORST CASE            VD=  0.0 CM/S
    CLAS=     7 (G)             VS=  0.0 CM/S
    MIXH= 1000. M              AMB=  0.0 PPM
   SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (FT)  *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (FT)  (FT)
----------------*-------------------------*-----------------------------
A. NF           *     8 -1500     8  -500 *  AG    193   1.3    0.0  33.0
B. NA           *     8  -500     8     0 *  AG    163   2.6    0.0  33.0
C. ND           *     8     0     8   500 *  AG   1230   2.6    0.0  33.0
D. NE           *     8   500     8  1500 *  AG   1230   1.3    0.0  33.0
E. SF           *    -8  1500    -8   500 *  AG    429   1.3    0.0  33.0
F. SA           *    -8   500    -8     0 *  AG    139   2.6    0.0  33.0
G. SD           *    -8     0    -8  -500 *  AG     35   2.2    0.0  33.0
H. SE           *    -8  -500    -8 -1500 *  AG     35   1.3    0.0  33.0
I. WF           *  1500     8   500     8 *  AG   2406   1.3    0.0  33.0
J. WA           *   500     8     0     8 *  AG   2383   2.6    0.0  33.0
K. WD           *     0     8  -500     8 *  AG   1400   1.6    0.0  33.0
L. WE           *  -500     8 -1500     8 *  AG   1400   1.3    0.0  33.0
M. EF           * -1500    -8  -500    -8 *  AG    554   1.3    0.0  33.0
N. EA           *  -500    -8     0    -8 *  AG    554   2.2    0.0  33.0
O. ED           *     0    -8   500    -8 *  AG    917   1.6    0.0  33.0
P. EE           *   500    -8  1500    -8 *  AG    917   1.3    0.0  33.0
Q. NL           *     0     0     8  -500 *  AG     30   2.6    0.0  33.0
R. SL           *     0     0    -8   500 *  AG    290   2.6    0.0  33.0
S. WL           *     0     0   500     8 *  AG     23   1.8    0.0  33.0
T. EL           *     0     0  -500    -8 *  AG      0   1.8    0.0  33.0


EF


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

     JOB: SPRINGDALE AND WESTMINISTER
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


III.  RECEPTOR LOCATIONS

            *    COORDINATES (FT)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. NE3      *     25     25   6.0
2. SE3      *     25    -25   6.0
```

```
 3. SW3      *    -25    -25   6.0
 4. NW3      *    -25     25   6.0
 5. NE7      *     38     38   6.0
 6. SE7      *     38    -38   6.0
 7. SW7      *    -38    -38   6.0
 8. NW7      *    -38     38   6.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*-----------------------------------------
 1. NE3      *   95. *   1.4 *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 2. SE3      *  356. *   1.3 *  0.0  0.0  0.6  0.1  0.0  0.0  0.0  0.0
 3. SW3      *   84. *   0.9 *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 4. NW3      *   94. *   1.6 *  0.0  0.0  0.2  0.0  0.0  0.0  0.0  0.0
 5. NE7      *   97. *   0.7 *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 6. SE7      *  353. *   0.9 *  0.0  0.0  0.4  0.0  0.0  0.0  0.0  0.0
 7. SW7      *   82. *   0.6 *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 8. NW7      *   97. *   1.0 *  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0


FF

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

               JOB: SPRINGDALE AND WESTMINISTER
               RUN:                  (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


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

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*-------------------------------------------------------------
 1. NE3      *  0.1  1.2  0.0  0.0  0.0  0.0  0.1  0.1  0.0  0.0  0.0  0.0
 2. SE3      *  0.0  0.3  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.1  0.0  0.0
 3. SW3      *  0.1  0.5  0.0  0.0  0.0  0.0  0.3  0.0  0.0  0.0  0.0  0.0
 4. NW3      *  0.1  1.0  0.0  0.0  0.0  0.0  0.1  0.1  0.0  0.0  0.0  0.0
 5. NE7      *  0.0  0.6  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0
 6. SE7      *  0.0  0.3  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.1  0.0  0.0
 7. SW7      *  0.0  0.4  0.0  0.0  0.0  0.0  0.2  0.0  0.0  0.0  0.0  0.0
 8. NW7      *  0.0  0.6  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0


FF

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

               JOB: BEACH BLVD AND I-405SBRAMPS
               RUN:                  (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES
```

```
          U=   0.5 M/S             Z0= 100. CM            ALT= 0.0 (M)
        BRG= WORST CASE            VD=  0.0 CM/S
       CLAS=     7 (G)             VS=  0.0 CM/S
       MIXH= 1000. M              AMB=  0.0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. NF	8	-1500	8	-500	AG	2353	1.3	0.0	33.0
B. NA	8	-500	8	0	AG	2353	2.6	0.0	33.0
C. ND	8	0	8	500	AG	3308	1.8	0.0	33.0
D. NE	8	500	8	1500	AG	3308	1.3	0.0	33.0
E. SF	-8	1500	-8	500	AG	2586	1.3	0.0	33.0
F. SA	-8	500	-8	0	AG	2586	2.6	0.0	33.0
G. SD	-8	0	-8	-500	AG	3620	1.8	0.0	33.0
H. SE	-8	-500	-8	-1500	AG	3620	1.3	0.0	33.0
I. WF	1500	8	500	8	AG	1642	1.3	0.0	33.0
J. WA	500	8	0	8	AG	1205	2.6	0.0	33.0
K. WD	0	8	-500	8	AG	334	1.6	0.0	33.0
L. WE	-500	8	-1500	8	AG	334	1.3	0.0	33.0
M. EF	-1500	-8	-500	-8	AG	681	1.3	0.0	33.0
N. EA	-500	-8	0	-8	AG	681	2.6	0.0	33.0
O. ED	0	-8	500	-8	AG	0	1.6	0.0	33.0
P. EE	500	-8	1500	-8	AG	0	1.3	0.0	33.0
Q. NL	0	0	8	-500	AG	0	1.8	0.0	33.0
R. SL	0	0	-8	500	AG	0	1.8	0.0	33.0
S. WL	0	0	500	8	AG	437	2.6	0.0	33.0
T. EL	0	0	-500	-8	AG	0	2.6	0.0	33.0

FF

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

              JOB: BEACH BLVD AND I-405SBRAMPS
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	* COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

```
            *       * PRED  *                CONC/LINK
            *  BRG  * CONC  *                  (PPM)
```

RECEPTOR	(DEG)	(PPM)	A	B	C	D	E	F	G	H
1. NE3	185.	2.1	0.0	1.0	0.2	0.0	0.0	0.0	0.5	0.1
2. SE3	354.	2.0	0.0	0.2	0.9	0.0	0.1	0.5	0.0	0.0
3. SW3	5.	2.0	0.0	0.0	0.4	0.1	0.1	1.1	0.2	0.0
4. NW3	175.	2.0	0.1	0.5	0.0	0.0	0.0	0.2	1.0	0.1
5. NE7	187.	1.3	0.0	0.6	0.0	0.0	0.0	0.0	0.4	0.1
6. SE7	352.	1.2	0.0	0.0	0.6	0.0	0.0	0.4	0.0	0.0
7. SW7	7.	1.2	0.0	0.0	0.3	0.1	0.0	0.6	0.0	0.0
8. NW7	172.	1.2	0.0	0.4	0.0	0.0	0.0	0.0	0.6	0.0

FF

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

     JOB: BEACH BLVD AND I-405SBRAMPS
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

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

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
2. SE3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
3. SW3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
4. NW3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
5. NE7	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
6. SE7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
7. SW7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
8. NW7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0

FF

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

     JOB: BEACH BOULEVARD AND MCFADDEN AVENUE
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=   0.5 M/S            Z0= 100. CM           ALT= 0.0 (M)
    BRG= WORST CASE           VD=  0.0 CM/S
   CLAS=     7 (G)            VS=  0.0 CM/S
   MIXH= 1000. M             AMB=  0.0 PPM
  SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)

A. NF	*	8	-1500	8	-500	*	AG	3075	1.3	0.0	33.0
B. NA	*	8	-500	8	0	*	AG	2881	2.6	0.0	33.0
C. ND	*	8	0	8	500	*	AG	3262	1.6	0.0	33.0
D. NE	*	8	500	8	1500	*	AG	3262	1.3	0.0	33.0
E. SF	*	-8	1500	-8	500	*	AG	3119	1.3	0.0	33.0
F. SA	*	-8	500	-8	0	*	AG	2924	2.6	0.0	33.0
G. SD	*	-8	0	-8	-500	*	AG	3100	1.6	0.0	33.0
H. SE	*	-8	-500	-8	-1500	*	AG	3100	1.3	0.0	33.0
I. WF	*	1500	8	500	8	*	AG	1090	1.3	0.0	33.0
J. WA	*	500	8	0	8	*	AG	716	2.6	0.0	33.0
K. WD	*	0	8	-500	8	*	AG	1042	2.6	0.0	33.0
L. WE	*	-500	8	-1500	8	*	AG	1042	1.3	0.0	33.0
M. EF	*	-1500	-8	-500	-8	*	AG	784	1.3	0.0	33.0
N. EA	*	-500	-8	0	-8	*	AG	438	2.6	0.0	33.0
O. ED	*	0	-8	500	-8	*	AG	664	2.6	0.0	33.0
P. EE	*	500	-8	1500	-8	*	AG	664	1.3	0.0	33.0
Q. NL	*	0	0	8	-500	*	AG	194	1.8	0.0	33.0
R. SL	*	0	0	-8	500	*	AG	195	1.8	0.0	33.0
S. WL	*	0	0	500	8	*	AG	374	2.6	0.0	33.0
T. EL	*	0	0	-500	-8	*	AG	346	2.6	0.0	33.0

FF

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

JOB: BEACH BOULEVARD AND MCFADDEN AVENUE
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	185.	2.2	0.1	1.2	0.1	0.0	0.0	0.0	0.3	0.1
2. SE3	354.	2.1	0.0	0.2	0.8	0.0	0.1	0.6	0.0	0.0
3. SW3	5.	2.2	0.0	0.0	0.4	0.1	0.1	1.2	0.1	0.0
4. NW3	174.	2.0	0.1	0.6	0.0	0.0	0.0	0.2	0.8	0.0
5. NE7	187.	1.3	0.0	0.7	0.0	0.0	0.0	0.0	0.3	0.1
6. SE7	352.	1.3	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0
7. SW7	7.	1.3	0.0	0.0	0.3	0.1	0.0	0.7	0.0	0.0
8. NW7	172.	1.2	0.0	0.5	0.0	0.0	0.0	0.0	0.4	0.0

FF

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

     JOB: BEACH BOULEVARD AND MCFADDEN AVENUE
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

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

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0
2. SE3	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0
3. SW3	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
4. NW3	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1
5. NE7	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
6. SE7	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
7. SW7	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
8. NW7	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0

FF

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

     JOB: EUCLID STREET AND I-405 RAMP
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=   0.5 M/S            Z0= 100. CM           ALT= 0.0 (M)
    BRG= WORST CASE           VD=  0.0 CM/S
   CLAS=     7 (G)            VS=  0.0 CM/S
   MIXH= 1000. M             AMB=  0.0 PPM
  SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. NF	8	-1500	8	-500	AG	917	1.3	0.0	33.0
B. NA	8	-500	8	0	AG	751	2.6	0.0	33.0
C. ND	8	0	8	500	AG	1440	2.6	0.0	33.0
D. NE	8	500	8	1500	AG	1440	1.3	0.0	33.0
E. SF	-8	1500	-8	500	AG	1242	1.3	0.0	33.0
F. SA	-8	500	-8	0	AG	1242	2.6	0.0	33.0
G. SD	-8	0	-8	-500	AG	2406	2.6	0.0	33.0
H. SE	-8	-500	-8	-1500	AG	2406	1.3	0.0	33.0
I. WF	1500	8	500	8	AG	712	1.3	0.0	33.0
J. WA	500	8	0	8	AG	282	2.2	0.0	33.0
K. WD	0	8	-500	8	AG	668	1.6	0.0	33.0
L. WE	-500	8	-1500	8	AG	668	1.3	0.0	33.0

M. EF	*	-1500	-8	-500	-8	*	AG	2097	1.3	0.0	33.0
N. EA	*	-500	-8	0	-8	*	AG	1202	2.6	0.0	33.0
O. ED	*	0	-8	500	-8	*	AG	454	1.6	0.0	33.0
P. EE	*	500	-8	1500	-8	*	AG	454	1.3	0.0	33.0
Q. NL	*	0	0	8	-500	*	AG	166	2.2	0.0	33.0
R. SL	*	0	0	-8	500	*	AG	0	2.2	0.0	33.0
S. WL	*	0	0	500	8	*	AG	430	2.2	0.0	33.0
T. EL	*	0	0	-500	-8	*	AG	895	2.6	0.0	33.0

FF

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

JOB: EUCLID STREET AND I-405 NB RAMPS
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	264.	1.4	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0
2. SE3	275.	1.6	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.0
3. SW3	6.	1.6	0.0	0.0	0.4	0.0	0.0	0.6	0.2	0.0
4. NW3	175.	1.8	0.0	0.2	0.0	0.0	0.0	0.1	1.0	0.0
5. NE7	262.	1.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
6. SE7	277.	1.1	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.0
7. SW7	7.	1.0	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0
8. NW7	173.	1.2	0.0	0.2	0.0	0.0	0.0	0.0	0.6	0.0

FF

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

JOB: EUCLID STREET AND I-405 NB RAMPS
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3
2. SE3	0.0	0.0	0.1	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.3
3. SW3	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
4. NW3	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.1
5. NE7	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2
6. SE7	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2
7. SW7	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
8. NW7	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1

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

              JOB: GOLDENWESTST AND BOLSA AVE
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

        U=   0.5 M/S             Z0= 100. CM            ALT= 0.0 (M)
      BRG= WORST CASE            VD=  0.0 CM/S
     CLAS=     7 (G)             VS=  0.0 CM/S
     MIXH= 1000. M              AMB=  0.0 PPM
    SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES
```

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. NF	8	-1500	8	-500	AG	917	1.3	0.0	33.0
B. NA	8	-500	8	0	AG	751	2.6	0.0	33.0
C. ND	8	0	8	500	AG	1440	2.6	0.0	33.0
D. NE	8	500	8	1500	AG	1440	1.3	0.0	33.0
E. SF	-8	1500	-8	500	AG	1242	1.3	0.0	33.0
F. SA	-8	500	-8	0	AG	1242	2.6	0.0	33.0
G. SD	-8	0	-8	-500	AG	2406	2.6	0.0	33.0
H. SE	-8	-500	-8	-1500	AG	2406	1.3	0.0	33.0
I. WF	1500	8	500	8	AG	712	1.3	0.0	33.0
J. WA	500	8	0	8	AG	282	2.2	0.0	33.0
K. WD	0	8	-500	8	AG	668	1.6	0.0	33.0
L. WE	-500	8	-1500	8	AG	668	1.3	0.0	33.0
M. EF	-1500	-8	-500	-8	AG	2097	1.3	0.0	33.0
N. EA	-500	-8	0	-8	AG	1202	2.6	0.0	33.0
O. ED	0	-8	500	-8	AG	454	1.6	0.0	33.0
P. EE	500	-8	1500	-8	AG	454	1.3	0.0	33.0
Q. NL	0	0	8	-500	AG	166	2.2	0.0	33.0
R. SL	0	0	-8	500	AG	0	2.2	0.0	33.0
S. WL	0	0	500	8	AG	430	2.2	0.0	33.0
T. EL	0	0	-500	-8	AG	895	2.6	0.0	33.0

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

      JOB: GOLDENWESTST AND BOLSA AVE
      RUN:                  (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	264.	1.4	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0
2. SE3	275.	1.6	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.0
3. SW3	6.	1.6	0.0	0.0	0.4	0.0	0.0	0.6	0.2	0.0
4. NW3	175.	1.8	0.0	0.2	0.0	0.0	0.0	0.1	1.0	0.0
5. NE7	262.	1.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
6. SE7	277.	1.1	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.0
7. SW7	7.	1.0	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0
8. NW7	173.	1.2	0.0	0.2	0.0	0.0	0.0	0.0	0.6	0.0

FF

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

      JOB: GOLDENWESTST AND BOLSA AVE
      RUN:                  (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide
```

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

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3
2. SE3	0.0	0.0	0.1	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.3
3. SW3	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
4. NW3	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.1
5. NE7	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2
6. SE7	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2
7. SW7	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1

```
 8. NW7      *  0.0  0.0  0.1  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0  0.1


FF

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

              JOB: I-405SB RAMP AND ELLIS AVE
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 100. CM            ALT= 0.0 (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (FT)  *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (FT)  (FT)
----------------*-------------------------*------------------------------
A. NF           *     8 -1500     8  -500 *  AG    193   1.3    0.0  33.0
B. NA           *     8  -500     8     0 *  AG    163   2.6    0.0  33.0
C. ND           *     8     0     8   500 *  AG   1230   2.6    0.0  33.0
D. NE           *     8   500     8  1500 *  AG   1230   1.3    0.0  33.0
E. SF           *    -8  1500    -8   500 *  AG    429   1.3    0.0  33.0
F. SA           *    -8   500    -8     0 *  AG    139   2.6    0.0  33.0
G. SD           *    -8     0    -8  -500 *  AG     35   2.2    0.0  33.0
H. SE           *    -8  -500    -8 -1500 *  AG     35   1.3    0.0  33.0
I. WF           *  1500     8   500     8 *  AG   2406   1.3    0.0  33.0
J. WA           *   500     8     0     8 *  AG   2383   2.6    0.0  33.0
K. WD           *     0     8  -500     8 *  AG   1400   1.6    0.0  33.0
L. WE           *  -500     8 -1500     8 *  AG   1400   1.3    0.0  33.0
M. EF           * -1500    -8  -500    -8 *  AG    554   1.3    0.0  33.0
N. EA           *  -500    -8     0    -8 *  AG    554   2.2    0.0  33.0
O. ED           *     0    -8   500    -8 *  AG    917   1.6    0.0  33.0
P. EE           *   500    -8  1500    -8 *  AG    917   1.3    0.0  33.0
Q. NL           *     0     0     8  -500 *  AG     30   2.6    0.0  33.0
R. SL           *     0     0    -8   500 *  AG    290   2.6    0.0  33.0
S. WL           *     0     0   500     8 *  AG     23   1.8    0.0  33.0
T. EL           *     0     0  -500    -8 *  AG      0   1.8    0.0  33.0


FF

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

              JOB: I-405SB RAMPS AND ELLIS AVE
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

            *    COORDINATES (FT)
```

RECEPTOR	X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	95.	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2. SE3	356.	1.3	0.0	0.0	0.6	0.1	0.0	0.0	0.0	0.0
3. SW3	84.	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. NW3	94.	1.6	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
5. NE7	97.	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. SE7	353.	0.9	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
7. SW7	82.	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8. NW7	97.	1.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0

FF

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

JOB: I-405SB RAMPS AND ELLIS AVE
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.1	1.2	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
2. SE3	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
3. SW3	0.1	0.5	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
4. NW3	0.1	1.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
5. NE7	0.0	0.6	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
6. SE7	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
7. SW7	0.0	0.4	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
8. NW7	0.0	0.6	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0

FF

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

JOB: I-405 OFFRAMP AND GARDENGROVE
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
      U=   0.5 M/S            Z0= 100. CM           ALT= 0.0 (M)
    BRG= WORST CASE           VD=  0.0 CM/S
   CLAS=     7 (G)            VS=  0.0 CM/S
   MIXH= 1000. M             AMB=  0.0 PPM
  SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. NF	8	-1500	8	-500	AG	1389	1.3	0.0	33.0
B. NA	8	-500	8	0	AG	1230	2.6	0.0	33.0
C. ND	8	0	8	500	AG	1440	2.6	0.0	33.0
D. NE	8	500	8	1500	AG	1440	1.3	0.0	33.0
E. SF	-8	1500	-8	500	AG	1585	1.3	0.0	33.0
F. SA	-8	500	-8	0	AG	1365	2.6	0.0	33.0
G. SD	-8	0	-8	-500	AG	1457	2.6	0.0	33.0
H. SE	-8	-500	-8	-1500	AG	1457	1.3	0.0	33.0
I. WF	1500	8	500	8	AG	1931	1.3	0.0	33.0
J. WA	500	8	0	8	AG	1741	2.6	0.0	33.0
K. WD	0	8	-500	8	AG	1948	2.2	0.0	33.0
L. WE	-500	8	-1500	8	AG	1948	1.3	0.0	33.0
M. EF	-1500	-8	-500	-8	AG	1694	1.3	0.0	33.0
N. EA	-500	-8	0	-8	AG	1419	2.6	0.0	33.0
O. ED	0	-8	500	-8	AG	1754	2.2	0.0	33.0
P. EE	500	-8	1500	-8	AG	1754	1.3	0.0	33.0
Q. NL	0	0	8	-500	AG	159	2.2	0.0	33.0
R. SL	0	0	-8	500	AG	220	2.2	0.0	33.0
S. WL	0	0	500	8	AG	190	2.2	0.0	33.0
T. EL	0	0	-500	-8	AG	275	2.2	0.0	33.0

EF

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

     JOB: I-405NBOFFRAMP AND GARDENGROVE
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	265.	1.9	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0
2. SE3	355.	1.8	0.0	0.1	0.7	0.0	0.1	0.3	0.0	0.0
3. SW3	85.	1.8	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0
4. NW3	95.	1.9	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
5. NE7	262.	1.2	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
6. SE7	352.	1.2	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0
7. SW7	82.	1.2	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
8. NW7	97.	1.2	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0

FF

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

JOB: I-405NBOFFRAMP AND GARDENGROVE
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.0	0.1	0.7	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.1
2. SE3	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0
3. SW3	0.1	0.4	0.0	0.0	0.0	0.1	0.7	0.0	0.0	0.0	0.1	0.0
4. NW3	0.0	0.8	0.1	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.0
5. NE7	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1
6. SE7	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
7. SW7	0.0	0.3	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.0
8. NW7	0.0	0.5	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0

FF

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

JOB: MAGNOLIA STREET AND WARNER AVENU
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0.0 (M)
BRG= WORST CASE VD= 0.0 CM/S
CLAS= 7 (G) VS= 0.0 CM/S
MIXH= 1000. M AMB= 0.0 PPM
SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. NF	8	-1500	8	-500	AG	1389	1.3	0.0	33.0
B. NA	8	-500	8	0	AG	1230	2.6	0.0	33.0
C. ND	8	0	8	500	AG	1440	2.6	0.0	33.0
D. NE	8	500	8	1500	AG	1440	1.3	0.0	33.0
E. SF	-8	1500	-8	500	AG	1585	1.3	0.0	33.0
F. SA	-8	500	-8	0	AG	1365	2.6	0.0	33.0
G. SD	-8	0	-8	-500	AG	1457	2.6	0.0	33.0
H. SE	-8	-500	-8	-1500	AG	1457	1.3	0.0	33.0
I. WF	1500	8	500	8	AG	1931	1.3	0.0	33.0
J. WA	500	8	0	8	AG	1741	2.6	0.0	33.0
K. WD	0	8	-500	8	AG	1948	2.2	0.0	33.0
L. WE	-500	8	-1500	8	AG	1948	1.3	0.0	33.0
M. EF	-1500	-8	-500	-8	AG	1694	1.3	0.0	33.0
N. EA	-500	-8	0	-8	AG	1419	2.6	0.0	33.0
O. ED	0	-8	500	-8	AG	1754	2.2	0.0	33.0
P. EE	500	-8	1500	-8	AG	1754	1.3	0.0	33.0
Q. NL	0	0	8	-500	AG	159	2.2	0.0	33.0
R. SL	0	0	-8	500	AG	220	2.2	0.0	33.0
S. WL	0	0	500	8	AG	190	2.2	0.0	33.0
T. EL	0	0	-500	-8	AG	275	2.2	0.0	33.0

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

JOB: MAGNOLIA STREET AND WARNER AVENU
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	265.	1.9	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0
2. SE3	355.	1.8	0.0	0.1	0.7	0.0	0.1	0.3	0.0	0.0
3. SW3	85.	1.8	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0
4. NW3	95.	1.9	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
5. NE7	262.	1.2	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
6. SE7	352.	1.2	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0

7. SW7	*	82.	*	1.2	*	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
8. NW7	*	97.	*	1.2	*	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0

FF

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

              JOB: MAGNOLIA STREET AND WARNER AVENU
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

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

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
	*	CONC/LINK (PPM)											
1. NE3	*	0.0	0.1	0.7	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.1
2. SE3	*	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0
3. SW3	*	0.1	0.4	0.0	0.0	0.0	0.1	0.7	0.0	0.0	0.0	0.1	0.0
4. NW3	*	0.0	0.8	0.1	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.0
5. NE7	*	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1
6. SE7	*	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
7. SW7	*	0.0	0.3	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.0
8. NW7	*	0.0	0.5	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0

FF

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

              JOB: SEALBEACH BLVD AND I-405SBRAMPS
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
        U=   0.5 M/S             Z0= 100. CM            ALT= 0.0 (M)
      BRG= WORST CASE            VD=  0.0 CM/S
     CLAS=     7 (G)             VS=  0.0 CM/S
     MIXH= 1000. M              AMB=  0.0 PPM
    SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. NF	*	8	-1500	8	-500	*	AG	3075	1.3	0.0	33.0
B. NA	*	8	-500	8	0	*	AG	2881	2.6	0.0	33.0
C. ND	*	8	0	8	500	*	AG	3262	1.6	0.0	33.0
D. NE	*	8	500	8	1500	*	AG	3262	1.3	0.0	33.0
E. SF	*	-8	1500	-8	500	*	AG	3119	1.3	0.0	33.0
F. SA	*	-8	500	-8	0	*	AG	2924	2.6	0.0	33.0
G. SD	*	-8	0	-8	-500	*	AG	3100	1.6	0.0	33.0
H. SE	*	-8	-500	-8	-1500	*	AG	3100	1.3	0.0	33.0

I. WF	*	1500	8	500	8	*	AG	1090	1.3	0.0	33.0
J. WA	*	500	8	0	8	*	AG	716	2.6	0.0	33.0
K. WD	*	0	8	-500	8	*	AG	1042	2.6	0.0	33.0
L. WE	*	-500	8	-1500	8	*	AG	1042	1.3	0.0	33.0
M. EF	*	-1500	-8	-500	-8	*	AG	784	1.3	0.0	33.0
N. EA	*	-500	-8	0	-8	*	AG	438	2.6	0.0	33.0
O. ED	*	0	-8	500	-8	*	AG	664	2.6	0.0	33.0
P. EE	*	500	-8	1500	-8	*	AG	664	1.3	0.0	33.0
Q. NL	*	0	0	8	-500	*	AG	194	1.8	0.0	33.0
R. SL	*	0	0	-8	500	*	AG	195	1.8	0.0	33.0
S. WL	*	0	0	500	8	*	AG	374	2.6	0.0	33.0
T. EL	*	0	0	-500	-8	*	AG	346	2.6	0.0	33.0

FF

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

              JOB: SEALBEACH BLVD AND I-405SBRAMPS
              RUN:                  (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	185.	2.2	0.1	1.2	0.1	0.0	0.0	0.0	0.3	0.1
2. SE3	354.	2.1	0.0	0.2	0.8	0.0	0.1	0.6	0.0	0.0
3. SW3	5.	2.2	0.0	0.0	0.4	0.1	0.1	1.2	0.1	0.0
4. NW3	174.	2.0	0.1	0.6	0.0	0.0	0.0	0.2	0.8	0.0
5. NE7	187.	1.3	0.0	0.7	0.0	0.0	0.0	0.0	0.3	0.1
6. SE7	352.	1.3	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0
7. SW7	7.	1.3	0.0	0.0	0.3	0.1	0.0	0.7	0.0	0.0
8. NW7	172.	1.2	0.0	0.5	0.0	0.0	0.0	0.0	0.4	0.0

FF

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

              JOB: SEALBEACH BLVD AND I-405SBRAMPS
              RUN:                  (WORST CASE ANGLE)
```

POLLUTANT: Carbon Monoxide

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

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0
2. SE3	*	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0
3. SW3	*	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
4. NW3	*	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1
5. NE7	*	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
6. SE7	*	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
7. SW7	*	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
8. NW7	*	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0

FF

```
I-405NBOFFRAMP AND GARDENGROVE
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
1297 300 1391 1391 503 369 0 0 458 458 1734 1734 1564 493 697 697 997 134 0 1071
0.81 1.36 1.62 0.81 0.81 1.62 0.97 0.81 0.81 1.36 1.62 0.81 0.81 1.36 0.97 0.81 1.62 1.36 1.36 1.62
0 0.5 7 1000 5 0 15.6
```

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End of File
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MAGNOLIA STREET AND WARNER AVENU
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
```

```
31101
1554 1388 1686 1686 1777 1492 1563 1563 2153 1950 2167 2167 1766 1424 1834 1834 166 285 203 342
0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 1.36 1.36 1.36 1.36
0 0.5 7 1000 5 0 15.6

End of File
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SEALBEACH BLVD AND I-405SBRAMPS
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
```

```
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
2318 2308 2705 2705 2379 1744 2244 2244 1343 752 161 161 240 79 1170 1170 10 635 591 161
0.81 1.62 0.97 0.81 0.81 1.62 0.97 0.81 0.81 1.62 0.97 0.81 0.81 1.62 1.62 0.81 1.13 1.36 1.62 1.62
0 0.5 7 1000 5 0 15.6

End of File
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SPRINGDALE AND WESTMINISTER
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
```

```
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
1523 1347 1150 1150 1654 1062 1359 1359 1646 1328 1225 1225 1543 1343 2632 2632 176 592 318 200
0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 1.36 1.62 1.36 1.36
0 0.5 7 1000 5 0 15.6

End of File
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BEACH BLVD AND I-405SBRAMPS
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
```

```
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
3071 3071 3532 3532 3849 3849 4089 4089 0 0 989 989 1690 1229 0 0 0 0 0 461
0.81 1.62 0.97 0.81 0.81 1.62 0.97 0.81 0.81 1.62 1.62 0.81 0.81 1.62 1.13 0.81 1.13 1.13 1.62 1.62
0 0.5 7 1000 5 0 15.6

End of File
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BEACH BOULEVARD AND MCFADDEN AVENUE
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
```

```
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
3437 3211 3587 3587 3370 3167 3370 3370 1148 746 1109 1109 838 477 727 727 226 203 402 361
0.81 1.62 0.97 0.81 0.81 1.62 0.97 0.81 0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 1.13 1.13 1.62 1.62
0 0.5 7 1000 5 0 15.6

End of File
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BRISTOL STREET AND I-405 NB OFF RAMP
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
```

```
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
2437 2437 3456 3456 2820 2820 3976 3976 1841 1300 375 375 709 709 0 0 0 0 541 0
0.81 1.62 1.13 0.81 0.81 1.62 1.13 0.81 0.81 1.62 1.13 0.81 0.81 1.62 0.97 0.81 1.13 1.13 1.62 1.62
0 0.5 7 1000 5 0 15.6

End of File
==============================================
**********************************************
==============================================

EUCLID STREET AND I-405 NB RAMPS
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
SA
SD
SE
WF
WA
```

```
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
1052 867 1647 1647 1420 1420 2724 2724 743 294 714 714 2395 1369 525 525 185 0 449 1026
0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 0.81 1.36 0.97 0.81 0.81 1.62 0.97 0.81 1.36 1.36 1.36 1.62
0 0.5 7 1000 5 0 15.6

End of File
==============================================
**********************************************
==============================================

GOLDENWESTST AND BOLSA AVE
1Carbon Monoxide
100 28 0 0 8 20 0.3048 1 1 0
NE3
SE3
SW3
NW3
NE7
SE7
SW7
NW7
25 25 6
25 -25 6
-25 -25 6
-25 25 6
38 38 6
38 -38 6
-38 -38 6
-38 38 6
NF
NA
ND
NE
SF
```

```
SA
SD
SE
WF
WA
WD
WE
EF
EA
ED
EE
NL
SL
WL
EL
1 7.5 -1500 7.5 -500 0 33 0 0 0
1 7.5 -500 7.5 0 0 33 0 0 0
1 7.5 0 7.5 500 0 33 0 0 0
1 7.5 500 7.5 1500 0 33 0 0 0
1 -7.5 1500 -7.5 500 0 33 0 0 0
1 -7.5 500 -7.5 0 0 33 0 0 0
1 -7.5 0 -7.5 -500 0 33 0 0 0
1 -7.5 -500 -7.5 -1500 0 33 0 0 0
1 1500 7.5 500 7.5 0 33 0 0 0
1 500 7.5 0 7.5 0 33 0 0 0
1 0 7.5 -500 7.5 0 33 0 0 0
1 -500 7.5 -1500 7.5 0 33 0 0 0
1 -1500 -7.5 -500 -7.5 0 33 0 0 0
1 -500 -7.5 0 -7.5 0 33 0 0 0
1 0 -7.5 500 -7.5 0 33 0 0 0
1 500 -7.5 1500 -7.5 0 33 0 0 0
1 0 0 7.5 -500 0 33 0 0 0
1 0 0 -7.5 500 0 33 0 0 0
1 0 0 500 7.5 0 33 0 0 0
1 0 0 -500 -7.5 0 33 0 0 0
31101
2011 1773 2285 2285 1473 1335 1926 1926 2025 1480 1175 1175 1867 1606 1990 1990 238 138 545 261
0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 0.81 1.62 1.62 0.81 1.36 1.36 1.36 1.36
0 0.5 7 1000 5 0 15.6
```

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

              JOB: GOLDENWESTST AND BOLSA AVE
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

        U=   0.5 M/S             Z0= 100. CM            ALT= 0.0 (M)
      BRG= WORST CASE            VD=  0.0 CM/S
     CLAS=     7 (G)             VS=  0.0 CM/S
     MIXH= 1000. M              AMB=  0.0 PPM
    SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (FT)  *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (FT)  (FT)
----------------*-------------------------*------------------------------
A. NF           *     8 -1500     8  -500 *  AG   2011   0.8    0.0  33.0
B. NA           *     8  -500     8     0 *  AG   1773   1.6    0.0  33.0
C. ND           *     8     0     8   500 *  AG   2285   1.6    0.0  33.0
D. NE           *     8   500     8  1500 *  AG   2285   0.8    0.0  33.0
E. SF           *    -8  1500    -8   500 *  AG   1473   0.8    0.0  33.0
F. SA           *    -8   500    -8     0 *  AG   1335   1.6    0.0  33.0
G. SD           *    -8     0    -8  -500 *  AG   1926   1.6    0.0  33.0
H. SE           *    -8  -500    -8 -1500 *  AG   1926   0.8    0.0  33.0
I. WF           *  1500     8   500     8 *  AG   2025   0.8    0.0  33.0
J. WA           *   500     8     0     8 *  AG   1480   1.6    0.0  33.0
K. WD           *     0     8  -500     8 *  AG   1175   1.6    0.0  33.0
L. WE           *  -500     8 -1500     8 *  AG   1175   0.8    0.0  33.0
M. EF           * -1500    -8  -500    -8 *  AG   1867   0.8    0.0  33.0
N. EA           *  -500    -8     0    -8 *  AG   1606   1.6    0.0  33.0
O. ED           *     0    -8   500    -8 *  AG   1990   1.6    0.0  33.0
P. EE           *   500    -8  1500    -8 *  AG   1990   0.8    0.0  33.0
Q. NL           *     0     0     8  -500 *  AG    238   1.4    0.0  33.0
R. SL           *     0     0    -8   500 *  AG    138   1.4    0.0  33.0
S. WL           *     0     0   500     8 *  AG    545   1.4    0.0  33.0
T. EL           *     0     0  -500    -8 *  AG    261   1.4    0.0  33.0


FF


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

              JOB: GOLDENWESTST AND BOLSA AVE
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

            *    COORDINATES (FT)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. NE3      *     25     25   6.0
2. SE3      *     25    -25   6.0
```

3. SW3	*	-25	-25	6.0
4. NW3	*	-25	25	6.0
5. NE7	*	38	38	6.0
6. SE7	*	38	-38	6.0
7. SW7	*	-38	-38	6.0
8. NW7	*	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	186.	1.3	0.0	0.5	0.1	0.0	0.0	0.0	0.3	0.0
2. SE3	355.	1.4	0.0	0.1	0.6	0.0	0.0	0.2	0.0	0.0
3. SW3	85.	1.4	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
4. NW3	95.	1.3	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
5. NE7	188.	0.9	0.0	0.3	0.0	0.0	0.0	0.0	0.2	0.0
6. SE7	352.	0.9	0.0	0.0	0.4	0.0	0.0	0.2	0.0	0.0
7. SW7	82.	0.9	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
8. NW7	98.	0.9	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0

FF

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

JOB: GOLDENWESTST AND BOLSA AVE
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0
2. SE3	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
3. SW3	0.0	0.2	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.0	0.1	0.0
4. NW3	0.0	0.4	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0
5. NE7	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
6. SE7	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
7. SW7	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0
8. NW7	0.0	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0

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

JOB: I-405SB RAMPS AND ELLIS AVE
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0.0 (M)
BRG= WORST CASE VD= 0.0 CM/S

```
       CLAS=     7 (G)             VS=  0.0 CM/S
       MIXH= 1000. M              AMB=  0.0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. NF	8	-1500	8	-500	AG	211	0.8	0.0	33.0
B. NA	8	-500	8	0	AG	179	1.6	0.0	33.0
C. ND	8	0	8	500	AG	1433	1.6	0.0	33.0
D. NE	8	500	8	1500	AG	1433	0.8	0.0	33.0
E. SF	-8	1500	-8	500	AG	504	0.8	0.0	33.0
F. SA	-8	500	-8	0	AG	166	1.6	0.0	33.0
G. SD	-8	0	-8	-500	AG	46	1.1	0.0	33.0
H. SE	-8	-500	-8	-1500	AG	46	0.8	0.0	33.0
I. WF	1500	8	500	8	AG	2724	0.8	0.0	33.0
J. WA	500	8	0	8	AG	2692	1.6	0.0	33.0
K. WD	0	8	-500	8	AG	1548	1.0	0.0	33.0
L. WE	-500	8	-1500	8	AG	1548	0.8	0.0	33.0
M. EF	-1500	-8	-500	-8	AG	640	0.8	0.0	33.0
N. EA	-500	-8	0	-8	AG	640	1.4	0.0	33.0
O. ED	0	-8	500	-8	AG	1052	1.0	0.0	33.0
P. EE	500	-8	1500	-8	AG	1052	0.8	0.0	33.0
Q. NL	0	0	8	-500	AG	32	1.6	0.0	33.0
R. SL	0	0	-8	500	AG	338	1.6	0.0	33.0
S. WL	0	0	500	8	AG	32	1.1	0.0	33.0
T. EL	0	0	-500	-8	AG	0	1.1	0.0	33.0

FF

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

              JOB: I-405SB RAMPS AND ELLIS AVE
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H

```
 1. NE3      *   95. *   1.0 *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 2. SE3      *  355. *   0.9 *  0.0  0.0  0.4  0.0  0.0  0.0  0.0  0.0
 3. SW3      *   84. *   0.6 *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 4. NW3      *   95. *   1.1 *  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0
 5. NE7      *   97. *   0.5 *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 6. SE7      *  353. *   0.6 *  0.0  0.0  0.3  0.0  0.0  0.0  0.0  0.0
 7. SW7      *   82. *   0.4 *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 8. NW7      *   97. *   0.7 *  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0


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

              JOB: I-405SB RAMPS AND ELLIS AVE
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


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

            *                         CONC/LINK
            *                           (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*-------------------------------------------------------------
 1. NE3     *  0.0  0.8  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0
 2. SE3     *  0.0  0.2  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.1  0.0  0.0
 3. SW3     *  0.0  0.3  0.0  0.0  0.0  0.0  0.2  0.0  0.0  0.0  0.0  0.0
 4. NW3     *  0.0  0.7  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0
 5. NE7     *  0.0  0.4  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0
 6. SE7     *  0.0  0.2  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.1  0.0  0.0
 7. SW7     *  0.0  0.3  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0
 8. NW7     *  0.0  0.4  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0


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

              JOB: I-405NBOFFRAMP AND GARDENGROVE
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 100. CM            ALT= 0.0 (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (FT)  *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (FT)  (FT)
----------------*-------------------------*-----------------------------
 A. NF          *     8 -1500     8  -500 *  AG   1297   0.8    0.0  33.0
 B. NA          *     8  -500     8     0 *  AG    300   1.4    0.0  33.0
```

C. ND	*	8	0	8	500	*	AG	1391	1.6	0.0	33.0
D. NE	*	8	500	8	1500	*	AG	1391	0.8	0.0	33.0
E. SF	*	-8	1500	-8	500	*	AG	503	0.8	0.0	33.0
F. SA	*	-8	500	-8	0	*	AG	369	1.6	0.0	33.0
G. SD	*	-8	0	-8	-500	*	AG	0	1.0	0.0	33.0
H. SE	*	-8	-500	-8	-1500	*	AG	0	0.8	0.0	33.0
I. WF	*	1500	8	500	8	*	AG	458	0.8	0.0	33.0
J. WA	*	500	8	0	8	*	AG	458	1.4	0.0	33.0
K. WD	*	0	8	-500	8	*	AG	1734	1.6	0.0	33.0
L. WE	*	-500	8	-1500	8	*	AG	1734	0.8	0.0	33.0
M. EF	*	-1500	-8	-500	-8	*	AG	1564	0.8	0.0	33.0
N. EA	*	-500	-8	0	-8	*	AG	493	1.4	0.0	33.0
O. ED	*	0	-8	500	-8	*	AG	697	1.0	0.0	33.0
P. EE	*	500	-8	1500	-8	*	AG	697	0.8	0.0	33.0
Q. NL	*	0	0	8	-500	*	AG	997	1.6	0.0	33.0
R. SL	*	0	0	-8	500	*	AG	134	1.4	0.0	33.0
S. WL	*	0	0	500	8	*	AG	0	1.4	0.0	33.0
T. EL	*	0	0	-500	-8	*	AG	1071	1.6	0.0	33.0

FF

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

              JOB: I-405NBOFFRAMP AND GARDENGROVE
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	265.	1.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
2. SE3	276.	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. SW3	5.	0.7	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
4. NW3	264.	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. NE7	262.	0.7	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
6. SE7	277.	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7. SW7	7.	0.5	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
8. NW7	262.	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

FF

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

     JOB: I-405NBOFFRAMP AND GARDENGROVE
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

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

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.0	0.0	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
2. SE3	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.2
3. SW3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
4. NW3	0.0	0.0	0.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
5. NE7	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
6. SE7	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.2
7. SW7	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
8. NW7	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1

FF

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

     JOB: MAGNOLIA STREET AND WARNER AVENU
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
   U=   0.5 M/S            Z0= 100. CM           ALT= 0.0 (M)
 BRG= WORST CASE           VD=  0.0 CM/S
CLAS=     7 (G)            VS=  0.0 CM/S
MIXH= 1000. M             AMB=  0.0 PPM
SIGTH=    5. DEGREES     TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. NF	8	-1500	8	-500	AG	1554	0.8	0.0	33.0
B. NA	8	-500	8	0	AG	1388	1.6	0.0	33.0
C. ND	8	0	8	500	AG	1686	1.6	0.0	33.0
D. NE	8	500	8	1500	AG	1686	0.8	0.0	33.0
E. SF	-8	1500	-8	500	AG	1777	0.8	0.0	33.0
F. SA	-8	500	-8	0	AG	1492	1.6	0.0	33.0
G. SD	-8	0	-8	-500	AG	1563	1.6	0.0	33.0
H. SE	-8	-500	-8	-1500	AG	1563	0.8	0.0	33.0
I. WF	1500	8	500	8	AG	2153	0.8	0.0	33.0
J. WA	500	8	0	8	AG	1950	1.6	0.0	33.0
K. WD	0	8	-500	8	AG	2167	1.6	0.0	33.0
L. WE	-500	8	-1500	8	AG	2167	0.8	0.0	33.0
M. EF	-1500	-8	-500	-8	AG	1766	0.8	0.0	33.0
N. EA	-500	-8	0	-8	AG	1424	1.6	0.0	33.0

```
 O. ED          *     0    -8   500    -8 *  AG   1834   1.6    0.0  33.0
 P. EE          *   500    -8  1500    -8 *  AG   1834   0.8    0.0  33.0
 Q. NL          *     0     0     8  -500 *  AG    166   1.4    0.0  33.0
 R. SL          *     0     0    -8   500 *  AG    285   1.4    0.0  33.0
 S. WL          *     0     0   500     8 *  AG    203   1.4    0.0  33.0
 T. EL          *     0     0  -500    -8 *  AG    342   1.4    0.0  33.0
```

FF

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

              JOB: MAGNOLIA STREET AND WARNER AVENU
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

            *    COORDINATES (FT)
  RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3     *     25     25   6.0
 2. SE3     *     25    -25   6.0
 3. SW3     *    -25    -25   6.0
 4. NW3     *    -25     25   6.0
 5. NE7     *     38     38   6.0
 6. SE7     *     38    -38   6.0
 7. SW7     *    -38    -38   6.0
 8. NW7     *    -38     38   6.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *                CONC/LINK
            *  BRG  * CONC  *                  (PPM)
  RECEPTOR  * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3     *  265. *   1.3 *  0.0  0.0  0.2  0.0  0.0  0.1  0.0  0.0
 2. SE3     *  355. *   1.3 *  0.0  0.1  0.5  0.0  0.0  0.2  0.0  0.0
 3. SW3     *   85. *   1.2 *  0.0  0.1  0.0  0.0  0.0  0.0  0.2  0.0
 4. NW3     *   95. *   1.3 *  0.0  0.0  0.1  0.0  0.0  0.2  0.0  0.0
 5. NE7     *  262. *   0.9 *  0.0  0.0  0.1  0.0  0.0  0.1  0.0  0.0
 6. SE7     *  352. *   0.8 *  0.0  0.0  0.3  0.0  0.0  0.2  0.0  0.0
 7. SW7     *   82. *   0.8 *  0.0  0.1  0.0  0.0  0.0  0.0  0.1  0.0
 8. NW7     *   98. *   0.8 *  0.0  0.0  0.1  0.0  0.0  0.1  0.0  0.0
```

FF

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

              JOB: MAGNOLIA STREET AND WARNER AVENU
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


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

            *                          CONC/LINK
```

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
	(PPM)											
1. NE3	0.0	0.1	0.6	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
2. SE3	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
3. SW3	0.0	0.2	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.0	0.0	0.0
4. NW3	0.0	0.5	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
5. NE7	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
6. SE7	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
7. SW7	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
8. NW7	0.0	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0

FF

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

     JOB: SEALBEACH BLVD AND I-405SBRAMPS
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
   U=   0.5 M/S            Z0= 100. CM           ALT= 0.0 (M)
 BRG= WORST CASE           VD=  0.0 CM/S
CLAS=     7 (G)            VS=  0.0 CM/S
MIXH= 1000. M             AMB=  0.0 PPM
SIGTH=    5. DEGREES      TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. NF	8	-1500	8	-500	AG	2318	0.8	0.0	33.0
B. NA	8	-500	8	0	AG	2308	1.6	0.0	33.0
C. ND	8	0	8	500	AG	2705	1.0	0.0	33.0
D. NE	8	500	8	1500	AG	2705	0.8	0.0	33.0
E. SF	-8	1500	-8	500	AG	2379	0.8	0.0	33.0
F. SA	-8	500	-8	0	AG	1744	1.6	0.0	33.0
G. SD	-8	0	-8	-500	AG	2244	1.0	0.0	33.0
H. SE	-8	-500	-8	-1500	AG	2244	0.8	0.0	33.0
I. WF	1500	8	500	8	AG	1343	0.8	0.0	33.0
J. WA	500	8	0	8	AG	752	1.6	0.0	33.0
K. WD	0	8	-500	8	AG	161	1.0	0.0	33.0
L. WE	-500	8	-1500	8	AG	161	0.8	0.0	33.0
M. EF	-1500	-8	-500	-8	AG	240	0.8	0.0	33.0
N. EA	-500	-8	0	-8	AG	79	1.6	0.0	33.0
O. ED	0	-8	500	-8	AG	1170	1.6	0.0	33.0
P. EE	500	-8	1500	-8	AG	1170	0.8	0.0	33.0
Q. NL	0	0	8	-500	AG	10	1.1	0.0	33.0
R. SL	0	0	-8	500	AG	635	1.4	0.0	33.0
S. WL	0	0	500	8	AG	591	1.6	0.0	33.0
T. EL	0	0	-500	-8	AG	161	1.6	0.0	33.0

FF

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
```

```
                    PAGE   2

              JOB: SEALBEACH BLVD AND I-405SBRAMPS
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	185.	1.2	0.0	0.6	0.1	0.0	0.0	0.0	0.2	0.0
2. SE3	354.	1.2	0.0	0.1	0.4	0.0	0.0	0.3	0.0	0.0
3. SW3	85.	1.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0
4. NW3	95.	1.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
5. NE7	187.	0.7	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0
6. SE7	352.	0.8	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
7. SW7	83.	0.7	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0
8. NW7	97.	0.7	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0

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

              JOB: SEALBEACH BLVD AND I-405SBRAMPS
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

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

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
2. SE3	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0
3. SW3	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.0
4. NW3	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0
5. NE7	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
6. SE7	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
7. SW7	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0
8. NW7	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0

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

     JOB: SPRINGDALE AND WESTMINISTER
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=   0.5 M/S            Z0= 100. CM           ALT= 0.0 (M)
     BRG= WORST CASE           VD=  0.0 CM/S
    CLAS=     7 (G)            VS=  0.0 CM/S
    MIXH= 1000. M             AMB=  0.0 PPM
   SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (FT)  *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (FT)  (FT)
----------------*-------------------------*-----------------------------
A. NF           *     8 -1500     8  -500 *  AG   1523   0.8    0.0  33.0
B. NA           *     8  -500     8     0 *  AG   1347   1.6    0.0  33.0
C. ND           *     8     0     8   500 *  AG   1150   1.6    0.0  33.0
D. NE           *     8   500     8  1500 *  AG   1150   0.8    0.0  33.0
E. SF           *    -8  1500    -8   500 *  AG   1654   0.8    0.0  33.0
F. SA           *    -8   500    -8     0 *  AG   1062   1.6    0.0  33.0
G. SD           *    -8     0    -8  -500 *  AG   1359   1.6    0.0  33.0
H. SE           *    -8  -500    -8 -1500 *  AG   1359   0.8    0.0  33.0
I. WF           *  1500     8   500     8 *  AG   1646   0.8    0.0  33.0
J. WA           *   500     8     0     8 *  AG   1328   1.6    0.0  33.0
K. WD           *     0     8  -500     8 *  AG   1225   1.6    0.0  33.0
L. WE           *  -500     8 -1500     8 *  AG   1225   0.8    0.0  33.0
M. EF           * -1500    -8  -500    -8 *  AG   1543   0.8    0.0  33.0
N. EA           *  -500    -8     0    -8 *  AG   1343   1.6    0.0  33.0
O. ED           *     0    -8   500    -8 *  AG   2632   1.6    0.0  33.0
P. EE           *   500    -8  1500    -8 *  AG   2632   0.8    0.0  33.0
Q. NL           *     0     0     8  -500 *  AG    176   1.4    0.0  33.0
R. SL           *     0     0    -8   500 *  AG    592   1.6    0.0  33.0
S. WL           *     0     0   500     8 *  AG    318   1.4    0.0  33.0
T. EL           *     0     0  -500    -8 *  AG    200   1.4    0.0  33.0


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

     JOB: SPRINGDALE AND WESTMINISTER
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


III.  RECEPTOR LOCATIONS

            *    COORDINATES (FT)
  RECEPTOR  *    X      Y      Z
------------*---------------------
```

```
 1. NE3      *     25     25   6.0
 2. SE3      *     25    -25   6.0
 3. SW3      *    -25    -25   6.0
 4. NW3      *    -25     25   6.0
 5. NE7      *     38     38   6.0
 6. SE7      *     38    -38   6.0
 7. SW7      *    -38    -38   6.0
 8. NW7      *    -38     38   6.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *   1.1 *  0.0  0.4  0.0  0.0  0.0  0.0  0.2  0.0
 2. SE3      *  354. *   1.2 *  0.0  0.1  0.3  0.0  0.0  0.2  0.0  0.0
 3. SW3      *   85. *   1.3 *  0.0  0.1  0.0  0.0  0.0  0.0  0.2  0.0
 4. NW3      *   96. *   1.2 *  0.0  0.0  0.1  0.0  0.0  0.1  0.0  0.0
 5. NE7      *  187. *   0.8 *  0.0  0.2  0.0  0.0  0.0  0.0  0.2  0.0
 6. SE7      *  352. *   0.8 *  0.0  0.0  0.2  0.0  0.0  0.1  0.0  0.0
 7. SW7      *   82. *   0.9 *  0.0  0.1  0.0  0.0  0.0  0.0  0.1  0.0
 8. NW7      *   98. *   0.8 *  0.0  0.0  0.1  0.0  0.0  0.1  0.0  0.0


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

              JOB: SPRINGDALE AND WESTMINISTER
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


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

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*-------------------------------------------------------------
 1. NE3      *  0.0  0.2  0.0  0.0  0.0  0.0  0.2  0.0  0.0  0.0  0.0  0.0
 2. SE3      *  0.0  0.1  0.0  0.0  0.0  0.0  0.3  0.0  0.0  0.1  0.0  0.0
 3. SW3      *  0.0  0.2  0.0  0.0  0.0  0.1  0.7  0.0  0.0  0.0  0.1  0.0
 4. NW3      *  0.0  0.4  0.1  0.0  0.0  0.0  0.3  0.0  0.0  0.1  0.1  0.0
 5. NE7      *  0.0  0.1  0.0  0.0  0.0  0.0  0.2  0.0  0.0  0.0  0.0  0.0
 6. SE7      *  0.0  0.1  0.0  0.0  0.0  0.0  0.2  0.0  0.0  0.1  0.0  0.0
 7. SW7      *  0.0  0.2  0.0  0.0  0.0  0.0  0.4  0.0  0.0  0.0  0.0  0.0
 8. NW7      *  0.0  0.2  0.0  0.0  0.0  0.0  0.3  0.0  0.0  0.0  0.0  0.0


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

              JOB: BEACH BLVD AND I-405SBRAMPS
              RUN:                  (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=   0.5 M/S            Z0= 100. CM           ALT= 0.0 (M)
    BRG= WORST CASE           VD=  0.0 CM/S
   CLAS=     7 (G)            VS=  0.0 CM/S
   MIXH= 1000. M             AMB=  0.0 PPM
  SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. NF	8	-1500	8	-500	AG	3071	0.8	0.0	33.0
B. NA	8	-500	8	0	AG	3071	1.6	0.0	33.0
C. ND	8	0	8	500	AG	3532	1.0	0.0	33.0
D. NE	8	500	8	1500	AG	3532	0.8	0.0	33.0
E. SF	-8	1500	-8	500	AG	3849	0.8	0.0	33.0
F. SA	-8	500	-8	0	AG	3849	1.6	0.0	33.0
G. SD	-8	0	-8	-500	AG	4089	1.0	0.0	33.0
H. SE	-8	-500	-8	-1500	AG	4089	0.8	0.0	33.0
I. WF	1500	8	500	8	AG	0	0.8	0.0	33.0
J. WA	500	8	0	8	AG	0	1.6	0.0	33.0
K. WD	0	8	-500	8	AG	989	1.6	0.0	33.0
L. WE	-500	8	-1500	8	AG	989	0.8	0.0	33.0
M. EF	-1500	-8	-500	-8	AG	1690	0.8	0.0	33.0
N. EA	-500	-8	0	-8	AG	1229	1.6	0.0	33.0
O. ED	0	-8	500	-8	AG	0	1.1	0.0	33.0
P. EE	500	-8	1500	-8	AG	0	0.8	0.0	33.0
Q. NL	0	0	8	-500	AG	0	1.1	0.0	33.0
R. SL	0	0	-8	500	AG	0	1.1	0.0	33.0
S. WL	0	0	500	8	AG	0	1.6	0.0	33.0
T. EL	0	0	-500	-8	AG	461	1.6	0.0	33.0

FF

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

     JOB: BEACH BLVD AND I-405SBRAMPS
     RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	185.	1.3	0.0	0.8	0.1	0.0	0.0	0.0	0.3	0.1
2. SE3	354.	1.2	0.0	0.1	0.5	0.0	0.1	0.5	0.0	0.0
3. SW3	5.	1.7	0.0	0.0	0.2	0.1	0.0	1.0	0.1	0.0
4. NW3	174.	1.5	0.0	0.4	0.0	0.0	0.0	0.2	0.6	0.0
5. NE7	262.	0.9	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
6. SE7	277.	0.9	0.0	0.3	0.0	0.0	0.0	0.0	0.2	0.0
7. SW7	7.	1.0	0.0	0.0	0.2	0.0	0.0	0.6	0.0	0.0
8. NW7	172.	0.9	0.0	0.3	0.0	0.0	0.0	0.0	0.4	0.0

FF

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

JOB: BEACH BLVD AND I-405SBRAMPS
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2. SE3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. SW3	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
4. NW3	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
5. NE7	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
6. SE7	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
7. SW7	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
8. NW7	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0

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

JOB: BEACH BOULEVARD AND MCFADDEN AVENUE
RUN: (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0.0 (M)
BRG= WORST CASE VD= 0.0 CM/S
CLAS= 7 (G) VS= 0.0 CM/S
MIXH= 1000. M AMB= 0.0 PPM
SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK * LINK COORDINATES (FT) * EF H W

DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	(G/MI)	(FT)	(FT)
A. NF	8	-1500	8	-500	AG	3437	0.8	0.0	33.0
B. NA	8	-500	8	0	AG	3211	1.6	0.0	33.0
C. ND	8	0	8	500	AG	3587	1.0	0.0	33.0
D. NE	8	500	8	1500	AG	3587	0.8	0.0	33.0
E. SF	-8	1500	-8	500	AG	3370	0.8	0.0	33.0
F. SA	-8	500	-8	0	AG	3167	1.6	0.0	33.0
G. SD	-8	0	-8	-500	AG	3370	1.0	0.0	33.0
H. SE	-8	-500	-8	-1500	AG	3370	0.8	0.0	33.0
I. WF	1500	8	500	8	AG	1148	0.8	0.0	33.0
J. WA	500	8	0	8	AG	746	1.6	0.0	33.0
K. WD	0	8	-500	8	AG	1109	1.6	0.0	33.0
L. WE	-500	8	-1500	8	AG	1109	0.8	0.0	33.0
M. EF	-1500	-8	-500	-8	AG	838	0.8	0.0	33.0
N. EA	-500	-8	0	-8	AG	477	1.6	0.0	33.0
O. ED	0	-8	500	-8	AG	727	1.6	0.0	33.0
P. EE	500	-8	1500	-8	AG	727	0.8	0.0	33.0
Q. NL	0	0	8	-500	AG	226	1.1	0.0	33.0
R. SL	0	0	-8	500	AG	203	1.1	0.0	33.0
S. WL	0	0	500	8	AG	402	1.6	0.0	33.0
T. EL	0	0	-500	-8	AG	361	1.6	0.0	33.0

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

    JOB: BEACH BOULEVARD AND MCFADDEN AVENUE
    RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
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III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NE3	25	25	6.0
2. SE3	25	-25	6.0
3. SW3	-25	-25	6.0
4. NW3	-25	25	6.0
5. NE7	38	38	6.0
6. SE7	38	-38	6.0
7. SW7	-38	-38	6.0
8. NW7	-38	38	6.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	185.	1.5	0.0	0.8	0.1	0.0	0.0	0.0	0.2	0.1
2. SE3	354.	1.4	0.0	0.2	0.5	0.0	0.0	0.4	0.0	0.0
3. SW3	5.	1.5	0.0	0.0	0.2	0.1	0.0	0.8	0.1	0.0
4. NW3	174.	1.4	0.0	0.4	0.0	0.0	0.0	0.1	0.5	0.0
5. NE7	187.	0.9	0.0	0.5	0.0	0.0	0.0	0.0	0.2	0.0
6. SE7	352.	0.8	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0
7. SW7	7.	0.9	0.0	0.0	0.2	0.0	0.0	0.5	0.0	0.0
8. NW7	172.	0.8	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.0

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

    JOB: BEACH BOULEVARD AND MCFADDEN AVENUE
    RUN:                  (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
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IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2. SE3	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
3. SW3	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
4. NW3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. NE7	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
6. SE7	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
7. SW7	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8. NW7	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Appendix F

GHG Emissions

Appendix F. GHG Emissions

Year	Build ID	Time Period	Segments	Total (lb/day) CH4	Total (lb/day) N2O	Total (lb/day) CO2	Total (lb/day) GHG	Total (MT/day) GHG
2009	EXT	AM	SR-73 to Brookhurst	13	8.8	188,898	191,604	87
2009	EXT	AM	Brookhurst to SR-22 East	37	15.3	412,515	417,608	189
2009	EXT	AM	SR-22 East to I-605	18	9.8	235,333	238,451	108
2009	EXT	PM	SR-73 to Brookhurst	18	10.5	240,167	243,444	110
2009	EXT	PM	Brookhurst to SR-22 East	28	19.1	404,487	410,318	186
2009	EXT	PM	SR-22 East to I-605	19	12.9	278,354	282,323	128
2009	EXT	NP	SR-73 to Brookhurst	37	24.0	514,880	522,264	237
2009	EXT	NP	Brookhurst to SR-22 East	69	44.9	966,448	980,278	445
2009	EXT	NP	SR-22 East to I-605	45	29.3	629,765	638,767	290
2020	NOB	AM	SR-73 to Brookhurst	20	7.5	358,328	360,880	164
2020	NOB	AM	Brookhurst to SR-22 East	46	13.6	729,784	734,679	333
2020	NOB	AM	SR-22 East to I-605	18	7.5	349,803	352,294	160
2020	NOB	PM	SR-73 to Brookhurst	17	8.7	374,974	377,777	171
2020	NOB	PM	Brookhurst to SR-22 East	83	21.6	1,206,541	1,214,597	551
2020	NOB	PM	SR-22 East to I-605	25	10.6	493,635	497,147	226
2020	NOB	NP	SR-73 to Brookhurst	12	8.1	307,006	309,492	140
2020	NOB	NP	Brookhurst to SR-22 East	21	13.7	521,676	525,891	239
2020	NOB	NP	SR-22 East to I-605	14	9.6	365,495	368,443	167
2020	ALT1	AM	SR-73 to Brookhurst	15	7.0	309,970	312,264	142
2020	ALT1	AM	Brookhurst to SR-22 East	15	9.2	360,371	363,220	165
2020	ALT1	AM	SR-22 East to I-605	10	6.3	241,258	243,200	110
2020	ALT1	PM	SR-73 to Brookhurst	12	7.6	292,324	294,675	134
2020	ALT1	PM	Brookhurst to SR-22 East	21	13.0	511,419	515,455	234
2020	ALT1	PM	SR-22 East to I-605	13	8.7	330,086	332,756	151
2020	ALT1	NP	SR-73 to Brookhurst	13	8.5	325,116	327,740	149
2020	ALT1	NP	Brookhurst to SR-22 East	22	14.8	560,973	565,510	257
2020	ALT1	NP	SR-22 East to I-605	15	10.3	391,443	394,603	179
2020	ALT2	AM	SR-73 to Brookhurst	16	7.1	316,803	319,136	145
2020	ALT2	AM	Brookhurst to SR-22 East	14	10.1	367,968	371,040	168
2020	ALT2	AM	SR-22 East to I-605	9	6.7	247,603	249,645	113
2020	ALT2	PM	SR-73 to Brookhurst	11	7.4	278,848	281,117	128
2020	ALT2	PM	Brookhurst to SR-22 East	18	13.3	487,681	491,719	223
2020	ALT2	PM	SR-22 East to I-605	13	9.1	332,900	335,667	152
2020	ALT2	NP	SR-73 to Brookhurst	13	8.9	337,993	340,721	155
2020	ALT2	NP	Brookhurst to SR-22 East	23	15.6	590,991	595,775	270
2020	ALT2	NP	SR-22 East to I-605	16	10.8	409,839	413,152	187
2020	ALT3	AM	SR-73 to Brookhurst	11	6.8	266,317	268,430	122
2020	ALT3	AM	Brookhurst to SR-22 East	15	10.5	388,055	391,253	177
2020	ALT3	AM	SR-22 East to I-605	10	6.8	259,685	261,778	119
2020	ALT3	PM	SR-73 to Brookhurst	12	8.9	319,540	322,231	146
2020	ALT3	PM	Brookhurst to SR-22 East	20	13.4	504,527	508,632	231
2020	ALT3	PM	SR-22 East to I-605	13	9.1	345,504	348,303	158
2020	ALT3	NP	SR-73 to Brookhurst	13	8.8	331,877	334,564	152
2020	ALT3	NP	Brookhurst to SR-22 East	22	15.1	573,100	577,736	262
2020	ALT3	NP	SR-22 East to I-605	15	9.9	374,075	377,103	171
2040	NOB	AM	SR-73 to Brookhurst	48	8.8	727,034	730,711	331
2040	NOB	AM	Brookhurst to SR-22 East	105	16.1	1,425,271	1,432,451	650
2040	NOB	AM	SR-22 East to I-605	67	10.8	938,013	942,753	428
2040	NOB	PM	SR-73 to Brookhurst	40	9.6	723,120	726,778	330
2040	NOB	PM	Brookhurst to SR-22 East	134	20.6	1,828,155	1,837,364	833
2040	NOB	PM	SR-22 East to I-605	70	12.7	1,050,351	1,055,672	479
2040	NOB	NP	SR-73 to Brookhurst	8	4.7	258,503	259,986	118

Appendix F. GHG Emissions

Year	Build ID	Time Period	Segments	Total (lb/day) CH4	Total (lb/day) N2O	Total (lb/day) CO2	Total (lb/day) GHG	Total (MT/day) GHG
2040	NOB	NP	Brookhurst to SR-22 East	14	7.8	433,551	436,015	198
2040	NOB	NP	SR-22 East to I-605	10	5.6	313,526	315,297	143
2040	ALT1	AM	SR-73 to Brookhurst	41	7.6	618,565	621,719	282
2040	ALT1	AM	Brookhurst to SR-22 East	48	11.5	869,454	873,840	396
2040	ALT1	AM	SR-22 East to I-605	23	6.9	492,003	494,478	224
2040	ALT1	PM	SR-73 to Brookhurst	18	6.5	431,630	433,856	197
2040	ALT1	PM	Brookhurst to SR-22 East	58	14.3	1,064,007	1,069,434	485
2040	ALT1	PM	SR-22 East to I-605	22	7.8	524,822	527,502	239
2040	ALT1	NP	SR-73 to Brookhurst	9	5.2	288,124	289,757	131
2040	ALT1	NP	Brookhurst to SR-22 East	16	8.8	487,945	490,731	223
2040	ALT1	NP	SR-22 East to I-605	11	6.3	350,302	352,288	160
2040	ALT2	AM	SR-73 to Brookhurst	39	7.1	581,852	584,819	265
2040	ALT2	AM	Brookhurst to SR-22 East	15	7.3	425,189	427,542	194
2040	ALT2	AM	SR-22 East to I-605	15	5.7	371,020	372,947	169
2040	ALT2	PM	SR-73 to Brookhurst	16	6.2	402,546	404,636	184
2040	ALT2	PM	Brookhurst to SR-22 East	17	9.3	521,096	524,046	238
2040	ALT2	PM	SR-22 East to I-605	14	6.6	389,007	391,144	177
2040	ALT2	NP	SR-73 to Brookhurst	10	5.8	322,484	324,310	147
2040	ALT2	NP	Brookhurst to SR-22 East	18	10.1	553,069	556,234	252
2040	ALT2	NP	SR-22 East to I-605	13	7.1	392,737	394,971	179
2040	ALT3	AM	SR-73 to Brookhurst	18	6.0	394,333	396,426	180
2040	ALT3	AM	Brookhurst to SR-22 East	18	8.2	488,023	490,681	223
2040	ALT3	AM	SR-22 East to I-605	23	7.1	499,872	502,421	228
2040	ALT3	PM	SR-73 to Brookhurst	11	6.0	333,243	335,127	152
2040	ALT3	PM	Brookhurst to SR-22 East	20	10.0	581,476	584,694	265
2040	ALT3	PM	SR-22 East to I-605	22	8.2	538,060	540,845	245
2040	ALT3	NP	SR-73 to Brookhurst	10	5.6	307,228	308,985	140
2040	ALT3	NP	Brookhurst to SR-22 East	17	9.4	518,301	521,260	236
2040	ALT3	NP	SR-22 East to I-605	11	6.2	340,573	342,520	155

Emissions Summary by Build Alternative and Segment

2009	EXT		SR-73 to Brookhurst	68	43.3	943,946	957,312	434
2009	EXT		Brookhurst to SR-22 East	134	79.3	1,783,451	1,808,203	820
2009	EXT		SR-22 East to I-605	82	52.0	1,143,451	1,159,541	526
2020	NOB		SR-73 to Brookhurst	49	24.4	1,040,308	1,048,149	475
2020	NOB		Brookhurst to SR-22 East	149	49.0	2,458,001	2,475,167	1,123
2020	NOB		SR-22 East to I-605	58	27.7	1,208,932	1,217,884	552
2020	ALT1		SR-73 to Brookhurst	40	23.2	927,410	934,680	424
2020	ALT1		Brookhurst to SR-22 East	58	37.0	1,432,762	1,444,186	655
2020	ALT1		SR-22 East to I-605	38	25.3	962,786	970,559	440
2020	ALT2		SR-73 to Brookhurst	40	23.4	933,643	940,974	427
2020	ALT2		Brookhurst to SR-22 East	56	39.0	1,446,639	1,458,533	662
2020	ALT2		SR-22 East to I-605	38	26.6	990,343	998,464	453
2020	ALT3		SR-73 to Brookhurst	36	24.4	917,734	925,224	420
2020	ALT3		Brookhurst to SR-22 East	57	39.0	1,465,682	1,477,621	670
2020	ALT3		SR-22 East to I-605	38	25.8	979,264	987,184	448
2040	NOB		SR-73 to Brookhurst	96	23.1	1,708,658	1,717,475	779
2040	NOB		Brookhurst to SR-22 East	253	44.4	3,686,976	3,705,831	1,681
2040	NOB		SR-22 East to I-605	147	29.1	2,301,890	2,313,722	1,049
2040	ALT1		SR-73 to Brookhurst	68	19.3	1,338,318	1,345,332	610
2040	ALT1		Brookhurst to SR-22 East	122	34.7	2,421,405	2,434,005	1,104

Appendix F. GHG Emissions

Year	Build ID	Time Period	Segments	Total (lb/day) CH4	Total (lb/day) N2O	Total (lb/day) CO2	Total (lb/day) GHG	Total (MT/day) GHG
2040	ALT1		SR-22 East to I-605	57	20.9	1,367,128	1,374,268	623
2040	ALT2		SR-73 to Brookhurst	65	19.1	1,306,881	1,313,765	596
2040	ALT2		Brookhurst to SR-22 East	50	26.7	1,499,354	1,507,822	684
2040	ALT2		SR-22 East to I-605	42	19.4	1,152,764	1,159,062	526
2040	ALT3		SR-73 to Brookhurst	38	17.6	1,034,803	1,040,538	472
2040	ALT3		Brookhurst to SR-22 East	54	27.6	1,587,799	1,596,636	724
2040	ALT3		SR-22 East to I-605	57	21.5	1,378,505	1,385,786	629

Emissions Summary by Build Alternative

2009	**EXT**			284	175	3,870,848	3,925,057	1,780
2020	**NOB**			256	101	4,707,241	4,741,200	2,151
2020	**ALT1**			136	86	3,322,958	3,349,425	1,519
2020	**ALT2**			134	89	3,370,625	3,397,971	1,541
2020	**ALT3**			132	89	3,362,681	3,390,029	1,538
2040	**NOB**			496	97	7,697,524	7,737,028	3,509
2040	**ALT1**			247	75	5,126,852	5,153,605	2,338
2040	**ALT2**			157	65	3,959,000	3,980,649	1,806
2040	**ALT3**			150	67	4,001,108	4,022,961	1,825