

# Appendix A

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Air Quality and Greenhouse Gas Emissions Modeling

# KCAG 2022 RTP/SCS Air Quality Emission Calculations

Scenario	VMT*	ROG (tons/day)	NO <sub>x</sub> (tons/day)	PM <sub>10</sub> (tons/day) <sup>1</sup>	PM <sub>2.5</sub> (tons/day) <sup>1</sup>	Fugitive PM <sub>10</sub> (tons/day) <sup>2</sup>	Fugitive PM <sub>2.5</sub> (tons/day) <sup>2</sup>	CO (tons/day)	SO <sub>x</sub> (tons/day)	CO <sub>2e</sub> (tons/day)	CO <sub>2e</sub> ( metric tons/year)
<b>2020 KCAG Baseline</b>											
On-Road Motor Vehicles	4,095,140	1.075	3.539	0.188	0.091	0.137	0.042	8.217	0.026	2,623	868,635
<b>2046 No Build</b>											
On-Road Motor Vehicles	5,652,866	0.469	2.217	0.232	0.092	0.202	0.063	4.205	0.025	2,593	858,622
<b>2046 Infill</b>											
On-Road Motor Vehicles	NA	0.467	2.210	0.232	0.091	0.201	0.062	4.192	0.025	2,585	855,995
<b>2046 Project</b>											
On-Road Motor Vehicles	5,467,919	0.453	2.145	0.225	0.089	0.195	0.061	4.068	0.024	2,508	830,531
<b>Difference (2046 Project - Baseline)</b>	<b>1,372,779.00</b>	<b>-0.622</b>	<b>-1.395</b>	<b>0.037</b>	<b>-0.003</b>	<b>0.059</b>	<b>0.018</b>	<b>-4.150</b>	<b>-0.001</b>	<b>-115.08</b>	<b>-38,104.46</b>
%	34%	-58%	-39%	19.5%	-3.0%	43%	43%	-50%	-5%	-4%	-4%
Difference (2046 Project - No Build)	-184,947.00	-0.02	-0.07	-0.01	0.00	-0.01	0.00	-0.14	0.00	-84.84	-28,091.88
%	-3%	-3%	-3%	-3%	-3%	-3%	-3%	-3%	-3%	-3%	-3%
Difference (2046 Project - Infill)	#VALUE!	-1.05	-2.60	-0.04	-0.12	0.23	0.36	-4.70	-0.07	-2,585.17	-855,994.79
%	#VALUE!	-3%	-3%	-3%	-3%	-3%	-3%	-3%	-3%	-3%	-3%

**Notes**

\* VMT from KCAG "Transportation Model Metrics" Spreadsheet. Not adjusted for induced demand.

Annual emissions - Total

1) Includes tire and break wear in the total PM

2) Includes only tire and break wear

Scenario	Diesel PM <sub>2.5</sub> (tons/day)	Diesel PM <sub>10</sub> (tons/day) <sup>1</sup>	Diesel NO <sub>x</sub> (tons/day)	Diesel SO <sub>x</sub> (tons/day)	Diesel CO (tons/day)
<b>2015 KCAG Baseline</b>					
On-Road Motor Vehicles	0.042	0.044	2.80	0.01	0.63
<b>2046 No Build</b>					
On-Road Motor Vehicles	0.027	0.028	2.01	0.01	0.73
<b>2046 Project</b>					
On-Road Motor Vehicles	0.026	0.027	1.94	0.01	0.71
<b>Difference (2046 Project - Baseline)</b>	<b>-0.017</b>	<b>-0.017</b>	<b>-0.858</b>	<b>0.001</b>	<b>0.073</b>
%	-39%	-39%	-31%	12%	12%
Difference (2046 Project - No Build)	-0.001	-0.001	-0.066	0.000	-0.024
Difference (2046 Project - ScenB)	-0.001	-0.001	-0.060	0.000	-0.022

**Notes**

Diesel annual emissions -Total Exhaust (TOTEX)





Fuel_GAS	Fuel_DSL	Fuel_NG
155.9	104.8	1.02
	0.1098	
		0.0021
	0.1125	
64.8		
0.5815	0.0034	
6.29		
0.0002	0.0569	
30.7		
0.0259	4.97	
7.80	1.78	
1.10		
0.3420	0.5202	
40.9		
0.0491	0.1322	
0.6306	0.1445	
0.8080	0.5007	
	0.3096	
0.1222		0.0485
	0.0104	
	0.0142	
	0.0368	
	0.2156	
	0.0814	
	0.0222	
	0.1435	
	0.0552	
		0.0000
	0.3053	
	0.7679	
	0.9383	
	0.5093	0.0053
	0.0204	
	0.4186	0.0100
	0.0062	
	0.0085	
	0.0220	
	0.1493	
	0.0225	0.0003
	0.0494	0.0113
	0.0639	0.0066
	0.2801	0.0190
	0.0817	0.0002
	0.0157	0.0001
	0.0218	0.0000
1.68		
	26.0	
	30.8	
	11.2	
	0.4421	
	1.16	
	1.54	0.0190
	0.6540	0.0429
	0.9011	0.1701
	0.0450	0.0010
	0.2392	0.0107
	1.60	0.0778
	17.2	0.3238
0.0687	0.0987	
	0.0088	
0.0464		0.2703

Group	Area	GAI	Sub-Area	Cal. Year	Season	Title	Veh_Tech	EMFAC2011 Category	Population	Total_VMT	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX	NOx_RUNEX
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	All Other Buses-Dsl	All Other Buses - Dsl	19.0	948.7	0.0014	0.0000		0.0015	0.0058
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	LDA-Dsl	LDA - Dsl	170.8	4,607.6	0.0022			0.0022	0.0019
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	LDT1-Dsl	LDT1 - Dsl	5.81	83.5	0.0002			0.0002	0.0001
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	LDT2-Dsl	LDT2 - Dsl	50.4	1,702.5	0.0004			0.0004	0.0003
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	LHD1-Dsl	LHD1 - Dsl	2,465.6	77,650.5	0.0579	0.0025		0.0604	0.2157
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	LHD2-Dsl	LHD2 - Dsl	694.0	22,808.3	0.0133	0.0007		0.0140	0.0484
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	MDV-Dsl	MDV - Dsl	339.0	11,923.8	0.0032			0.0032	0.0019
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	MH-Dsl	MH - Dsl	164.7	1,245.4	0.0007			0.0007	0.0077
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	Motor Coach-Dsl	Motor Coach - Dsl	5.72	797.1	0.0003	0.0003		0.0006	0.0027
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	PTO-Dsl	PTO-Dsl	0	2,290.7	0.0016			0.0016	0.0123
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	SBUS-Dsl	SBUS - Dsl	114.2	2,437.0	0.0009	0.0004		0.0012	0.0226
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 CAIRP Class 4-Dsl	T6 CAIRP small-Dsl	1.39	91.5	0.0000	0.0000		0.0000	0.0001
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 CAIRP Class 5-Dsl	T6 CAIRP small-Dsl	1.87	125.6	0.0000	0.0000		0.0000	0.0001
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 CAIRP Class 6-Dsl	T6 CAIRP small-Dsl	5.22	328.1	0.0001	0.0000		0.0001	0.0004
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 CAIRP Class 7-Dsl	T6 CAIRP heavy-Dsl	9.83	2,058.2	0.0004	0.0000		0.0004	0.0032
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Instate Delivery Class 4-Dsl	T6 instate small-Dsl	15.8	497.3	0.0004	0.0001		0.0006	0.0024
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Instate Delivery Class 5-Dsl	T6 instate small-Dsl	5.35	169.2	0.0002	0.0000		0.0002	0.0010
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Instate Delivery Class 6-Dsl	T6 instate small-Dsl	36.2	1,158.1	0.0008	0.0003		0.0011	0.0048
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Instate Delivery Class 7-Dsl	T6 instate heavy-Dsl	8.51	435.6	0.0003	0.0001		0.0003	0.0024
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Instate Other Class 4-Dsl	T6 instate small-Dsl	71.8	2,582.6	0.0020	0.0007		0.0026	0.0120
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Instate Other Class 5-Dsl	T6 instate small-Dsl	151.8	6,538.9	0.0019	0.0012		0.0031	0.0129
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Instate Other Class 6-Dsl	T6 instate small-Dsl	202.2	8,012.7	0.0042	0.0020		0.0062	0.0257
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Instate Other Class 7-Dsl	T6 instate heavy-Dsl	107.0	4,438.1	0.0016	0.0009		0.0024	0.0138
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Instate Tractor Class 6-Dsl	T6 instate small-Dsl	4.81	164.0	0.0003	0.0001		0.0004	0.0015
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Instate Tractor Class 7-Dsl	T6 instate heavy-Dsl	62.7	3,846.6	0.0011	0.0005		0.0016	0.0108
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 OOS Class 4-Dsl	T6 OOS small-Dsl	0.8367	54.7	0.0000	0.0000		0.0000	0.0001
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 OOS Class 5-Dsl	T6 OOS small-Dsl	1.12	75.0	0.0000	0.0000		0.0000	0.0001
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 OOS Class 6-Dsl	T6 OOS small-Dsl	3.14	196.1	0.0000	0.0000		0.0000	0.0003
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 OOS Class 7-Dsl	T6 OOS heavy-Dsl	5.78	1,425.6	0.0003	0.0000		0.0003	0.0023
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Public Class 4-Dsl	T6 Public-Dsl	4.85	161.1	0.0000	0.0000		0.0001	0.0013
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Public Class 5-Dsl	T6 Public-Dsl	9.87	371.4	0.0001	0.0001		0.0001	0.0012
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Public Class 6-Dsl	T6 Public-Dsl	13.9	473.8	0.0001	0.0001		0.0002	0.0037
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Public Class 7-Dsl	T6 Public-Dsl	51.0	2,053.2	0.0007	0.0003		0.0010	0.0194
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Utility Class 5-Dsl	T6 Utility-Dsl	17.1	699.8	0.0001	0.0001		0.0002	0.0009
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Utility Class 6-Dsl	T6 Utility-Dsl	3.31	132.0	0.0000	0.0000		0.0000	0.0003
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T6 Utility Class 7-Dsl	T6 Utility-Dsl	3.86	184.2	0.0000	0.0000		0.0000	0.0003
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 CAIRP Class 8-Dsl	T7 CAIRP-Dsl	730.6	153,102.8	0.0337	0.1123		0.1459	0.4689
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 NNOOS Class 8-Dsl	T7 NNOOS-Dsl	674.6	181,014.8	0.0749	0.1269		0.2018	0.5762
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 NOOS Class 8-Dsl	T7 NOOS-Dsl	272.8	65,759.5	0.0162	0.0521		0.0683	0.2090
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 Other Port Class 8-Dsl	T7 Other Port-Dsl	15.2	2,538.3	0.0009	0.0006		0.0016	0.0114
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 POAK Class 8-Dsl	T7 POAK-Dsl	67.4	6,517.4	0.0028	0.0028		0.0056	0.0320
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 POLA Class 8-Dsl	T7 POLA-Dsl	65.9	8,687.3	0.0038	0.0026		0.0064	0.0455
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 Public Class 8-Dsl	T7 Public-Dsl	76.6	3,250.9	0.0019	0.0007		0.0026	0.0404
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 SWCV Class 8-Dsl	T7 SWCV-Dsl	34.0	2,200.7	0.0002	0.0004		0.0005	0.0270
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 Single Concrete/Transit Mix Class 8-Dsl	T7 Single-Dsl	5.49	261.0	0.0003	0.0001		0.0004	0.0020
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 Single Dump Class 8-Dsl	T7 Single-Dsl	24.8	1,416.8	0.0003	0.0007		0.0010	0.0039
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 Single Other Class 8-Dsl	T7 Single-Dsl	172.0	9,400.3	0.0027	0.0044		0.0071	0.0309
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 Tractor Class 8-Dsl	T7 Tractor-Dsl	1,174.6	103,238.0	0.0314	0.0534		0.0848	0.3747
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	T7 Utility Class 8-Dsl	T7 Utility-Dsl	11.2	554.0	0.0001	0.0001		0.0002	0.0015
1	KCAG		All Sub-Areas	2020	Annual	Areas-2020	UBUS-Dsl	UBUS - Dsl	0.8774	88.6	0.0000			0.0000	0.0000
<b>TOTALs</b>									<b>8,154.6</b>	<b>700,798.6</b>	<b>0.3</b>	<b>0.4</b>	<b>0.0</b>	<b>0.6</b>	<b>2.3</b>



PM2_5_TOTAL	SOx_RUNEX	SOx_IDLEX	SOx_STREX	SOx_TOTEX
0.0002	0.0000	0.0000		0.0000
0.0001	0.0000			0.0000
0.0000	0.0000			0.0000
0.0000	0.0000			0.0000
0.0071	0.0005	0.0000		0.0005
0.0019	0.0002	0.0000		0.0002
0.0002	0.0001			0.0001
0.0002	0.0000			0.0000
0.0001	0.0000	0.0000		0.0000
0.0001	0.0001			0.0001
0.0002	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0001	0.0000	0.0000		0.0000
0.0001	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0001	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0004	0.0000	0.0000		0.0000
0.0004	0.0001	0.0000		0.0001
0.0009	0.0001	0.0000		0.0001
0.0003	0.0001	0.0000		0.0001
0.0001	0.0000	0.0000		0.0000
0.0002	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0001	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0002	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0000	0.0000	0.0000		0.0000
0.0139	0.0026	0.0002		0.0028
0.0226	0.0030	0.0002		0.0033
0.0062	0.0011	0.0001		0.0012
0.0002	0.0000	0.0000		0.0000
0.0005	0.0001	0.0000		0.0001
0.0007	0.0002	0.0000		0.0002
0.0005	0.0001	0.0000		0.0001
0.0002	0.0001	0.0000		0.0001
0.0001	0.0000	0.0000		0.0000
0.0001	0.0000	0.0000		0.0000
0.0008	0.0002	0.0000		0.0002
0.0093	0.0017	0.0001		0.0018
0.0000	0.0000	0.0000		0.0000
0.0000	0.0000			0.0000
<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>







Veh_Tech	EMFAC2011 Category	Population	Total_VMT	cVMT	eVMT	Trips	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_TOTEX	TOG_DIURN	TOG_HTSK	TOG_RUNLS
All Other Buses-Dsl	All Other Buses - Dsl	21.6	955.8	955.8	0	192.2	0.0001	0.0000		0.0001			
LDA-Dsl	LDA - Dsl	29.9	1,147.2	1,147.2	0	135.4	0.0000			0.0000			
LDT1-Dsl	LDT1 - Dsl	0.0388	1.47	1.47	0	0.1788	0.0000			0.0000			
LDT2-Dsl	LDT2 - Dsl	107.7	4,092.7	4,092.7	0	497.1	0.0001			0.0001			
LHD1-Dsl	LHD1 - Dsl	836.9	27,246.4	27,246.4	0	10,527.4	0.0032	0.0001		0.0034			
LHD2-Dsl	LHD2 - Dsl	391.5	12,478.6	12,478.6	0	4,924.2	0.0018	0.0001		0.0019			
MDV-Dsl	MDV - Dsl	193.8	6,831.3	6,831.3	0	867.4	0.0000			0.0000			
MH-Dsl	MH - Dsl	95.7	892.0	892.0	0	9.57	0.0001			0.0001			
Motor Coach-Dsl	Motor Coach - Dsl	6.33	803.4	803.4	0	145.5	0.0000	0.0000		0.0000			
PTO-Dsl	PTO-Dsl	0	2,254.0	2,254.0	0		0.0001			0.0001			
SBUS-Dsl	SBUS - Dsl	48.2	1,002.5	1,002.5	0	697.9	0.0000	0.0000		0.0000			
T6 CAIRP Class 4-Dsl	T6 CAIRP small-Dsl	0.8955	65.7	65.7	0	20.6	0.0000	0.0000		0.0000			
T6 CAIRP Class 5-Dsl	T6 CAIRP small-Dsl	1.10	90.3	90.3	0	25.3	0.0000	0.0000		0.0000			
T6 CAIRP Class 6-Dsl	T6 CAIRP small-Dsl	5.00	235.1	235.1	0	114.9	0.0000	0.0000		0.0000			
T6 CAIRP Class 7-Dsl	T6 CAIRP heavy-Dsl	13.4	2,749.7	2,749.7	0	306.9	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 4-Dsl	T6 instate small-Dsl	12.3	407.5	407.5	0	175.6	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 5-Dsl	T6 instate small-Dsl	4.43	139.3	139.3	0	63.3	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 6-Dsl	T6 instate small-Dsl	30.2	949.6	949.6	0	430.5	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 7-Dsl	T6 instate heavy-Dsl	9.30	457.9	457.9	0	132.7	0.0000	0.0000		0.0000			
T6 Instate Other Class 4-Dsl	T6 instate small-Dsl	55.7	2,064.7	2,064.7	0	644.1	0.0000	0.0000		0.0000			
T6 Instate Other Class 5-Dsl	T6 instate small-Dsl	133.4	5,213.6	5,213.6	0	1,542.2	0.0000	0.0000		0.0000			
T6 Instate Other Class 6-Dsl	T6 instate small-Dsl	163.7	6,393.7	6,393.7	0	1,892.7	0.0000	0.0000		0.0000			
T6 Instate Other Class 7-Dsl	T6 instate heavy-Dsl	105.5	4,287.8	4,287.8	0	1,219.8	0.0000	0.0000		0.0000			
T6 Instate Tractor Class 6-Dsl	T6 instate small-Dsl	2.83	128.3	128.3	0	32.8	0.0000	0.0000		0.0000			
T6 Instate Tractor Class 7-Dsl	T6 instate heavy-Dsl	97.6	5,453.7	5,453.7	0	1,128.2	0.0000	0.0000		0.0000			
T6 OOS Class 4-Dsl	T6 OOS small-Dsl	1.30	96.6	96.6	0	29.8	0.0000	0.0000		0.0000			
T6 OOS Class 5-Dsl	T6 OOS small-Dsl	1.59	132.5	132.5	0	36.6	0.0000	0.0000		0.0000			
T6 OOS Class 6-Dsl	T6 OOS small-Dsl	7.22	346.3	346.3	0	166.0	0.0000	0.0000		0.0000			
T6 OOS Class 7-Dsl	T6 OOS heavy-Dsl	8.92	2,518.2	2,518.2	0	205.0	0.0000	0.0000		0.0000			
T6 Public Class 4-Dsl	T6 Public-Dsl	2.35	80.2	80.2	0	12.0	0.0000	0.0000		0.0000			
T6 Public Class 5-Dsl	T6 Public-Dsl	6.20	213.1	213.1	0	31.8	0.0000	0.0000		0.0000			
T6 Public Class 6-Dsl	T6 Public-Dsl	7.35	251.6	251.6	0	37.7	0.0000	0.0000		0.0000			
T6 Public Class 7-Dsl	T6 Public-Dsl	28.3	1,180.5	1,180.5	0	145.2	0.0000	0.0000		0.0000			
T6 Utility Class 5-Dsl	T6 Utility-Dsl	7.58	301.5	301.5	0	97.0	0.0000	0.0000		0.0000			
T6 Utility Class 6-Dsl	T6 Utility-Dsl	1.43	57.0	57.0	0	18.3	0.0000	0.0000		0.0000			
T6 Utility Class 7-Dsl	T6 Utility-Dsl	1.59	78.2	78.2	0	20.4	0.0000	0.0000		0.0000			
T7 CAIRP Class 8-Dsl	T7 CAIRP-Dsl	994.4	209,076.6	209,076.6	0	22,850.8	0.0030	0.0130		0.0160			
T7 NNOOS Class 8-Dsl	T7 NNOOS-Dsl	1,104.9	318,934.7	318,934.7	0	25,390.6	0.0044	0.0180		0.0224			
T7 NOOS Class 8-Dsl	T7 NOOS-Dsl	475.0	115,863.3	115,863.3	0	10,914.9	0.0017	0.0077		0.0094			
T7 Other Port Class 8-Dsl	T7 Other Port-Dsl	13.3	3,210.1	3,210.1	0	218.3	0.0000	0.0001		0.0001			
T7 POAK Class 8-Dsl	T7 POAK-Dsl	68.5	7,944.6	7,944.6	0	1,120.8	0.0001	0.0003		0.0004			
T7 POLA Class 8-Dsl	T7 POLA-Dsl	63.8	11,831.7	11,831.7	0	1,043.7	0.0002	0.0003		0.0004			
T7 Public Class 8-Dsl	T7 Public-Dsl	47.5	1,904.5	1,904.5	0	243.9	0.0001	0.0001		0.0001			
T7 SWCV Class 8-Dsl	T7 SWCV-Dsl	7.46	484.6	484.6	0	34.3	0.0000	0.0000		0.0000			
T7 Single Concrete/Transit Mix Class 8-Dsl	T7 Single-Dsl	1.74	108.4	108.4	0	16.4	0.0000	0.0000		0.0000			
T7 Single Dump Class 8-Dsl	T7 Single-Dsl	16.1	747.0	747.0	0	151.7	0.0000	0.0000		0.0000			
T7 Single Other Class 8-Dsl	T7 Single-Dsl	88.0	10,072.7	10,072.7	0	829.3	0.0002	0.0002		0.0004			
T7 Tractor Class 8-Dsl	T7 Tractor-Dsl	2,305.8	151,549.8	151,549.8	0	33,503.2	0.0019	0.0100		0.0119			
T7 Utility Class 8-Dsl	T7 Utility-Dsl	7.95	326.4	326.4	0	101.7	0.0000	0.0000		0.0000			
UBUS-Dsl	UBUS - Dsl	0.1718	14.8	14.8	0	0.6873	0.0000			0.0000			
<b>TOTALs</b>		<b>7,635.6</b>	<b>923,667.3</b>	<b>923,667.3</b>	<b>0.0</b>	<b>122,946.7</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

TOG_TOTAL	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_TOTEX	ROG_DIURN	ROG_HTSK	ROG_RUNLS	ROG_TOTAL	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX	NOx_RUNEX	NOx_IDLEX	NOx_STREX
0.0001	0.0000	0.0000		0.0000				0.0000	0.0002	0.0000		0.0002	0.0013	0.0000	0.0002
0.0000	0.0000			0.0000				0.0000	0.0002	0.0000		0.0000	0.0000		
0.0000	0.0000			0.0000				0.0000	0.0000			0.0000	0.0000		
0.0001	0.0001			0.0001				0.0001	0.0005			0.0005	0.0001		
0.0034	0.0029	0.0001		0.0030				0.0030	0.0075	0.0008		0.0083	0.0106	0.0011	
0.0019	0.0016	0.0000		0.0016				0.0016	0.0042	0.0004		0.0046	0.0063	0.0005	
0.0000	0.0000			0.0000				0.0000	0.0010			0.0010	0.0001		
0.0001	0.0001			0.0001				0.0001	0.0003			0.0003	0.0026		
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0004		0.0004	0.0008	0.0001	0.0002
0.0001	0.0001			0.0001				0.0001	0.0007			0.0007	0.0086		
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0004		0.0004	0.0004	0.0003	0.0005
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0000		0.0001	0.0006	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0002	0.0001	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0001	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0002		0.0003	0.0004	0.0002	0.0005
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0003	0.0001	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0005		0.0006	0.0006	0.0004	0.0008
0.0001	0.0000	0.0000		0.0001				0.0001	0.0002	0.0011		0.0014	0.0015	0.0009	0.0020
0.0001	0.0000	0.0000		0.0001				0.0001	0.0003	0.0014		0.0017	0.0019	0.0011	0.0024
0.0001	0.0000	0.0000		0.0001				0.0001	0.0003	0.0009		0.0011	0.0023	0.0009	0.0020
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0001	0.0000	0.0000		0.0001				0.0001	0.0003	0.0008		0.0011	0.0025	0.0008	0.0017
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0001	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0000		0.0001	0.0006	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0001	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0001	0.0001	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0001	0.0001	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0001	0.0001	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0160	0.0026	0.0114		0.0141				0.0141	0.0089	0.1690		0.1779	0.2772	0.0874	0.0395
0.0224	0.0039	0.0158		0.0197				0.0197	0.0132	0.2331		0.2462	0.4677	0.1864	0.0665
0.0094	0.0015	0.0068		0.0082				0.0082	0.0049	0.1002		0.1051	0.1748	0.0801	0.0286
0.0001	0.0000	0.0001		0.0001				0.0001	0.0002	0.0007		0.0010	0.0044	0.0004	0.0004
0.0004	0.0001	0.0003		0.0003				0.0003	0.0006	0.0038		0.0044	0.0113	0.0022	0.0023
0.0004	0.0001	0.0002		0.0004				0.0004	0.0009	0.0036		0.0045	0.0182	0.0021	0.0022
0.0001	0.0001	0.0001		0.0001				0.0001	0.0003	0.0009		0.0012	0.0035	0.0006	0.0014
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0002	0.0008	0.0001	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0001	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0005		0.0005	0.0010	0.0003	0.0004
0.0004	0.0002	0.0002		0.0004				0.0004	0.0010	0.0026		0.0037	0.0180	0.0018	0.0024
0.0119	0.0017	0.0088		0.0105				0.0105	0.0080	0.1298		0.1378	0.1968	0.0778	0.1236
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0004	0.0000	0.0004
0.0000	0.0000			0.0000				0.0000	0.0000			0.0000	0.0000		
0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.7	0.0	0.7	1.2	0.4	0.3

NOx_TOTEX	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CO2_TOTEX	PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_TOTEX	PM10_PMTW	PM10_PMBW	PM10_TOTAL	PM2_5_RUNEX	PM2_5_IDLEX	PM2_5_STREX	PM2_5_TOTEX
0.0015	1.08	0.0129		1.10	0.0000	0.0000		0.0000	0.0000	0.0000	0.0001	0.0000	0.0000		0.0000
0.0000	0.2290			0.2290	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.0005			0.0005	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0001	1.13			1.13	0.0000			0.0000	0.0000	0.0000	0.0001	0.0000			0.0000
0.0116	18.0	0.1086		18.2	0.0006	0.0000		0.0007	0.0004	0.0023	0.0034	0.0006	0.0000		0.0006
0.0068	9.64	0.0824		9.73	0.0004	0.0000		0.0004	0.0002	0.0013	0.0018	0.0003	0.0000		0.0004
0.0001	2.48			2.48	0.0000			0.0000	0.0001	0.0000	0.0001	0.0000			0.0000
0.0026	1.06			1.06	0.0000			0.0000	0.0000	0.0000	0.0001	0.0000			0.0000
0.0011	1.34	0.0577		1.40	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0086	4.64			4.64	0.0000			0.0000			0.0000	0.0000	0.0000		0.0000
0.0012	1.13	0.0967		1.23	0.0000	0.0000		0.0000	0.0000	0.0000	0.0001	0.0000	0.0000		0.0000
0.0000	0.0729	0.0005		0.0734	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.1002	0.0006		0.1008	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0001	0.2606	0.0028		0.2634	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0007	2.69	0.0073		2.70	0.0000	0.0000		0.0000	0.0000	0.0001	0.0002	0.0000	0.0000		0.0000
0.0004	0.4647	0.0236		0.4882	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0002	0.1591	0.0085		0.1676	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0011	1.08	0.0578		1.14	0.0000	0.0578		0.0000	0.0000	0.0000	0.0001	0.0000	0.0000		0.0000
0.0006	0.5366	0.0186		0.5552	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0018	2.28	0.1147		2.40	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0044	5.76	0.2747		6.04	0.0000	0.0000		0.0000	0.0001	0.0003	0.0003	0.0000	0.0000		0.0000
0.0054	7.06	0.3371		7.40	0.0000	0.3371		0.0000	0.0001	0.0003	0.0004	0.0000	0.0000		0.0000
0.0051	4.76	0.2283		4.99	0.0000	0.0000		0.0000	0.0001	0.0002	0.0003	0.0000	0.0000		0.0000
0.0001	0.1422	0.0058		0.1480	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0050	5.48	0.2044		5.69	0.0000	0.0000		0.0000	0.0001	0.0003	0.0004	0.0000	0.0000		0.0000
0.0000	0.1006	0.0007		0.1013	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0001	0.1381	0.0008		0.1389	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0002	0.3601	0.0038		0.3639	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0008	2.36	0.0047		2.36	0.0000	0.0000		0.0000	0.0000	0.0001	0.0002	0.0000	0.0000		0.0000
0.0001	0.0956	0.0072		0.1028	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0002	0.2551	0.0190		0.2741	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0003	0.3002	0.0224		0.3226	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0012	1.39	0.0846		1.47	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0002	0.3352	0.0117		0.3469	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.0634	0.0022		0.0656	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.0870	0.0024		0.0895	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.4041	292.5	21.8		314.3	0.0068	0.0000		0.0069	0.0083	0.0189	0.0340	0.0065	0.0000		0.0066
0.7206	427.0	28.9		455.9	0.0102	0.0001		0.0103	0.0127	0.0288	0.0517	0.0098	0.0001		0.0099
0.2835	155.0	12.4		167.4	0.0039	0.0000		0.0040	0.0046	0.0105	0.0190	0.0038	0.0000		0.0038
0.0053	4.82	0.0953		4.91	0.0001	0.0000		0.0001	0.0001	0.0003	0.0005	0.0001	0.0000		0.0001
0.0157	11.9	0.4893		12.4	0.0001	0.4893		0.0002	0.0001	0.0003	0.0008	0.0013	0.0001		0.0001
0.0226	17.9	0.4618		18.4	0.0002	0.0000		0.0002	0.0005	0.0012	0.0019	0.0002	0.0000		0.0002
0.0056	3.35	0.1332		3.49	0.0000	0.0000		0.0000	0.0001	0.0002	0.0003	0.0000	0.0000		0.0000
0.0012	1.78	0.0248		1.80	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0002	0.1716	0.0070		0.1786	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0016	1.21	0.0688		1.28	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0222	16.9	0.4175		17.3	0.0002	0.0000		0.0002	0.0004	0.0009	0.0016	0.0002	0.0000		0.0002
0.3982	211.2	16.9		228.1	0.0036	0.0000		0.0037	0.0060	0.0144	0.0240	0.0035	0.0000		0.0035
0.0009	0.5511	0.0116		0.5628	0.0000	0.0000		0.0000	0.0000	0.0000	0.0001	0.0000	0.0000		0.0000
0.0000	0.0107			0.0107	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000			0.0000
1.9	1,221.4	83.5	0.0	1,304.9	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0

PM2_5_PMTW	PM2_5_PMBW	PM2_5_TOTAL	SOx_RUNEX	SOx_IDLEX	SOx_STREX	SOx_TOTEX	Fuel_GAS	Fuel_DSL	Fuel_NG
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0986	
0.0000	0.0000	0.0000	0.0000			0.0000		0.0206	
0.0000	0.0000	0.0000	0.0000			0.0000		0.0000	
0.0000	0.0000	0.0000	0.0000			0.0000		0.1015	
0.0001	0.0008	0.0015	0.0002	0.0000		0.0002		1.63	
0.0000	0.0004	0.0008	0.0001	0.0000		0.0001		0.8753	
0.0000	0.0000	0.0000	0.0000			0.0000		0.2231	
0.0000	0.0000	0.0000	0.0000			0.0000		0.0957	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1261	
		0.0000	0.0000	0.0000		0.0000		0.4180	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1103	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0066	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0091	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0237	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.2431	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0439	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0151	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1027	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0500	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.2158	
0.0000	0.0001	0.0001	0.0001	0.0000		0.0001		0.5435	
0.0000	0.0001	0.0002	0.0001	0.0000		0.0001		0.6662	
0.0000	0.0001	0.0001	0.0000	0.0000		0.0000		0.4487	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0133	
0.0000	0.0001	0.0001	0.0001	0.0000		0.0001		0.5117	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0091	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0125	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0327	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.2127	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0093	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0247	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0290	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1323	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0312	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0059	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0081	
0.0021	0.0066	0.0152	0.0028	0.0002		0.0030		28.3	
0.0032	0.0101	0.0231	0.0041	0.0003		0.0043		41.0	
0.0011	0.0037	0.0086	0.0015	0.0001		0.0016		15.1	
0.0000	0.0001	0.0002	0.0000	0.0000		0.0000		0.4420	
0.0001	0.0003	0.0005	0.0001	0.0000		0.0001		1.11	
0.0001	0.0004	0.0008	0.0002	0.0000		0.0002		1.65	
0.0000	0.0001	0.0001	0.0000	0.0000		0.0000		0.3137	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.1624	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0161	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1150	
0.0001	0.0003	0.0007	0.0002	0.0000		0.0002		1.55	
0.0015	0.0050	0.0100	0.0020	0.0002		0.0022		20.5	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0507	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0010	
0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	117.4	0.0







Veh_Tech	EMFAC2011 Category	Population	Total_VMT	cVMT	eVMT	Trips	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_TOTEX	TOG_DIURN	TOG_HTSK	TOG_RUNLS
All Other Buses-Dsl	All Other Buses - Dsl	22.3	988.1	988.1	0	198.7	0.0001	0.0000		0.0001			
LDA-Dsl	LDA - Dsl	31.0	1,186.0	1,186.0	0	140.0	0.0000			0.0000			
LDT1-Dsl	LDT1 - Dsl	0.0401	1.52	1.52	0	0.1848	0.0000			0.0000			
LDT2-Dsl	LDT2 - Dsl	111.3	4,231.2	4,231.2	0	513.9	0.0001			0.0001			
LHD1-Dsl	LHD1 - Dsl	865.2	28,168.0	28,168.0	0	10,883.5	0.0034	0.0001		0.0035			
LHD2-Dsl	LHD2 - Dsl	404.7	12,900.7	12,900.7	0	5,090.7	0.0019	0.0001		0.0019			
MDV-Dsl	MDV - Dsl	200.3	7,062.3	7,062.3	0	896.8	0.0000			0.0000			
MH-Dsl	MH - Dsl	99.0	922.2	922.2	0	9.90	0.0001			0.0001			
Motor Coach-Dsl	Motor Coach - Dsl	6.54	830.6	830.6	0	150.4	0.0000	0.0000		0.0000			
PTO-Dsl	PTO-Dsl	0	2,330.2	2,330.2	0		0.0001			0.0001			
SBUS-Dsl	SBUS - Dsl	49.8	1,036.4	1,036.4	0	721.6	0.0000	0.0000		0.0000			
T6 CAIRP Class 4-Dsl	T6 CAIRP small-Dsl	0.9258	68.0	68.0	0	21.3	0.0000	0.0000		0.0000			
T6 CAIRP Class 5-Dsl	T6 CAIRP small-Dsl	1.14	93.3	93.3	0	26.1	0.0000	0.0000		0.0000			
T6 CAIRP Class 6-Dsl	T6 CAIRP small-Dsl	5.17	243.1	243.1	0	118.8	0.0000	0.0000		0.0000			
T6 CAIRP Class 7-Dsl	T6 CAIRP heavy-Dsl	13.8	2,842.7	2,842.7	0	317.2	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 4-Dsl	T6 instate small-Dsl	12.7	421.3	421.3	0	181.5	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 5-Dsl	T6 instate small-Dsl	4.58	144.1	144.1	0	65.4	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 6-Dsl	T6 instate small-Dsl	31.2	981.7	981.7	0	445.1	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 7-Dsl	T6 instate heavy-Dsl	9.61	473.4	473.4	0	137.2	0.0000	0.0000		0.0000			
T6 Instate Other Class 4-Dsl	T6 instate small-Dsl	57.6	2,134.5	2,134.5	0	665.9	0.0000	0.0000		0.0000			
T6 Instate Other Class 5-Dsl	T6 instate small-Dsl	137.9	5,389.9	5,389.9	0	1,594.4	0.0000	0.0000		0.0001			
T6 Instate Other Class 6-Dsl	T6 instate small-Dsl	169.3	6,610.0	6,610.0	0	1,956.8	0.0000	0.0000		0.0001			
T6 Instate Other Class 7-Dsl	T6 instate heavy-Dsl	109.1	4,432.9	4,432.9	0	1,261.0	0.0000	0.0000		0.0001			
T6 Instate Tractor Class 6-Dsl	T6 instate small-Dsl	2.93	132.7	132.7	0	33.9	0.0000	0.0000		0.0000			
T6 Instate Tractor Class 7-Dsl	T6 instate heavy-Dsl	100.9	5,638.1	5,638.1	0	1,166.3	0.0000	0.0000		0.0001			
T6 OOS Class 4-Dsl	T6 OOS small-Dsl	1.34	99.9	99.9	0	30.8	0.0000	0.0000		0.0000			
T6 OOS Class 5-Dsl	T6 OOS small-Dsl	1.65	137.0	137.0	0	37.8	0.0000	0.0000		0.0000			
T6 OOS Class 6-Dsl	T6 OOS small-Dsl	7.47	358.0	358.0	0	171.6	0.0000	0.0000		0.0000			
T6 OOS Class 7-Dsl	T6 OOS heavy-Dsl	9.22	2,603.4	2,603.4	0	211.9	0.0000	0.0000		0.0000			
T6 Public Class 4-Dsl	T6 Public-Dsl	2.43	82.9	82.9	0	12.5	0.0000	0.0000		0.0000			
T6 Public Class 5-Dsl	T6 Public-Dsl	6.41	220.3	220.3	0	32.9	0.0000	0.0000		0.0000			
T6 Public Class 6-Dsl	T6 Public-Dsl	7.60	260.1	260.1	0	39.0	0.0000	0.0000		0.0000			
T6 Public Class 7-Dsl	T6 Public-Dsl	29.3	1,220.4	1,220.4	0	150.1	0.0000	0.0000		0.0000			
T6 Utility Class 5-Dsl	T6 Utility-Dsl	7.84	311.7	311.7	0	100.3	0.0000	0.0000		0.0000			
T6 Utility Class 6-Dsl	T6 Utility-Dsl	1.48	58.9	58.9	0	19.0	0.0000	0.0000		0.0000			
T6 Utility Class 7-Dsl	T6 Utility-Dsl	1.65	80.8	80.8	0	21.1	0.0000	0.0000		0.0000			
T7 CAIRP Class 8-Dsl	T7 CAIRP-Dsl	1,028.0	216,148.4	216,148.4	0	23,623.7	0.0031	0.0135		0.0166			
T7 NNOOS Class 8-Dsl	T7 NNOOS-Dsl	1,142.3	329,722.4	329,722.4	0	26,249.4	0.0046	0.0186		0.0231			
T7 NOOS Class 8-Dsl	T7 NOOS-Dsl	491.0	119,782.3	119,782.3	0	11,284.1	0.0017	0.0080		0.0097			
T7 Other Port Class 8-Dsl	T7 Other Port-Dsl	13.8	3,318.7	3,318.7	0	225.7	0.0000	0.0001		0.0001			
T7 POAK Class 8-Dsl	T7 POAK-Dsl	70.8	8,213.3	8,213.3	0	1,158.7	0.0001	0.0003		0.0004			
T7 POLA Class 8-Dsl	T7 POLA-Dsl	66.0	12,231.9	12,231.9	0	1,079.0	0.0002	0.0003		0.0004			
T7 Public Class 8-Dsl	T7 Public-Dsl	49.1	1,968.9	1,968.9	0	252.1	0.0001	0.0001		0.0001			
T7 SWCV Class 8-Dsl	T7 SWCV-Dsl	7.71	500.9	500.9	0	35.5	0.0000	0.0000		0.0000			
T7 Single Concrete/Transit Mix Class 8-Dsl	T7 Single-Dsl	1.80	112.1	112.1	0	16.9	0.0000	0.0000		0.0000			
T7 Single Dump Class 8-Dsl	T7 Single-Dsl	16.6	772.2	772.2	0	156.8	0.0000	0.0000		0.0000			
T7 Single Other Class 8-Dsl	T7 Single-Dsl	91.0	10,413.4	10,413.4	0	857.3	0.0002	0.0002		0.0004			
T7 Tractor Class 8-Dsl	T7 Tractor-Dsl	2,383.8	156,675.8	156,675.8	0	34,636.4	0.0020	0.0103		0.0123			
T7 Utility Class 8-Dsl	T7 Utility-Dsl	8.22	337.5	337.5	0	105.2	0.0000	0.0000		0.0000			
UBUS-Dsl	UBUS - Dsl	0.1776	15.3	15.3	0	0.7106	0.0000			0.0000			
<b>TOTALs</b>		<b>7,893.9</b>	<b>954,909.4</b>	<b>954,909.4</b>	<b>0.0</b>	<b>127,105.2</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

TOG_TOTAL	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_TOTEX	ROG_DIURN	ROG_HTSK	ROG_RUNLS	ROG_TOTAL	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX	NOx_RUNEX	NOx_IDLEX	NOx_STREX
0.0001	0.0001	0.0000		0.0001				0.0001	0.0002	0.0001		0.0002	0.0013	0.0000	0.0002
0.0000	0.0000			0.0000				0.0000	0.0002			0.0000	0.0000		
0.0000	0.0000			0.0000				0.0000	0.0000			0.0000	0.0000		
0.0001	0.0001			0.0001				0.0001	0.0006			0.0006	0.0001		
0.0035	0.0029	0.0001		0.0031				0.0031	0.0077	0.0009		0.0086	0.0109	0.0011	
0.0019	0.0016	0.0000		0.0017				0.0017	0.0043	0.0004		0.0047	0.0065	0.0005	
0.0000	0.0000			0.0000				0.0000	0.0010			0.0010	0.0001		
0.0001	0.0001			0.0001				0.0001	0.0003			0.0003	0.0027		
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0004		0.0005	0.0009	0.0001	0.0002
0.0001	0.0001			0.0001				0.0001	0.0007			0.0007	0.0088		
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0004		0.0004	0.0004	0.0003	0.0005
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0000		0.0001	0.0006	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0002	0.0001	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0001	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0002		0.0003	0.0004	0.0002	0.0005
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0003	0.0001	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0005		0.0006	0.0006	0.0004	0.0009
0.0001	0.0000	0.0000		0.0001				0.0001	0.0002	0.0012		0.0014	0.0016	0.0009	0.0020
0.0001	0.0000	0.0000		0.0001				0.0001	0.0003	0.0014		0.0017	0.0020	0.0011	0.0025
0.0001	0.0000	0.0000		0.0001				0.0001	0.0003	0.0009		0.0012	0.0023	0.0009	0.0020
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0001	0.0000	0.0000		0.0001				0.0001	0.0003	0.0008		0.0012	0.0026	0.0008	0.0018
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0001	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0000		0.0001	0.0007	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0001	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0001	0.0001	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0001	0.0001	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0003		0.0004	0.0006	0.0004	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0001	0.0001	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0001	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0166	0.0027	0.0118		0.0145				0.0145	0.0092	0.1747		0.1839	0.2866	0.0903	0.0408
0.0231	0.0040	0.0163		0.0203				0.0203	0.0136	0.2409		0.2546	0.4836	0.1927	0.0688
0.0097	0.0015	0.0070		0.0085				0.0085	0.0051	0.1036		0.1087	0.1807	0.0828	0.0296
0.0001	0.0000	0.0001		0.0001				0.0001	0.0002	0.0008		0.0010	0.0045	0.0004	0.0005
0.0004	0.0001	0.0003		0.0004				0.0004	0.0006	0.0039		0.0045	0.0117	0.0022	0.0023
0.0004	0.0001	0.0002		0.0004				0.0004	0.0009	0.0037		0.0046	0.0188	0.0022	0.0023
0.0001	0.0001	0.0001		0.0001				0.0001	0.0003	0.0009		0.0012	0.0036	0.0007	0.0015
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0002		0.0002	0.0009	0.0001	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0001	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0005		0.0006	0.0010	0.0003	0.0004
0.0004	0.0002	0.0002		0.0004				0.0004	0.0010	0.0027		0.0038	0.0186	0.0018	0.0025
0.0123	0.0018	0.0091		0.0108				0.0108	0.0082	0.1342		0.1424	0.2035	0.0805	0.1278
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0004	0.0000	0.0005
0.0000	0.0000			0.0000				0.0000	0.0000			0.0000	0.0000		
0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.7	0.0	0.7	1.3	0.5	0.3

NOx_TOTEX	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CO2_TOTEX	PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_TOTEX	PM10_PMTW	PM10_PMBW	PM10_TOTAL	PM2_5_RUNEX	PM2_5_IDLEX	PM2_5_STREX	PM2_5_TOTEX
0.0016	1.12	0.0133		1.13	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0000	0.2367			0.2367	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.0006			0.0006	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0001	1.17			1.17	0.0000			0.0000	0.0000	0.0000	0.0001	0.0000			0.0000
0.0120	18.7	0.1123		18.8	0.0007	0.0000		0.0007	0.0004	0.0024	0.0035	0.0006	0.0000		0.0007
0.0070	9.97	0.0852		10.1	0.0004	0.0000		0.0004	0.0002	0.0013	0.0018	0.0004	0.0000		0.0004
0.0001	2.56			2.56	0.0000			0.0000	0.0001	0.0000	0.0001	0.0000			0.0000
0.0027	1.10			1.10	0.0000			0.0000	0.0000	0.0000	0.0001	0.0000			0.0000
0.0012	1.39	0.0597		1.45	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0088	4.80			4.80	0.0000			0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
0.0012	1.17	0.1000		1.27	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0000	0.0754	0.0005		0.0759	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.1036	0.0006		0.1042	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0001	0.2694	0.0029		0.2723	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0008	2.78	0.0076		2.79	0.0000	0.0000		0.0000	0.0000	0.0001	0.0002	0.0000	0.0000		0.0000
0.0004	0.4804	0.0244		0.5048	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0002	0.1645	0.0088		0.1732	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0011	1.12	0.0597		1.18	0.0000	0.0597		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0006	0.5547	0.0192		0.5739	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0019	2.36	0.1186		2.48	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0045	5.96	0.2840		6.24	0.0000	0.0000		0.0000	0.0001	0.0003	0.0004	0.0000	0.0000		0.0000
0.0056	7.30	0.3485		7.65	0.0000	0.0000		0.0000	0.0001	0.0003	0.0004	0.0000	0.0000		0.0000
0.0053	4.92	0.2360		5.15	0.0000	0.0000		0.0000	0.0001	0.0002	0.0003	0.0000	0.0000		0.0000
0.0001	0.1470	0.0060		0.1530	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0052	5.67	0.2113		5.88	0.0000	0.0000		0.0000	0.0001	0.0003	0.0004	0.0000	0.0000		0.0000
0.0000	0.1040	0.0007		0.1047	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0001	0.1427	0.0009		0.1436	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0002	0.3722	0.0039		0.3762	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0008	2.44	0.0048		2.44	0.0000	0.0048		0.0000	0.0000	0.0001	0.0002	0.0000	0.0000		0.0000
0.0001	0.0989	0.0075		0.1063	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0002	0.2637	0.0196		0.2834	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0003	0.3103	0.0232		0.3335	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0012	1.43	0.0875		1.52	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0002	0.3465	0.0120		0.3586	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.0655	0.0023		0.0678	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.0900	0.0025		0.0925	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.4178	302.3	22.6		324.9	0.0070	0.0001		0.0071	0.0070	0.0086	0.0195	0.0352	0.0067		0.0068
0.7450	441.4	29.9		471.3	0.0106	0.0001		0.0107	0.0131	0.0297	0.0535	0.0101	0.0001		0.0102
0.2931	160.3	12.8		173.1	0.0041	0.0000		0.0041	0.0048	0.0108	0.0197	0.0039	0.0000		0.0039
0.0054	4.98	0.0985		5.08	0.0001	0.0000		0.0001	0.0001	0.0003	0.0005	0.0001	0.0000		0.0001
0.0162	12.3	0.5058		12.8	0.0002	0.0000		0.0002	0.0002	0.0003	0.0009	0.0013	0.0001		0.0001
0.0234	18.5	0.4774		19.0	0.0003	0.0000		0.0003	0.0005	0.0013	0.0020	0.0002	0.0000		0.0002
0.0058	3.47	0.1377		3.60	0.0000	0.0000		0.0000	0.0001	0.0002	0.0003	0.0000	0.0000		0.0000
0.0012	1.84	0.0256		1.87	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0002	0.1774	0.0072		0.1846	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0017	1.25	0.0711		1.32	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0230	17.4	0.4316		17.9	0.0002	0.0000		0.0002	0.0004	0.0010	0.0016	0.0002	0.0000		0.0002
0.4117	218.4	17.4		235.8	0.0037	0.0000		0.0038	0.0062	0.0148	0.0248	0.0036	0.0000		0.0036
0.0009	0.5698	0.0120		0.5818	0.0000	0.0000		0.0000	0.0000	0.0000	0.0001	0.0000	0.0000		0.0000
0.0000	0.0111			0.0111	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000			0.0000
2.0	1,262.7	86.3	0.0	1,349.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0

PM2_5_PMTW	PM2_5_PMBW	PM2_5_TOTAL	SOx_RUNEX	SOx_IDLEX	SOx_STREX	SOx_TOTEX	Fuel_GAS	Fuel_DSL	Fuel_NG
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1019	
0.0000	0.0000	0.0000	0.0000			0.0000		0.0213	
0.0000	0.0000	0.0000	0.0000			0.0000		0.0001	
0.0000	0.0000	0.0000	0.0000			0.0000		0.1049	
0.0001	0.0008	0.0016	0.0002	0.0000		0.0002		1.69	
0.0000	0.0005	0.0009	0.0001	0.0000		0.0001		0.9049	
0.0000	0.0000	0.0000	0.0000			0.0000		0.2306	
0.0000	0.0000	0.0001	0.0000			0.0000		0.0989	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1304	
		0.0000	0.0000			0.0000		0.4321	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1140	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0068	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0094	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0245	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.2513	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0454	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0156	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1061	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0517	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.2231	
0.0000	0.0001	0.0001	0.0001	0.0000		0.0001		0.5619	
0.0000	0.0001	0.0002	0.0001	0.0000		0.0001		0.6887	
0.0000	0.0001	0.0001	0.0000	0.0000		0.0000		0.4639	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0138	
0.0000	0.0001	0.0001	0.0001	0.0000		0.0001		0.5291	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0094	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0129	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0339	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.2199	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0096	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0255	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0300	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1368	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0323	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0061	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0083	
0.0021	0.0068	0.0157	0.0029	0.0002		0.0031		29.2	
0.0033	0.0104	0.0239	0.0042	0.0003		0.0045		42.4	
0.0012	0.0038	0.0089	0.0015	0.0001		0.0017		15.6	
0.0000	0.0001	0.0002	0.0000	0.0000		0.0000		0.4570	
0.0001	0.0003	0.0005	0.0001	0.0000		0.0001		1.15	
0.0001	0.0004	0.0008	0.0002	0.0000		0.0002		1.71	
0.0000	0.0001	0.0001	0.0000	0.0000		0.0000		0.3243	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.1679	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0166	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1189	
0.0001	0.0003	0.0007	0.0002	0.0000		0.0002		1.61	
0.0016	0.0052	0.0104	0.0021	0.0002		0.0023		21.2	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0524	
0.0000	0.0000	0.0000	0.0000			0.0000		0.0010	
0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	121.4	0.0





Veh_Tech	EMFAC2011 Category	Population	Total_VMT	cVMT	eVMT	Trips	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_TOTEX	TOG_DIURN	TOG_HTSK	TOG_RUNLS
All Other Buses-Dsl	All Other Buses - Dsl	22.3	985.1	985.1	0	198.1	0.0001	0.0000		0.0001			
LDA-Dsl	LDA - Dsl	30.9	1,182.4	1,182.4	0	139.5	0.0000			0.0000			
LDT1-Dsl	LDT1 - Dsl	0.0400	1.51	1.51	0	0.1843	0.0000			0.0000			
LDT2-Dsl	LDT2 - Dsl	111.0	4,218.2	4,218.2	0	512.4	0.0001			0.0001			
LHD1-Dsl	LHD1 - Dsl	862.6	28,081.8	28,081.8	0	10,850.2	0.0033	0.0001		0.0035			
LHD2-Dsl	LHD2 - Dsl	403.5	12,861.2	12,861.2	0	5,075.2	0.0019	0.0001		0.0019			
MDV-Dsl	MDV - Dsl	199.7	7,040.7	7,040.7	0	894.0	0.0000			0.0000			
MH-Dsl	MH - Dsl	98.7	919.4	919.4	0	9.87	0.0001			0.0001			
Motor Coach-Dsl	Motor Coach - Dsl	6.52	828.1	828.1	0	149.9	0.0000	0.0000		0.0000			
PTO-Dsl	PTO-Dsl	0	2,323.1	2,323.1	0		0.0001			0.0001			
SBUS-Dsl	SBUS - Dsl	49.7	1,033.2	1,033.2	0	719.3	0.0000	0.0000		0.0000			
T6 CAIRP Class 4-Dsl	T6 CAIRP small-Dsl	0.9230	67.7	67.7	0	21.2	0.0000	0.0000		0.0000			
T6 CAIRP Class 5-Dsl	T6 CAIRP small-Dsl	1.13	93.1	93.1	0	26.1	0.0000	0.0000		0.0000			
T6 CAIRP Class 6-Dsl	T6 CAIRP small-Dsl	5.15	242.3	242.3	0	118.4	0.0000	0.0000		0.0000			
T6 CAIRP Class 7-Dsl	T6 CAIRP heavy-Dsl	13.8	2,834.0	2,834.0	0	316.3	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 4-Dsl	T6 instate small-Dsl	12.7	420.0	420.0	0	181.0	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 5-Dsl	T6 instate small-Dsl	4.57	143.6	143.6	0	65.2	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 6-Dsl	T6 instate small-Dsl	31.1	978.7	978.7	0	443.7	0.0000	0.0000		0.0000			
T6 Instate Delivery Class 7-Dsl	T6 instate heavy-Dsl	9.59	471.9	471.9	0	136.8	0.0000	0.0000		0.0000			
T6 Instate Other Class 4-Dsl	T6 instate small-Dsl	57.4	2,128.0	2,128.0	0	663.8	0.0000	0.0000		0.0000			
T6 Instate Other Class 5-Dsl	T6 instate small-Dsl	137.5	5,373.4	5,373.4	0	1,589.5	0.0000	0.0000		0.0001			
T6 Instate Other Class 6-Dsl	T6 instate small-Dsl	168.8	6,589.7	6,589.7	0	1,950.8	0.0000	0.0000		0.0001			
T6 Instate Other Class 7-Dsl	T6 instate heavy-Dsl	108.7	4,419.3	4,419.3	0	1,257.1	0.0000	0.0000		0.0001			
T6 Instate Tractor Class 6-Dsl	T6 instate small-Dsl	2.92	132.3	132.3	0	33.8	0.0000	0.0000		0.0000			
T6 Instate Tractor Class 7-Dsl	T6 instate heavy-Dsl	100.6	5,620.9	5,620.9	0	1,162.8	0.0000	0.0000		0.0001			
T6 OOS Class 4-Dsl	T6 OOS small-Dsl	1.34	99.6	99.6	0	30.7	0.0000	0.0000		0.0000			
T6 OOS Class 5-Dsl	T6 OOS small-Dsl	1.64	136.6	136.6	0	37.7	0.0000	0.0000		0.0000			
T6 OOS Class 6-Dsl	T6 OOS small-Dsl	7.45	356.9	356.9	0	171.1	0.0000	0.0000		0.0000			
T6 OOS Class 7-Dsl	T6 OOS heavy-Dsl	9.19	2,595.5	2,595.5	0	211.3	0.0000	0.0000		0.0000			
T6 Public Class 4-Dsl	T6 Public-Dsl	2.42	82.6	82.6	0	12.4	0.0000	0.0000		0.0000			
T6 Public Class 5-Dsl	T6 Public-Dsl	6.39	219.6	219.6	0	32.8	0.0000	0.0000		0.0000			
T6 Public Class 6-Dsl	T6 Public-Dsl	7.58	259.3	259.3	0	38.9	0.0000	0.0000		0.0000			
T6 Public Class 7-Dsl	T6 Public-Dsl	29.2	1,216.6	1,216.6	0	149.6	0.0000	0.0000		0.0000			
T6 Utility Class 5-Dsl	T6 Utility-Dsl	7.81	310.7	310.7	0	100.0	0.0000	0.0000		0.0000			
T6 Utility Class 6-Dsl	T6 Utility-Dsl	1.48	58.7	58.7	0	18.9	0.0000	0.0000		0.0000			
T6 Utility Class 7-Dsl	T6 Utility-Dsl	1.64	80.6	80.6	0	21.0	0.0000	0.0000		0.0000			
T7 CAIRP Class 8-Dsl	T7 CAIRP-Dsl	1,024.9	215,486.9	215,486.9	0	23,551.4	0.0031	0.0134		0.0165			
T7 NNOOS Class 8-Dsl	T7 NNOOS-Dsl	1,138.8	328,713.3	328,713.3	0	26,169.1	0.0046	0.0185		0.0231			
T7 NOOS Class 8-Dsl	T7 NOOS-Dsl	489.5	119,415.7	119,415.7	0	11,249.6	0.0017	0.0080		0.0097			
T7 Other Port Class 8-Dsl	T7 Other Port-Dsl	13.8	3,308.5	3,308.5	0	225.0	0.0000	0.0001		0.0001			
T7 POAK Class 8-Dsl	T7 POAK-Dsl	70.6	8,188.2	8,188.2	0	1,155.2	0.0001	0.0003		0.0004			
T7 POLA Class 8-Dsl	T7 POLA-Dsl	65.8	12,194.5	12,194.5	0	1,075.7	0.0002	0.0003		0.0004			
T7 Public Class 8-Dsl	T7 Public-Dsl	49.0	1,962.9	1,962.9	0	251.4	0.0001	0.0001		0.0001			
T7 SWCV Class 8-Dsl	T7 SWCV-Dsl	7.69	499.4	499.4	0	35.4	0.0000	0.0000		0.0000			
T7 Single Concrete/Transit Mix Class 8-Dsl	T7 Single-Dsl	1.79	111.7	111.7	0	16.9	0.0000	0.0000		0.0000			
T7 Single Dump Class 8-Dsl	T7 Single-Dsl	16.6	769.9	769.9	0	156.3	0.0000	0.0000		0.0000			
T7 Single Other Class 8-Dsl	T7 Single-Dsl	90.7	10,381.6	10,381.6	0	854.7	0.0002	0.0002		0.0004			
T7 Tractor Class 8-Dsl	T7 Tractor-Dsl	2,376.5	156,196.3	156,196.3	0	34,530.4	0.0020	0.0103		0.0123			
T7 Utility Class 8-Dsl	T7 Utility-Dsl	8.19	336.4	336.4	0	104.9	0.0000	0.0000		0.0000			
UBUS-Dsl	UBUS - Dsl	0.1771	15.3	15.3	0	0.7084	0.0000			0.0000			
<b>TOTALs</b>		<b>7,869.7</b>	<b>951,987.0</b>	<b>951,987.0</b>	<b>0.0</b>	<b>126,716.2</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

TOG_TOTAL	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_TOTEX	ROG_DIURN	ROG_HTSK	ROG_RUNLS	ROG_TOTAL	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX	NOx_RUNEX	NOx_IDLEX	NOx_STREX
0.0001	0.0000	0.0000		0.0001				0.0001	0.0002	0.0001		0.0002	0.0013	0.0000	0.0002
0.0000	0.0000			0.0000				0.0000	0.0002			0.0000	0.0000		
0.0000	0.0000			0.0000				0.0000	0.0000			0.0000	0.0000		
0.0001	0.0001			0.0001				0.0001	0.0006			0.0006	0.0001		
0.0035	0.0029	0.0001		0.0030				0.0030	0.0077	0.0009		0.0086	0.0109	0.0011	
0.0019	0.0016	0.0000		0.0017				0.0017	0.0043	0.0004		0.0047	0.0065	0.0005	
0.0000	0.0000			0.0000				0.0000	0.0010			0.0010	0.0001		
0.0001	0.0001			0.0001				0.0001	0.0003			0.0003	0.0027		
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0004		0.0005	0.0009	0.0001	0.0002
0.0001	0.0001			0.0001				0.0001	0.0007			0.0007	0.0088		
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0004		0.0004	0.0004	0.0003	0.0005
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0000		0.0001	0.0006	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0002	0.0001	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0001	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0002		0.0003	0.0004	0.0002	0.0005
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0003	0.0001	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0005		0.0006	0.0006	0.0004	0.0009
0.0001	0.0000	0.0000		0.0001				0.0001	0.0002	0.0011		0.0014	0.0016	0.0009	0.0020
0.0001	0.0000	0.0000		0.0001				0.0001	0.0003	0.0014		0.0017	0.0020	0.0011	0.0025
0.0001	0.0000	0.0000		0.0001				0.0001	0.0003	0.0009		0.0012	0.0023	0.0009	0.0020
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0001	0.0000	0.0000		0.0001				0.0001	0.0003	0.0008		0.0012	0.0026	0.0008	0.0018
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0001	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0000		0.0001	0.0007	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0001	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0001	0.0001	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0001	0.0001	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0003		0.0004	0.0006	0.0004	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0001	0.0001	0.0000	0.0001
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
0.0165	0.0027	0.0118		0.0145				0.0145	0.0092	0.1742		0.1833	0.2857	0.0901	0.0407
0.0231	0.0040	0.0163		0.0203				0.0203	0.0136	0.2402		0.2538	0.4821	0.1921	0.0685
0.0097	0.0015	0.0070		0.0085				0.0085	0.0051	0.1033		0.1083	0.1801	0.0826	0.0295
0.0001	0.0000	0.0001		0.0001				0.0001	0.0002	0.0008		0.0010	0.0045	0.0004	0.0005
0.0004	0.0001	0.0003		0.0004				0.0004	0.0006	0.0039		0.0045	0.0116	0.0022	0.0023
0.0004	0.0001	0.0002		0.0004				0.0004	0.0009	0.0037		0.0046	0.0188	0.0022	0.0023
0.0001	0.0001	0.0001		0.0001				0.0001	0.0003	0.0009		0.0012	0.0036	0.0007	0.0015
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0002		0.0002	0.0009	0.0001	0.0002
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0001	0.0000	0.0000
0.0000	0.0000	0.0000		0.0000				0.0000	0.0001	0.0005		0.0006	0.0010	0.0003	0.0004
0.0004	0.0002	0.0002		0.0004				0.0004	0.0010	0.0027		0.0038	0.0186	0.0018	0.0025
0.0123	0.0018	0.0091		0.0108				0.0108	0.0082	0.1338		0.1420	0.2028	0.0802	0.1274
0.0000	0.0000	0.0000		0.0000				0.0000	0.0000	0.0001		0.0001	0.0004	0.0000	0.0005
0.0000	0.0000			0.0000				0.0000	0.0000			0.0000	0.0000		
0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.7	0.0	0.7	1.3	0.5	0.3



NOx_TOTEX	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CO2_TOTEX	PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_TOTEX	PM10_PMTW	PM10_PMBW	PM10_TOTAL	PM2_5_RUNEX	PM2_5_IDLEX	PM2_5_STREX	PM2_5_TOTEX
0.0016	1.12	0.0133		1.13	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0000	0.2360			0.2360	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.0006			0.0006	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0001	1.16			1.16	0.0000			0.0000	0.0000	0.0000	0.0001	0.0000			0.0000
0.0120	18.6	0.1119		18.7	0.0007	0.0000		0.0007	0.0004	0.0024	0.0035	0.0006	0.0000		0.0006
0.0070	9.94	0.0849		10.0	0.0004	0.0000		0.0004	0.0002	0.0013	0.0018	0.0004	0.0000		0.0004
0.0001	2.55			2.55	0.0000			0.0000	0.0001	0.0000	0.0001	0.0000			0.0000
0.0027	1.10			1.10	0.0000			0.0000	0.0000	0.0000	0.0001	0.0000			0.0000
0.0012	1.39	0.0595		1.44	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0088	4.79			4.79	0.0000			0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
0.0012	1.16	0.0997		1.26	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0000	0.0751	0.0005		0.0757	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.1032	0.0006		0.1039	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0001	0.2686	0.0029		0.2715	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0008	2.78	0.0076		2.78	0.0000	0.0000		0.0000	0.0000	0.0001	0.0002	0.0000	0.0000		0.0000
0.0004	0.4789	0.0243		0.5032	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0002	0.1639	0.0087		0.1727	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0011	1.12	0.0595		1.18	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0006	0.5530	0.0192		0.5722	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0019	2.35	0.1183		2.47	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0045	5.94	0.2832		6.22	0.0000	0.0000		0.0000	0.0001	0.0003	0.0004	0.0000	0.0000		0.0000
0.0056	7.28	0.3474		7.63	0.0000	0.0000		0.0000	0.0001	0.0003	0.0004	0.0000	0.0000		0.0000
0.0053	4.90	0.2353		5.14	0.0000	0.0000		0.0000	0.0001	0.0002	0.0003	0.0000	0.0000		0.0000
0.0001	0.1465	0.0060		0.1525	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0052	5.65	0.2107		5.86	0.0000	0.0000		0.0000	0.0001	0.0003	0.0004	0.0000	0.0000		0.0000
0.0000	0.1037	0.0007		0.1044	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0001	0.1423	0.0009		0.1432	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0002	0.3711	0.0039		0.3750	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0008	2.43	0.0048		2.44	0.0000	0.0000		0.0000	0.0000	0.0001	0.0002	0.0000	0.0000		0.0000
0.0001	0.0986	0.0074		0.1060	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0002	0.2629	0.0196		0.2825	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0003	0.3094	0.0231		0.3325	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0012	1.43	0.0872		1.52	0.0000	0.0000		0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0002	0.3455	0.0120		0.3575	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.0653	0.0023		0.0676	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0000	0.0897	0.0025		0.0922	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.4165	301.4	22.5		323.9	0.0070	0.0001	0.0194	0.0071	0.0070	0.0086	0.0194	0.0351	0.0067		0.0068
0.7427	440.1	29.8		469.8	0.0106	0.0001	0.0106	0.0106	0.0130	0.0297	0.0533	0.0101	0.0001		0.0102
0.2922	159.8	12.8		172.6	0.0041	0.0000	0.0041	0.0041	0.0047	0.0108	0.0196	0.0039	0.0000		0.0039
0.0054	4.96	0.0982		5.06	0.0001	0.0000	0.0001	0.0001	0.0001	0.0003	0.0005	0.0001	0.0000		0.0001
0.0162	12.2	0.5043		12.7	0.0002	0.0000	0.0002	0.0002	0.0003	0.0008	0.0013	0.0001	0.0000		0.0001
0.0233	18.5	0.4759		18.9	0.0003	0.0000	0.0003	0.0003	0.0005	0.0013	0.0020	0.0002	0.0000		0.0002
0.0057	3.46	0.1373		3.59	0.0000	0.0000	0.0000	0.0000	0.0001	0.0002	0.0003	0.0000	0.0000		0.0000
0.0012	1.83	0.0255		1.86	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0002	0.1768	0.0072		0.1840	0.0000	0.0000	0.1840	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
0.0017	1.25	0.0709		1.32	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000		0.0000
0.0229	17.4	0.4303		17.8	0.0002	0.0000	0.0002	0.0002	0.0004	0.0010	0.0016	0.0002	0.0000		0.0002
0.4104	217.7	17.4		235.1	0.0037	0.0000	0.0038	0.0038	0.0062	0.0148	0.0248	0.0036	0.0000		0.0036
0.0009	0.5680	0.0120		0.5800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000		0.0000
0.0000	0.0110			0.0110	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000			0.0000
2.0	1,258.8	86.1	0.0	1,344.9	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0

PM2_5_PMTW	PM2_5_PMBW	PM2_5_TOTAL	SOx_RUNEX	SOx_IDLEX	SOx_STREX	SOx_TOTEX	Fuel_GAS	Fuel_DSL	Fuel_NG
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1016	
0.0000	0.0000	0.0000	0.0000			0.0000		0.0212	
0.0000	0.0000	0.0000	0.0000			0.0000		0.0001	
0.0000	0.0000	0.0000	0.0000			0.0000		0.1046	
0.0001	0.0008	0.0016	0.0002	0.0000		0.0002		1.68	
0.0000	0.0005	0.0005	0.0009	0.0001	0.0000	0.0001		0.9022	
0.0000	0.0000	0.0000	0.0000			0.0000		0.2299	
0.0000	0.0000	0.0001	0.0000			0.0000		0.0986	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1300	
		0.0000	0.0000			0.0000		0.4308	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1137	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0068	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0093	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0244	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.2506	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0453	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0155	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1058	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0515	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.2224	
0.0000	0.0001	0.0001	0.0001	0.0000		0.0001		0.5602	
0.0000	0.0001	0.0002	0.0001	0.0000	0.0002	0.0001	0.0000	0.6866	
0.0000	0.0001	0.0001	0.0000	0.0000		0.0000		0.4625	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0137	
0.0000	0.0001	0.0001	0.0001	0.0000		0.0001		0.5274	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0094	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0129	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0338	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.2192	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0095	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0254	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0299	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1364	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0322	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0061	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0083	
0.0021	0.0068	0.0157	0.0029	0.0002		0.0031		29.2	
0.0033	0.0104	0.0238	0.0042	0.0003		0.0045		42.3	
0.0012	0.0038	0.0089	0.0015	0.0001		0.0016		15.5	
0.0000	0.0001	0.0002	0.0000	0.0000		0.0000		0.4556	
0.0001	0.0003	0.0005	0.0001	0.0000		0.0001		1.15	
0.0001	0.0004	0.0008	0.0002	0.0000		0.0002		1.70	
0.0000	0.0001	0.0001	0.0000	0.0000		0.0000		0.3233	
0.0000	0.0000	0.0001	0.0000	0.0000		0.0000		0.1674	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0166	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.1186	
0.0001	0.0003	0.0007	0.0002	0.0000		0.0002		1.60	
0.0015	0.0052	0.0103	0.0021	0.0002		0.0022		21.2	
0.0000	0.0000	0.0000	0.0000	0.0000		0.0000		0.0522	
0.0000	0.0000	0.0000	0.0000			0.0000		0.0010	
0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	121.0	0.0

Annual Emissions (metric tons per year)					Per Capita Emissions (metric tons per person per year)	Per Capita Emissions (pounds per person per day)
Year	KCAG				CO <sub>2</sub> e	CO <sub>2</sub> e
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e		
Baseline (2020)	888,755	50	84	915,097	6.00	36.25
2046 No Build	868,370	13	82	893,016	4.89	29.53
2046 Project	<b>839,976</b>	<b>12</b>	<b>79</b>	<b>863,817</b>	<b>4.73</b>	<b>28.57</b>
<b>Net Change (2020 to 2046 Project)</b>	<b>(48,779)</b>	<b>(37)</b>	<b>(5)</b>	<b>(51,280)</b>	<b>(1.27)</b>	<b>(7.68)</b>
<b>% Change (2020 to 2046 Project)</b>	<b>-5.49%</b>	<b>-74.98%</b>	<b>-6.24%</b>	<b>-5.60%</b>	<b>-21.20%</b>	<b>-21.20%</b>
Net Change (2046 Project to 2046 No Build)	(28,393)	(0)	(3)	(29,199)	(0)	(1)

<b>2020 Population</b>	152,486
<b>2046 Population</b>	182,661

*\*GWPs of 25 for CH<sub>4</sub> and 298 for N<sub>2</sub>O were utilized to calculate CO<sub>2</sub>e (consistent with CARB's 2017 Scoping Plan, which relied on IPCC AR4 estimates).*

KCAC			
	2020 Baseline	2046 Cur Trend (Project)*	2046 No Build
Daily VMT	4,095,140	5,467,919	5,652,866
Daily Trips	638,521	695,592	719,120
Daily Vehicles	116,806	123,884	128,074

- Daily VMT provided by KCAG. Off-model reductions included. **Induced Demand not included.** Daily Trips and Daily Vehicles based on EMFAC2021 Planning Inventory outputs for the respective year.

Days per Year	365
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KCAC			
	2005**	Baseline (2020)*	2046
Population	143,607	152,486	182,661
VMT	3,687,000	4,095,140	5,467,919
Per Capita VMT	25.7	26.9	29.9

Source: "KCAG\_2022RTP\_Network\_Measures\_20220705-VMT.xlsx" Spreadsheet; U.S. Census; DOF Population Forecast 2020

2030 Project VMT Interpolation:

Year	VMT
2020	4,095,140
2030	4,554,661
2035*	4,784,421

\*Off-model reduction same as 2046

2005 VMT source:  
2005 Caltrans HPMS: 3,687,000  
Mike Aronson, P.E.  
Principal Engineer  
[Kittelson & Associates, Inc.](#)

VMT Adjustments for Off-Model Reductions			Adjusted Daily VMT
Scenario	From Model	Off-model reductions	
ScenA* (2046 Proj)	5,652,866	(184,947)	5,467,919
2046 No Build	5,652,866	None	5,652,866
Alternatives			-
ScenB**	5,635,566	(184,947)	5,450,619
ScenC*	5,652,866	(248,328)	5,404,538
ScenD**	5,635,566	(248,328)	5,387,238

\*Model (A) = Current Trend

\*\*Model (B) = Infill

SB 32 Analysis - CO <sub>2</sub> Emissions Estimates						
Year	KCAG					% change from 1990 Baseline
	VMT	CO <sub>2</sub> (tons/day)	CO <sub>2</sub> (lbs/day)	Population	Per Capita CO <sub>2</sub> (lbs/person/day)	
1990*	n/a	n/a	n/a	n/a	30.5	n/a
2005	3,687,000	2,577.48	5,154,956.62	143,607	35.9	n/a
Baseline (2020)	4,095,140	2,623.30	5,246,600.00	152,486	34.4	12.8%
2030 with 2022 RTP/SCS**	4,554,661	2,284.60	4,569,200.00	165,752	27.6	-9.7%
2046 with 2022 RTP/SCS	5,467,919	2508.23	5,016,454.76	182,661	27.5	-10.0%

\*1990 per capita levels assumed to be 15% below 2005 levels

\*\*2030 VMT calculated via linear interpolation using 2015 and 2035 values. Population from DOF Historical & Projected Data

Source: EMFAC2021 (v1.0.2) Emission Rates

Region Type: MPO

Region: KCAG

Calendar Year: 2015

Season: Annual

Vehicle Classification: EMFAC202x Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Fleet Mix (Population)	VMT	Fleet Mix (VMT)	Trips	Fleet Mix (Trips)
KCAG	2015	All Other Buses	Aggregate	Aggregate	Diesel	21.3	0.02%	1087.305936	0.02%	189.57	0.02%
KCAG	2015	LDA	Aggregate	Aggregate	Gasoline	63462.15735	45.44%	2372036.1	44.50%	295784.74	38.91%
KCAG	2015	LDA	Aggregate	Aggregate	Diesel	371.7479777	0.27%	13590.08612	0.25%	1702.61635	0.22%
KCAG	2015	LDA	Aggregate	Aggregate	Electricity	184.7626795	0.13%	6102.415195	0.11%	941.951778	0.12%
KCAG	2015	LDA	Aggregate	Aggregate	Plug-in Hybrid	325.9236992	0.23%	15951.01858	0.30%	1347.6945	0.18%
KCAG	2015	LDT1	Aggregate	Aggregate	Gasoline	6931.078071	4.96%	211166.2922	3.96%	30149.885	3.97%
KCAG	2015	LDT1	Aggregate	Aggregate	Diesel	16.23675376	0.01%	332.8503886	0.01%	58.8864046	0.01%
KCAG	2015	LDT1	Aggregate	Aggregate	Electricity	5.847982494	0.00%	150.5468548	0.00%	27.1791068	0.00%
KCAG	2015	LDT2	Aggregate	Aggregate	Gasoline	22804.51534	16.33%	776924.1643	14.58%	104651.958	13.77%
KCAG	2015	LDT2	Aggregate	Aggregate	Diesel	45.46349696	0.03%	1744.594313	0.03%	211.80403	0.03%
KCAG	2015	LDT2	Aggregate	Aggregate	Electricity	3.594894709	0.00%	103.8030777	0.00%	17.5313784	0.00%
KCAG	2015	LDT2	Aggregate	Aggregate	Plug-in Hybrid	0.642653335	0.00%	30.3435619	0.00%	2.65737154	0.00%
KCAG	2015	LHD1	Aggregate	Aggregate	Gasoline	2693.863519	1.93%	84032.09785	1.58%	40134.5526	5.28%
KCAG	2015	LHD1	Aggregate	Aggregate	Diesel	2907.225664	2.08%	104684.4818	1.96%	36569.2416	4.81%
KCAG	2015	LHD2	Aggregate	Aggregate	Gasoline	346.5322836	0.25%	11744.81679	0.22%	5162.81469	0.68%
KCAG	2015	LHD2	Aggregate	Aggregate	Diesel	719.645997	0.52%	27150.99187	0.51%	9052.24133	1.19%
KCAG	2015	MCY	Aggregate	Aggregate	Gasoline	3752.937821	2.69%	21742.56245	0.41%	7505.87564	0.99%
KCAG	2015	MDV	Aggregate	Aggregate	Gasoline	28182.00724	20.18%	969851.8462	18.20%	130107.192	17.12%
KCAG	2015	MDV	Aggregate	Aggregate	Diesel	279.2191569	0.20%	12507.6916	0.23%	1370.0065	0.18%
KCAG	2015	MDV	Aggregate	Aggregate	Electricity	0.735784496	0.00%	15.20905284	0.00%	3.23795703	0.00%
KCAG	2015	MH	Aggregate	Aggregate	Gasoline	580.324899	0.42%	4645.616875	0.09%	58.0557029	0.01%
KCAG	2015	MH	Aggregate	Aggregate	Diesel	189.4356882	0.14%	1782.774382	0.03%	18.9435688	0.00%
KCAG	2015	Motor Coach	Aggregate	Aggregate	Diesel	7.480923308	0.01%	906.8813907	0.02%	171.911618	0.02%
KCAG	2015	OBUS	Aggregate	Aggregate	Gasoline	96.31206093	0.07%	5783.30416	0.11%	1927.01171	0.25%
KCAG	2015	PTO	Aggregate	Aggregate	Diesel	0	0.00%	2633.716676	0.05%	0	0.00%
KCAG	2015	SBUS	Aggregate	Aggregate	Gasoline	45.55861894	0.03%	2737.926703	0.05%	182.234476	0.02%
KCAG	2015	SBUS	Aggregate	Aggregate	Diesel	171.6421667	0.12%	3003.563046	0.06%	2485.37857	0.33%
KCAG	2015	SBUS	Aggregate	Aggregate	Natural Gas	4.78783329	0.00%	95.53511464	0.00%	69.327826	0.01%
KCAG	2015	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	1.407543351	0.00%	105.8789667	0.00%	32.3453462	0.00%
KCAG	2015	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	1.824401382	0.00%	145.2469027	0.00%	41.9247438	0.01%
KCAG	2015	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	4.716582007	0.00%	379.5343121	0.01%	108.387055	0.01%
KCAG	2015	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	17.82161704	0.01%	2380.631042	0.04%	409.54076	0.05%
KCAG	2015	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	43.06498623	0.03%	575.2003569	0.01%	614.537354	0.08%
KCAG	2015	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	31.46530449	0.02%	195.7150909	0.00%	449.009895	0.06%
KCAG	2015	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	106.5050549	0.08%	1339.590825	0.03%	1519.82713	0.20%
KCAG	2015	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	55.57168313	0.04%	504.0138264	0.01%	793.007918	0.10%
KCAG	2015	T6 Instate Delivery Class 7	Aggregate	Aggregate	Natural Gas	0.002583354	0.00%	0.02504126	0.00%	0.03686446	0.00%
KCAG	2015	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	89.66738357	0.06%	2987.223024	0.06%	1036.55495	0.14%
KCAG	2015	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	139.8604612	0.10%	7563.381087	0.14%	1616.78693	0.21%
KCAG	2015	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	149.8905607	0.11%	9268.007711	0.17%	1732.73488	0.23%
KCAG	2015	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	192.520598	0.14%	5178.693719	0.10%	2225.53811	0.29%
KCAG	2015	T6 Instate Other Class 7	Aggregate	Aggregate	Natural Gas	0.008092568	0.00%	0.445614895	0.00%	0.09355009	0.00%
KCAG	2015	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	1.87966358	0.00%	189.6852659	0.00%	21.728911	0.00%
KCAG	2015	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	112.8714094	0.08%	4537.006708	0.09%	1304.79349	0.17%
KCAG	2015	T6 Instate Tractor Class 7	Aggregate	Aggregate	Natural Gas	0.004312423	0.00%	0.308820886	0.00%	0.04985161	0.00%
KCAG	2015	T6 OOS Class 4	Aggregate	Aggregate	Diesel	0.812263754	0.00%	63.26195525	0.00%	18.6658211	0.00%
KCAG	2015	T6 OOS Class 5	Aggregate	Aggregate	Diesel	1.053504805	0.00%	86.78402662	0.00%	24.2095404	0.00%
KCAG	2015	T6 OOS Class 6	Aggregate	Aggregate	Diesel	2.72294421	0.00%	226.7691444	0.00%	62.573258	0.01%
KCAG	2015	T6 OOS Class 7	Aggregate	Aggregate	Diesel	10.25244758	0.01%	1648.893665	0.03%	235.601245	0.03%
KCAG	2015	T6 Public Class 4	Aggregate	Aggregate	Diesel	12.60730178	0.01%	183.239466	0.00%	64.6754581	0.01%
KCAG	2015	T6 Public Class 4	Aggregate	Aggregate	Natural Gas	0.030952537	0.00%	0.573879809	0.00%	0.15878651	0.00%
KCAG	2015	T6 Public Class 5	Aggregate	Aggregate	Diesel	15.82793038	0.01%	497.5640835	0.01%	81.1972828	0.01%
KCAG	2015	T6 Public Class 5	Aggregate	Aggregate	Natural Gas	0.10381741	0.00%	3.735462214	0.00%	0.53258331	0.00%
KCAG	2015	T6 Public Class 6	Aggregate	Aggregate	Diesel	19.48570424	0.01%	579.612754	0.01%	99.9616628	0.01%
KCAG	2015	T6 Public Class 6	Aggregate	Aggregate	Natural Gas	0.043715087	0.00%	1.718064888	0.00%	0.2242584	0.00%
KCAG	2015	T6 Public Class 7	Aggregate	Aggregate	Diesel	51.86441043	0.04%	2452.308985	0.05%	266.064425	0.04%

<b>SCENARIO</b>	KCAG 2015 - RUNEX
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<b>Source</b>	EMFAC2021 (v1.0.2) Emission Rates
<b>Region Type</b>	MPO
<b>Region</b>	KCAG
<b>Calendar Year</b>	2015
<b>Season</b>	Annual
<b>Vehicle Classification</b>	EMFAC202x Categories
<b>Emissions Rate and Vehicle Activity Units</b>	Units: miles/day for VMT, g/mile for RUNEX

<b>Daily VMT</b>	4,095,140
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Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	CO <sub>2</sub> RUNEX	CH <sub>4</sub> RUNEX	N <sub>2</sub> O RUNEX	Fleet Mix (by VMT)	VMT per Day	CO <sub>2</sub> RUNEX Emissions (MT/day)	CH <sub>4</sub> RUNEX Emissions (MT/day)	N <sub>2</sub> O RUNEX Emissions (MT/day)
KCAG	2015	All Other Buses	Aggregate	Aggregate	Diesel	1329.598413	0.10109832	0.208994355	0.02%	835.38	1.11E+00	8.45E-05	1.75E-04
KCAG	2015	LDA	Aggregate	Aggregate	Gasoline	333.843177	0.007644529	0.010681635	44.50%	1,822,441.77	6.08E+02	1.39E-02	1.95E-02
KCAG	2015	LDA	Aggregate	Aggregate	Diesel	251.0178979	0.001830698	0.039456518	0.25%	10,441.30	2.62E+00	1.91E-05	4.12E-04
KCAG	2015	LDA	Aggregate	Aggregate	Electricity	0	0	0	0.11%	4,688.50	0.00E+00	0.00E+00	0.00E+00
KCAG	2015	LDA	Aggregate	Aggregate	Plug-in Hybrid	140.5192539	0.000411529	0.000592234	0.30%	12,255.21	1.72E+00	5.04E-06	7.26E-06
KCAG	2015	LDT1	Aggregate	Aggregate	Gasoline	395.029219	0.026410948	0.028119322	3.96%	162,239.64	6.41E+01	4.28E-03	4.56E-03
KCAG	2015	LDT1	Aggregate	Aggregate	Diesel	460.7327241	0.010075892	0.072420768	0.01%	255.73	1.18E-01	2.58E-06	1.85E-05
KCAG	2015	LDT1	Aggregate	Aggregate	Electricity	0	0	0	0.00%	115.67	0.00E+00	0.00E+00	0.00E+00
KCAG	2015	LDT2	Aggregate	Aggregate	Gasoline	441.4480352	0.013897401	0.020990122	14.58%	596,912.94	2.64E+02	8.30E-03	1.25E-02
KCAG	2015	LDT2	Aggregate	Aggregate	Diesel	361.0119574	0.002920729	0.056746052	0.03%	1,340.38	4.84E-01	3.91E-06	7.61E-05
KCAG	2015	LDT2	Aggregate	Aggregate	Electricity	0	0	0	0.00%	79.75	0.00E+00	0.00E+00	0.00E+00
KCAG	2015	LDT2	Aggregate	Aggregate	Plug-in Hybrid	140.6611378	0.000409705	0.000587301	0.00%	23.31	3.28E-03	9.55E-09	1.37E-08
KCAG	2015	LHD1	Aggregate	Aggregate	Gasoline	1032.0414	0.029823047	0.028806975	1.58%	64,562.09	6.66E+01	1.93E-03	1.86E-03
KCAG	2015	LHD1	Aggregate	Aggregate	Diesel	631.381881	0.014488096	0.099244439	1.96%	80,429.37	5.08E+01	1.17E-03	7.98E-03
KCAG	2015	LHD2	Aggregate	Aggregate	Gasoline	1134.451257	0.016816417	0.022553079	0.22%	9,023.57	1.02E+01	1.52E-04	2.04E-04
KCAG	2015	LHD2	Aggregate	Aggregate	Diesel	797.8427623	0.012337256	0.125409772	0.51%	20,860.18	1.66E+01	2.57E-04	2.62E-03
KCAG	2015	MCY	Aggregate	Aggregate	Gasoline	205.1818399	0.247052177	0.051855786	0.41%	16,704.87	3.43E+00	4.13E-03	8.66E-04
KCAG	2015	MDV	Aggregate	Aggregate	Gasoline	513.3346128	0.01115753	0.0189278	18.20%	745,139.80	3.83E+02	8.31E-03	1.41E-02
KCAG	2015	MDV	Aggregate	Aggregate	Diesel	455.9505534	0.000782464	0.071669077	0.23%	9,609.69	4.38E+00	7.52E-06	6.89E-04
KCAG	2015	MDV	Aggregate	Aggregate	Electricity	0	0	0	0.00%	11.69	0.00E+00	0.00E+00	0.00E+00
KCAG	2015	MH	Aggregate	Aggregate	Gasoline	1959.852449	0.04997426	0.049120205	0.09%	3,569.24	7.00E+00	1.78E-04	1.75E-04
KCAG	2015	MH	Aggregate	Aggregate	Diesel	1076.322328	0.00706003	0.169182881	0.03%	1,369.71	1.47E+00	9.67E-06	2.32E-04
KCAG	2015	Motor Coach	Aggregate	Aggregate	Diesel	1669.346895	0.020267212	0.262398085	0.02%	696.76	1.16E+00	1.41E-05	1.83E-04
KCAG	2015	OBUS	Aggregate	Aggregate	Gasoline	1884.679078	0.037432762	0.048668389	0.11%	4,443.33	8.37E+00	1.66E-04	2.16E-04
KCAG	2015	PTO	Aggregate	Aggregate	Diesel	2264.437947	0.065304957	0.355938111	0.05%	2,023.49	4.58E+00	1.32E-04	7.20E-04
KCAG	2015	SBUS	Aggregate	Aggregate	Gasoline	916.7374004	0.203901562	0.099807788	0.05%	2,103.56	1.93E+00	4.29E-04	2.10E-04
KCAG	2015	SBUS	Aggregate	Aggregate	Diesel	1198.180875	0.005687035	0.188337348	0.06%	2,307.65	2.76E+00	1.31E-05	4.35E-04
KCAG	2015	SBUS	Aggregate	Aggregate	Natural Gas	1354.739238	3.777081342	0.276172456	0.00%	73.40	9.94E-02	2.77E-04	2.03E-05
KCAG	2015	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	1061.332193	0.007685516	0.166826641	0.00%	81.35	8.63E-02	6.25E-07	1.36E-05
KCAG	2015	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	1061.332193	0.007685516	0.166826641	0.00%	111.59	1.18E-01	8.58E-07	1.86E-05
KCAG	2015	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	1061.332193	0.007685516	0.166826641	0.01%	291.60	3.09E-01	2.24E-06	4.86E-05
KCAG	2015	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	1030.292387	0.007029811	0.161947616	0.04%	1,829.05	1.88E+00	1.29E-05	2.96E-04
KCAG	2015	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	1270.189915	0.028308275	0.199656166	0.01%	441.93	5.61E-01	1.25E-05	8.82E-05
KCAG	2015	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	1270.274318	0.028361495	0.199669433	0.00%	150.37	1.91E-01	4.26E-06	3.00E-05
KCAG	2015	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	1270.194471	0.028311147	0.199656882	0.03%	1,029.21	1.31E+00	2.91E-05	2.05E-04
KCAG	2015	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	1289.645169	0.04077116	0.202714261	0.01%	387.24	4.99E-01	1.58E-05	7.85E-05
KCAG	2015	T6 Instate Delivery Class 7	Aggregate	Aggregate	Natural Gas	1054.872764	0.72676944	0.215042714	0.00%	0.02	2.03E-05	1.40E-08	4.14E-09
KCAG	2015	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	1173.917155	0.021229684	0.184523429	0.06%	2,295.09	2.69E+00	4.87E-05	4.23E-04
KCAG	2015	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	1173.297088	0.020864728	0.184425963	0.14%	5,810.97	6.82E+00	1.21E-04	1.07E-03
KCAG	2015	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	1175.550673	0.022187126	0.184780195	0.17%	7,120.64	8.37E+00	1.58E-04	1.32E-03
KCAG	2015	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	1175.252891	0.025584926	0.184733388	0.10%	3,978.80	4.68E+00	1.02E-04	7.35E-04
KCAG	2015	T6 Instate Other Class 7	Aggregate	Aggregate	Natural Gas	916.549843	0.555313983	0.186844681	0.00%	0.34	3.14E-04	1.90E-07	6.40E-08
KCAG	2015	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	1175.027429	0.022147912	0.184697949	0.00%	145.74	1.71E-01	3.23E-06	2.69E-05
KCAG	2015	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	1155.025792	0.028868448	0.18155397	0.09%	3,485.79	4.03E+00	1.01E-04	6.33E-04
KCAG	2015	T6 Instate Tractor Class 7	Aggregate	Aggregate	Natural Gas	916.549843	0.555313983	0.186844681	0.00%	0.24	2.17E-04	1.32E-07	4.43E-08
KCAG	2015	T6 OOS Class 4	Aggregate	Aggregate	Diesel	1061.406542	0.007709419	0.166838327	0.00%	48.60	5.16E-02	3.75E-07	8.11E-06
KCAG	2015	T6 OOS Class 5	Aggregate	Aggregate	Diesel	1061.406542	0.007709419	0.166838327	0.00%	66.68	7.08E-02	5.14E-07	1.11E-05
KCAG	2015	T6 OOS Class 6	Aggregate	Aggregate	Diesel	1061.406542	0.007709419	0.166838327	0.00%	174.23	1.85E-01	1.34E-06	2.91E-05
KCAG	2015	T6 OOS Class 7	Aggregate	Aggregate	Diesel	1030.584831	0.007751028	0.161993584	0.03%	1,266.85	1.31E+00	9.82E-06	2.05E-04
KCAG	2015	T6 Public Class 4	Aggregate	Aggregate	Diesel	1295.998633	0.005252725	0.203712937	0.00%	140.78	1.82E-01	7.39E-07	2.87E-05
KCAG	2015	T6 Public Class 4	Aggregate	Aggregate	Natural Gas	1049.958706	0.772382609	0.214040951	0.00%	0.44	4.63E-04	3.41E-07	9.44E-08
KCAG	2015	T6 Public Class 5	Aggregate	Aggregate	Diesel	1286.000538	0.004216483	0.202141376	0.01%	382.28	4.92E-01	1.61E-06	7.73E-05
KCAG	2015	T6 Public Class 5	Aggregate	Aggregate	Natural Gas	1045.723805	0.772382609	0.213177638	0.00%	2.87	3.00E-03	2.22E-06	6.12E-07
KCAG	2015	T6 Public Class 6	Aggregate	Aggregate	Diesel	1323.519756	0.006925514	0.208038875	0.01%	445.32	5.89E-01	3.08E-06	9.26E-05
KCAG	2015	T6 Public Class 6	Aggregate	Aggregate	Natural Gas	1042.262445	0.772382609	0.212472018	0.00%	1.32	1.38E-03	1.02E-06	2.80E-07
KCAG	2015	T6 Public Class 7	Aggregate	Aggregate	Diesel	1344.751802	0.008690175	0.211376256	0.05%	1,884.12	2.53E+00	1.64E-05	3.98E-04

SCENARIO KCAG 2015 - STREX and IOLEX

Table with 2 columns: Source (EMFAC2011 v4.0.2) Emission Rates, Region Type (MPO), Region (KCAG), Calendar Year (2015), Season (Annual), Vehicle Classification (EMFAC2011 Categories), Emission Rate and Vehicle Activity Units (Units: miles/day for VMT, g/mile for RUNEX)

Table with 2 columns: Daily Trips (638,321), Daily Vehicles (316,806)

Main data table with columns: Region, Calendar Year, Vehicle Category, Model Year, Speed, Fuel, CO2 IOLEX, CO2 STREX, CH4 IOLEX, CH4 STREX, N2O IOLEX, N2O STREX, Fleet Mix (by Vehicle Trips), Vehicle Trips per Day, Fleet Mix (by Vehicle Population), Vehicles per Day, CO2 STREX Emissions [tons/day], CO2 IOLEX Emissions [MT/day], CH4 STREX Emissions [MT/day], CH4 IOLEX Emissions [MT/day], N2O STREX Emissions [MT/day], N2O IOLEX Emissions [MT/day]



Source: EMFAC2021 (v1.0.2) Emission Rates

Region Type: MPO

Region: KCAG

Calendar Year: 2046

Season: Annual

Vehicle Classification: EMFAC202x Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Fleet Mix (Population)	VMT	Fleet Mix (VMT)	Trips	Fleet Mix (Trips)
KCAG	2046	All Other Buses	Aggregate	Aggregate	Diesel	30.56018679	0.02%	1352.439514	0.02%	271.9856624	0.03%
KCAG	2046	All Other Buses	Aggregate	Aggregate	Natural Gas	2.279697856	0.00%	93.81748774	0.00%	20.28931092	0.00%
KCAG	2046	LDA	Aggregate	Aggregate	Gasoline	67472.32986	38.48%	2783355.782	35.99%	314288.6744	31.94%
KCAG	2046	LDA	Aggregate	Aggregate	Diesel	42.3796794	0.02%	1623.358573	0.02%	191.5904682	0.02%
KCAG	2046	LDA	Aggregate	Aggregate	Electricity	9263.184869	5.28%	375945.3242	4.86%	43557.63081	4.43%
KCAG	2046	LDA	Aggregate	Aggregate	Plug-in Hyb	3175.877612	1.81%	131810.0392	1.70%	13132.25393	1.33%
KCAG	2046	LDT1	Aggregate	Aggregate	Gasoline	4840.594221	2.76%	176311.5481	2.28%	21853.63268	2.22%
KCAG	2046	LDT1	Aggregate	Aggregate	Diesel	0.05487231	0.00%	2.075177117	0.00%	0.252958093	0.00%
KCAG	2046	LDT1	Aggregate	Aggregate	Electricity	140.8015028	0.08%	5650.929198	0.07%	659.7595691	0.07%
KCAG	2046	LDT1	Aggregate	Aggregate	Plug-in Hyb	107.969846	0.06%	4217.383739	0.05%	446.4553134	0.05%
KCAG	2046	LDT2	Aggregate	Aggregate	Gasoline	40323.51189	22.99%	1520843.529	19.66%	185218.3551	18.82%
KCAG	2046	LDT2	Aggregate	Aggregate	Diesel	152.3786137	0.09%	5791.365824	0.07%	703.4424308	0.07%
KCAG	2046	LDT2	Aggregate	Aggregate	Electricity	1575.331202	0.90%	43799.85593	0.57%	7384.587217	0.75%
KCAG	2046	LDT2	Aggregate	Aggregate	Plug-in Hyb	1084.519195	0.62%	41617.12393	0.54%	4484.486872	0.46%
KCAG	2046	LHD1	Aggregate	Aggregate	Gasoline	1612.241286	0.92%	56776.31871	0.73%	24019.99292	2.44%
KCAG	2046	LHD1	Aggregate	Aggregate	Diesel	1184.270939	0.68%	38554.63676	0.50%	14896.63861	1.51%
KCAG	2046	LHD1	Aggregate	Aggregate	Electricity	1711.300445	0.98%	75648.57441	0.98%	24021.38706	2.44%
KCAG	2046	LHD2	Aggregate	Aggregate	Gasoline	182.5845274	0.10%	6296.465202	0.08%	2720.237408	0.28%
KCAG	2046	LHD2	Aggregate	Aggregate	Diesel	553.9436964	0.32%	17657.65337	0.23%	6967.91484	0.71%
KCAG	2046	LHD2	Aggregate	Aggregate	Electricity	414.8794299	0.24%	17827.17371	0.23%	5490.253945	0.56%
KCAG	2046	MCY	Aggregate	Aggregate	Gasoline	3440.286743	1.96%	18834.93188	0.24%	6880.573487	0.70%
KCAG	2046	MDV	Aggregate	Aggregate	Gasoline	24342.52264	13.88%	881790.1226	11.40%	109952.4638	11.17%
KCAG	2046	MDV	Aggregate	Aggregate	Diesel	274.2161404	0.16%	9666.48997	0.12%	1227.460802	0.12%
KCAG	2046	MDV	Aggregate	Aggregate	Electricity	1457.697578	0.83%	40035.68379	0.52%	6803.468367	0.69%
KCAG	2046	MDV	Aggregate	Aggregate	Plug-in Hyb	693.926513	0.40%	26396.35817	0.34%	2869.386131	0.29%
KCAG	2046	MH	Aggregate	Aggregate	Gasoline	198.0088726	0.11%	2160.913704	0.03%	19.80880762	0.00%
KCAG	2046	MH	Aggregate	Aggregate	Diesel	135.4822584	0.08%	1262.249529	0.02%	13.54822584	0.00%
KCAG	2046	Motor Coach	Aggregate	Aggregate	Diesel	8.958184293	0.01%	1136.888121	0.01%	205.8590751	0.02%
KCAG	2046	OBUS	Aggregate	Aggregate	Gasoline	28.77137689	0.02%	1041.968552	0.01%	575.6577088	0.06%
KCAG	2046	OBUS	Aggregate	Aggregate	Electricity	14.10662344	0.01%	1131.941014	0.01%	282.2453217	0.03%
KCAG	2046	PTO	Aggregate	Aggregate	Diesel	0	0.00%	3189.432598	0.04%	0	0.00%
KCAG	2046	PTO	Aggregate	Aggregate	Electricity	0	0.00%	2142.705442	0.03%	0	0.00%
KCAG	2046	SBUS	Aggregate	Aggregate	Gasoline	13.42838412	0.01%	805.9249101	0.01%	53.71353649	0.01%
KCAG	2046	SBUS	Aggregate	Aggregate	Diesel	68.20570432	0.04%	1418.583877	0.02%	987.6185986	0.10%
KCAG	2046	SBUS	Aggregate	Aggregate	Electricity	69.03293436	0.04%	2032.375456	0.03%	907.5539701	0.09%
KCAG	2046	SBUS	Aggregate	Aggregate	Natural Gas	23.38936659	0.01%	473.3076855	0.01%	338.6780283	0.03%
KCAG	2046	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	1.267178187	0.00%	93.00615275	0.00%	29.11975473	0.00%
KCAG	2046	T6 CAIRP Class 4	Aggregate	Aggregate	Electricity	1.748976604	0.00%	135.8082461	0.00%	40.19148236	0.00%
KCAG	2046	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	1.557165528	0.00%	127.7542206	0.00%	35.78366382	0.00%
KCAG	2046	T6 CAIRP Class 5	Aggregate	Aggregate	Electricity	2.142789135	0.00%	186.1379882	0.00%	49.24129433	0.01%
KCAG	2046	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	7.073858981	0.00%	332.6869952	0.00%	162.5572794	0.02%
KCAG	2046	T6 CAIRP Class 6	Aggregate	Aggregate	Electricity	9.820754333	0.01%	487.5223263	0.01%	225.6809346	0.02%
KCAG	2046	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	18.8956733	0.01%	3890.959271	0.05%	434.2225725	0.04%
KCAG	2046	T6 CAIRP Class 7	Aggregate	Aggregate	Electricity	5.870009865	0.00%	1253.80817	0.02%	134.8928267	0.01%
KCAG	2046	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	17.41269785	0.01%	576.6927969	0.01%	248.4791984	0.03%
KCAG	2046	T6 Instate Delivery Class 4	Aggregate	Aggregate	Electricity	18.84145282	0.01%	666.3692385	0.01%	268.8675317	0.03%
KCAG	2046	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	6.273219222	0.00%	197.1792314	0.00%	89.5188383	0.01%
KCAG	2046	T6 Instate Delivery Class 5	Aggregate	Aggregate	Electricity	6.745076192	0.00%	225.7794756	0.00%	96.25223727	0.01%
KCAG	2046	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	42.69090012	0.02%	1343.728909	0.02%	199.1991447	0.06%
KCAG	2046	T6 Instate Delivery Class 6	Aggregate	Aggregate	Electricity	46.3782968	0.03%	1551.252774	0.02%	661.8182954	0.07%
KCAG	2046	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	13.16007349	0.01%	647.9462262	0.01%	187.7942487	0.02%
KCAG	2046	T6 Instate Delivery Class 7	Aggregate	Aggregate	Electricity	8.521060051	0.00%	427.7769698	0.01%	121.5955269	0.01%
KCAG	2046	T6 Instate Delivery Class 7	Aggregate	Aggregate	Natural Gas	0.275292816	0.00%	13.55217248	0.00%	3.928428478	0.00%
KCAG	2046	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	78.84238697	0.04%	2921.570504	0.04%	911.4179934	0.09%
KCAG	2046	T6 Instate Other Class 4	Aggregate	Aggregate	Electricity	85.04309942	0.05%	3534.099225	0.05%	983.0982292	0.10%

<b>SCENARIO</b>	KCAG 2046 Project - RUNEX
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<b>Source</b>	EMFAC2021 (v1.0.2) Emission Rates
<b>Region Type</b>	MPO
<b>Region</b>	KCAG
<b>Calendar Year</b>	2046
<b>Season</b>	Annual
<b>Vehicle Classification</b>	EMFAC202X Categories
<b>Emissions Rate and Vehicle Activity Units</b>	Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip

<b>Daily VMT</b>	5,467,919
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Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	CO <sub>2</sub> RUNEX	CH <sub>4</sub> RUNEX	N <sub>2</sub> O RUNEX	Fleet Mix	VMT per Day	CO <sub>2</sub> RUNEX Emissions (tons/day)	CH <sub>4</sub> RUNEX Emissions (tons/day)	N <sub>2</sub> O RUNEX Emissions (tons/day)
KCAG	2046	All Other Buses	Aggregate	Aggregate	Diesel	1034.857466	0.002136191	0.163042215	0.02%	956.19	9.90E-01	2.04E-06	1.56E-04
KCAG	2046	All Other Buses	Aggregate	Aggregate	Natural Gas	902.4709743	0.850338478	0.183974612	0.00%	66.33	5.99E-02	5.64E-05	1.22E-05
KCAG	2046	LDA	Aggregate	Aggregate	Gasoline	234.4622994	0.000954628	0.003171641	35.99%	1,967,854.97	4.61E+02	1.88E-03	6.24E-03
KCAG	2046	LDA	Aggregate	Aggregate	Diesel	182.4226498	0.000184838	0.028740763	0.02%	1,147.73	2.09E-01	2.12E-07	3.30E-05
KCAG	2046	LDA	Aggregate	Aggregate	Electricity	0	0	0	4.86%	265,796.37	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	LDA	Aggregate	Aggregate	Plug-in Hybrid	105.821597	0.000295641	0.000404437	1.70%	93,190.76	9.86E+00	2.76E-05	3.77E-05
KCAG	2046	LDT1	Aggregate	Aggregate	Gasoline	271.1900582	0.001052818	0.003342899	2.28%	124,653.69	3.38E+01	1.31E-04	4.17E-04
KCAG	2046	LDT1	Aggregate	Aggregate	Diesel	339.9911976	0.000532992	0.053565752	0.00%	1.47	4.99E-04	7.82E-10	7.86E-08
KCAG	2046	LDT1	Aggregate	Aggregate	Electricity	0	0	0	0.07%	3,995.25	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	LDT1	Aggregate	Aggregate	Plug-in Hybrid	105.5938012	0.000292308	0.000396199	0.05%	2,981.72	3.15E-01	8.72E-07	1.18E-06
KCAG	2046	LDT2	Aggregate	Aggregate	Gasoline	280.9168248	0.001293286	0.003428409	19.66%	1,075,248.63	3.02E+02	1.39E-03	3.69E-03
KCAG	2046	LDT2	Aggregate	Aggregate	Diesel	251.7936802	0.000529111	0.039670197	0.07%	4,094.54	1.03E+00	2.17E-06	1.62E-04
KCAG	2046	LDT2	Aggregate	Aggregate	Electricity	0	0	0	0.57%	30,966.85	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	LDT2	Aggregate	Aggregate	Plug-in Hybrid	105.8026381	0.000292322	0.000395454	0.54%	29,423.64	3.11E+00	8.60E-06	1.16E-05
KCAG	2046	LHD1	Aggregate	Aggregate	Gasoline	748.7515869	0.001222047	0.001738654	0.73%	40,141.31	3.01E+01	4.91E-05	6.98E-05
KCAG	2046	LHD1	Aggregate	Aggregate	Diesel	605.2589712	0.004411161	0.095358797	0.50%	27,258.44	1.65E+01	1.20E-04	2.60E-03
KCAG	2046	LHD1	Aggregate	Aggregate	Electricity	0	0	0	0.98%	53,484.15	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	LHD2	Aggregate	Aggregate	Gasoline	843.0518535	0.001108399	0.002177605	0.08%	4,451.65	3.75E+00	4.93E-06	9.69E-06
KCAG	2046	LHD2	Aggregate	Aggregate	Diesel	706.3303984	0.005361111	0.111282642	0.23%	12,484.10	8.82E+00	6.69E-05	1.39E-03
KCAG	2046	LHD2	Aggregate	Aggregate	Electricity	0	0	0	0.23%	12,603.96	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	LCY	Aggregate	Aggregate	Gasoline	187.237894	0.127081591	0.034931859	0.24%	13,316.45	2.49E+00	1.69E-03	4.65E-04
KCAG	2046	MDV	Aggregate	Aggregate	Gasoline	339.7935929	0.001349829	0.003522901	11.40%	623,432.72	2.12E+02	8.42E-04	2.20E-03
KCAG	2046	MDV	Aggregate	Aggregate	Diesel	331.6639613	0.000199851	0.052253792	0.12%	6,834.29	2.27E+00	1.37E-06	3.57E-04
KCAG	2046	MDV	Aggregate	Aggregate	Electricity	0	0	0	0.52%	28,305.55	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	MDV	Aggregate	Aggregate	Plug-in Hybrid	105.831416	0.000292798	0.000396731	0.34%	18,662.44	1.98E+00	5.46E-06	7.40E-06
KCAG	2046	MH	Aggregate	Aggregate	Gasoline	1947.468885	0.004067952	0.018806471	0.03%	1,527.78	2.98E+00	6.21E-06	2.87E-05
KCAG	2046	MH	Aggregate	Aggregate	Diesel	1089.15534	0.004085218	0.171596867	0.02%	892.42	9.72E-01	3.65E-06	1.53E-04
KCAG	2046	Motor Coach	Aggregate	Aggregate	Diesel	1528.723259	0.000489016	0.240850972	0.01%	803.79	1.23E+00	3.93E-07	1.94E-04
KCAG	2046	OBUS	Aggregate	Aggregate	Gasoline	1557.931488	0.004600048	0.01645934	0.01%	736.68	1.15E+00	3.39E-06	1.21E-05
KCAG	2046	OBUS	Aggregate	Aggregate	Electricity	0	0	0	0.01%	800.29	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	PTO	Aggregate	Aggregate	Diesel	1883.294114	0.001165049	0.296713755	0.04%	2,254.95	4.25E+00	2.63E-06	6.69E-04
KCAG	2046	PTO	Aggregate	Aggregate	Electricity	0	0	0	0.03%	1,514.91	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	SBUS	Aggregate	Aggregate	Gasoline	717.6318258	0.00208416	0.010008752	0.01%	569.80	4.09E-01	1.19E-06	5.70E-06
KCAG	2046	SBUS	Aggregate	Aggregate	Diesel	1028.891728	0.000299667	0.162102311	0.02%	1,002.95	1.03E+00	3.01E-07	1.63E-04
KCAG	2046	SBUS	Aggregate	Aggregate	Electricity	0	0	0	0.03%	1,436.91	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	SBUS	Aggregate	Aggregate	Natural Gas	1063.779468	2.235413206	0.216858404	0.01%	334.63	3.56E-01	7.48E-04	7.26E-05
KCAG	2046	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	1013.875911	0.000245448	0.159736563	0.00%	65.76	6.67E-02	1.61E-08	1.05E-05
KCAG	2046	T6 CAIRP Class 4	Aggregate	Aggregate	Electricity	0	0	0	0.00%	96.02	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	1014.15514	0.000245792	0.159780555	0.00%	90.32	9.16E-02	2.22E-08	1.44E-05
KCAG	2046	T6 CAIRP Class 5	Aggregate	Aggregate	Electricity	0	0	0	0.00%	131.60	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	1013.124709	0.000245045	0.159618211	0.00%	235.21	2.38E-01	5.76E-08	3.75E-05
KCAG	2046	T6 CAIRP Class 6	Aggregate	Aggregate	Electricity	0	0	0	0.01%	344.68	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	895.4027186	0.000264531	0.141071063	0.05%	2,750.94	2.46E+00	7.28E-07	3.88E-04
KCAG	2046	T6 CAIRP Class 7	Aggregate	Aggregate	Electricity	0	0	0	0.02%	886.45	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	1042.101804	0.000277754	0.164183564	0.01%	407.73	4.25E-01	1.13E-07	6.69E-05
KCAG	2046	T6 Instate Delivery Class 4	Aggregate	Aggregate	Electricity	0	0	0	0.01%	471.13	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	1043.369457	0.00027702	0.164383283	0.00%	139.41	1.45E-01	3.86E-08	2.29E-05
KCAG	2046	T6 Instate Delivery Class 5	Aggregate	Aggregate	Electricity	0	0	0	0.00%	159.63	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	1042.188389	0.000284097	0.164197205	0.02%	950.03	9.90E-01	2.70E-07	1.56E-04
KCAG	2046	T6 Instate Delivery Class 6	Aggregate	Aggregate	Electricity	0	0	0	0.02%	1,096.75	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	1070.985629	0.000386087	0.168734222	0.01%	458.10	4.91E-01	1.77E-07	7.73E-05
KCAG	2046	T6 Instate Delivery Class 7	Aggregate	Aggregate	Electricity	0	0	0	0.01%	302.44	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 Instate Delivery Class 7	Aggregate	Aggregate	Natural Gas	1024.462947	0.872581682	0.208843474	0.00%	9.58	9.82E-03	8.36E-06	2.00E-06
KCAG	2046	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	1010.664377	0.000251824	0.159230584	0.04%	2,065.57	2.09E+00	5.20E-07	3.29E-04
KCAG	2046	T6 Instate Other Class 4	Aggregate	Aggregate	Electricity	0	0	0	0.05%	2,498.64	0.00E+00	0.00E+00	0.00E+00



SCENARIO	KCAG 2046 NB - RUNEX
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Source	EMFAC2021 (v1.0.2) Emission Rates
Region Type	MPO
Region	KCAG
Calendar Year	2046
Season	Annual
Vehicle Classification	EMFAC202X Categories
Emissions Rate and Vehicle Activity Units	Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip

Daily VMT	5,652,866
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Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	CO <sub>2</sub> RUNEX	CH <sub>4</sub> RUNEX	N <sub>2</sub> O RUNEX	Fleet Mix	VMT per Day	CO <sub>2</sub> RUNEX Emissions (tons/day)	CH <sub>4</sub> RUNEX Emissions (tons/day)	N <sub>2</sub> O RUNEX Emissions (tons/day)
KCAG	2046	All Other Buses	Aggregate	Aggregate	Diesel	1034.857466	0.002136191	0.163042215	0.02%	988.53	1.02E+00	2.11E-06	1.61E-04
KCAG	2046	All Other Buses	Aggregate	Aggregate	Natural Gas	902.4709743	0.850338478	0.183974612	0.00%	68.57	6.19E-02	5.83E-05	1.26E-05
KCAG	2046	LDA	Aggregate	Aggregate	Gasoline	234.4622994	0.000954628	0.003171641	35.99%	2,034,415.74	4.77E+02	1.94E-03	6.45E-03
KCAG	2046	LDA	Aggregate	Aggregate	Diesel	182.4226498	0.000184838	0.028740763	0.02%	1,186.55	2.16E+01	2.19E-07	3.41E-05
KCAG	2046	LDA	Aggregate	Aggregate	Electricity	0	0	0	4.86%	274,786.68	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	LDA	Aggregate	Aggregate	Plug-in Hybrid	105.821597	0.000295641	0.000404437	1.70%	96,342.85	1.02E+01	2.85E-05	3.90E-05
KCAG	2046	LDT1	Aggregate	Aggregate	Gasoline	271.1900582	0.001052818	0.003342899	2.28%	128,869.97	3.49E+01	1.36E-04	4.31E-04
KCAG	2046	LDT1	Aggregate	Aggregate	Diesel	339.9911976	0.000532992	0.053565752	0.00%	1.52	5.16E-04	8.08E-10	8.12E-08
KCAG	2046	LDT1	Aggregate	Aggregate	Electricity	0	0	0	0.07%	4,130.39	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	LDT1	Aggregate	Aggregate	Plug-in Hybrid	105.5938012	0.000292308	0.000396199	0.05%	3,082.58	3.26E-01	9.01E-07	1.22E-06
KCAG	2046	LDT2	Aggregate	Aggregate	Gasoline	280.9168248	0.001293286	0.003428409	19.66%	1,111,617.86	3.12E+02	1.44E-03	3.81E-03
KCAG	2046	LDT2	Aggregate	Aggregate	Diesel	251.7936802	0.000529111	0.039670197	0.07%	4,233.04	1.07E+00	2.24E-06	1.68E-04
KCAG	2046	LDT2	Aggregate	Aggregate	Electricity	0	0	0	0.57%	32,014.27	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	LDT2	Aggregate	Aggregate	Plug-in Hybrid	105.8026381	0.000292322	0.000395454	0.54%	30,418.87	3.22E+00	8.89E-06	1.20E-05
KCAG	2046	LHD1	Aggregate	Aggregate	Gasoline	748.7515869	0.001222047	0.001738654	0.73%	41,499.06	3.11E+01	5.07E-05	7.22E-05
KCAG	2046	LHD1	Aggregate	Aggregate	Diesel	605.2589712	0.004411161	0.095358797	0.50%	28,180.43	1.71E+01	1.24E-04	2.69E-03
KCAG	2046	LHD1	Aggregate	Aggregate	Electricity	0	0	0	0.98%	55,293.20	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	LHD2	Aggregate	Aggregate	Gasoline	843.0518535	0.001108399	0.002177605	0.08%	4,602.22	3.88E+00	5.10E-06	1.00E-05
KCAG	2046	LHD2	Aggregate	Aggregate	Diesel	706.3303984	0.005361111	0.111282642	0.23%	12,906.37	9.12E+00	6.92E-05	1.44E-03
KCAG	2046	LHD2	Aggregate	Aggregate	Electricity	0	0	0	0.23%	13,030.27	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	MCY	Aggregate	Aggregate	Gasoline	187.237894	0.127081591	0.034931859	0.24%	13,766.86	2.58E+00	1.75E-03	4.81E-04
KCAG	2046	MDV	Aggregate	Aggregate	Gasoline	339.7935929	0.001349829	0.003522901	11.40%	644,519.72	2.19E+02	8.70E-04	2.27E-03
KCAG	2046	MDV	Aggregate	Aggregate	Diesel	331.6639613	0.000199851	0.052253792	0.12%	7,065.45	2.34E+00	1.41E-06	3.69E-04
KCAG	2046	MDV	Aggregate	Aggregate	Electricity	0	0	0	0.52%	29,262.96	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	MDV	Aggregate	Aggregate	Plug-in Hybrid	105.831416	0.000292798	0.000396731	0.34%	19,293.68	2.04E+00	5.65E-06	7.65E-06
KCAG	2046	MH	Aggregate	Aggregate	Gasoline	1947.468885	0.004067952	0.018806471	0.03%	1,579.46	3.08E+00	6.43E-06	2.97E-05
KCAG	2046	MH	Aggregate	Aggregate	Diesel	1089.15534	0.004085218	0.171596867	0.02%	922.61	1.00E+00	3.77E-06	1.58E-04
KCAG	2046	Motor Coach	Aggregate	Aggregate	Diesel	1528.723259	0.000489016	0.240850972	0.01%	830.98	1.27E+00	4.06E-07	2.00E-04
KCAG	2046	OBUS	Aggregate	Aggregate	Gasoline	1557.931488	0.004600048	0.01645934	0.01%	761.60	1.19E+00	3.50E-06	1.25E-05
KCAG	2046	OBUS	Aggregate	Aggregate	Electricity	0	0	0	0.01%	827.36	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	PTO	Aggregate	Aggregate	Diesel	1883.294114	0.001165049	0.296713755	0.04%	2,331.23	4.39E+00	2.72E-06	6.92E-04
KCAG	2046	PTO	Aggregate	Aggregate	Electricity	0	0	0	0.03%	1,566.15	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	SBUS	Aggregate	Aggregate	Gasoline	717.6318258	0.00208416	0.010008752	0.01%	589.07	4.23E-01	1.23E-06	5.90E-06
KCAG	2046	SBUS	Aggregate	Aggregate	Diesel	1028.891728	0.000299667	0.162102311	0.02%	1,036.87	1.07E+00	3.11E-07	1.68E-04
KCAG	2046	SBUS	Aggregate	Aggregate	Electricity	0	0	0	0.03%	1,485.51	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	SBUS	Aggregate	Aggregate	Natural Gas	1063.779468	2.235413206	0.216858404	0.01%	345.95	3.68E-01	7.73E-04	7.50E-05
KCAG	2046	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	1013.875911	0.000245448	0.159736563	0.00%	67.98	6.89E-02	1.67E-08	1.09E-05
KCAG	2046	T6 CAIRP Class 4	Aggregate	Aggregate	Electricity	0	0	0	0.00%	99.27	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	1014.15514	0.000245792	0.159780555	0.00%	93.38	9.47E-02	2.30E-08	1.49E-05
KCAG	2046	T6 CAIRP Class 5	Aggregate	Aggregate	Electricity	0	0	0	0.00%	136.05	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	1013.124709	0.000245045	0.159618211	0.00%	243.17	2.46E-01	5.96E-08	3.88E-05
KCAG	2046	T6 CAIRP Class 6	Aggregate	Aggregate	Electricity	0	0	0	0.01%	356.34	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	895.4027186	0.000264531	0.141071063	0.05%	2,843.99	2.55E+00	7.52E-07	4.01E-04
KCAG	2046	T6 CAIRP Class 7	Aggregate	Aggregate	Electricity	0	0	0	0.02%	916.44	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	1042.101804	0.000277754	0.164183564	0.01%	421.52	4.39E-01	1.17E-07	6.92E-05
KCAG	2046	T6 Instate Delivery Class 4	Aggregate	Aggregate	Electricity	0	0	0	0.01%	487.06	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	1043.369457	0.00027702	0.164383283	0.00%	144.12	1.50E-01	3.99E-08	2.37E-05
KCAG	2046	T6 Instate Delivery Class 5	Aggregate	Aggregate	Electricity	0	0	0	0.00%	165.03	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	1042.188389	0.000284097	0.164197205	0.02%	982.16	1.02E+00	2.79E-07	1.61E-04
KCAG	2046	T6 Instate Delivery Class 6	Aggregate	Aggregate	Electricity	0	0	0	0.02%	1,133.84	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	1070.985629	0.000386087	0.168734222	0.01%	473.60	5.07E-01	1.83E-07	7.99E-05
KCAG	2046	T6 Instate Delivery Class 7	Aggregate	Aggregate	Electricity	0	0	0	0.01%	312.67	0.00E+00	0.00E+00	0.00E+00
KCAG	2046	T6 Instate Delivery Class 7	Aggregate	Aggregate	Natural Gas	1024.462947	0.872581682	0.208843474	0.00%	9.91	1.01E-02	8.64E-06	2.07E-06
KCAG	2046	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	1010.664377	0.000251824	0.159230584	0.04%	2,135.44	2.16E+00	5.38E-07	3.40E-04
KCAG	2046	T6 Instate Other Class 4	Aggregate	Aggregate	Electricity	0	0	0	0.05%	2,583.15	0.00E+00	0.00E+00	0.00E+00



# Appendix B

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Special Status Species Tables

**Table B-1 Special-Status Plant Species with the Potential to Occur in the KCAG region**

Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank CRPR	Habitat Requirements
<i>Astragalus hornii</i> var. <i>hornii</i> Horn's milk-vetch	None/None GUT1/S1 1B.1	Annual herb. Meadows and seeps, playas. Alkaline, lake margins. Elevations: 195-2790ft. (60-850m.) Blooms May-Oct.
<i>Atriplex cordulata</i> var. <i>cordulata</i> heartscale	None/None G3T2/S2 1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland. Alkaline (sometimes) Elevations: 0-560m. Blooms Apr-Oct.
<i>Atriplex cordulata</i> var. <i>erecticaulis</i> Earlimart orache	None/None G3T1/S1 1B.2	Annual herb. Valley and foothill grassland. Elevations: 130-330ft. (40-100m.) Blooms Aug-Sep(Nov).
<i>Atriplex coronata</i> var. <i>vallicola</i> Lost Hills crownscale	None/None G4T3/S3 1B.2	Annual herb. Chenopod scrub, valley and foothill grassland, vernal pools. Alkaline. Elevations: 165-2085ft. (50-635m.) Blooms Apr-Sep.
<i>Atriplex depressa</i> brittlescale	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Alkaline, clay. Elevations: 5-1050ft. (1-320m.) Blooms Apr-Oct.
<i>Atriplex minuscula</i> lesser saltscale	None/None G2/S2 1B.1	Annual herb. Chenopod scrub, playas, valley and foothill grassland. Alkaline, sandy. Elevations: 50-655ft. (15-200m.) Blooms May-Oct.
<i>Atriplex subtilis</i> subtle orache	None/None G1/S1 1B.2	Annual herb. Valley and foothill grassland. Alkaline. Elevations: 130-330ft. (40-100m.) Blooms (Apr)Jun-Sep(Oct).
<i>Caulanthus californicus</i> California jewelflower	FE/SCE G1/S1 1B.1	Annual herb. Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. Sandy. Elevations: 200-3280ft. (61-1000m.) Blooms Feb-May.
<i>Caulanthus lemmonii</i> Lemmon's jewelflower	None/None G3/S3 1B.2	Annual herb. Pinyon and juniper woodland, valley and foothill grassland. Elevations: 260-5185ft. (80-1580m.) Blooms Feb-May.
<i>Chorizanthe biloba</i> var. <i>immemora</i> Hernandez spineflower	None/None G3T1T2/S1S2 1B.2	Annual herb. Chaparral, cismontane woodland. Clay (sometimes), gravelly (often), serpentinite (usually). Elevations: 1395-3660ft. (425-1115m.) Blooms May-Aug(Sep).
<i>Cirsium crassicaule</i> slough thistle	None/None G1/S1 1B.1	Annual/perennial herb. Chenopod scrub, marshes and swamps, riparian scrub. Sloughs, riverbanks, and marshy areas. Elevations: 10-330ft. (3-100m.) Blooms May-Aug.
<i>Deinandra halliana</i> Hall's tarplant	None/None G3/S3 1B.1	Annual herb. Chenopod scrub, cismontane woodland, valley and foothill grassland. Reported from a variety of substrates including clay, sand, and alkaline soils. Elevations: 855-3115ft. (260-950m.) Blooms (Mar)Apr-May.
<i>Delphinium recurvatum</i> recurved larkspur	None/None G2?/S2? 1B.2	Perennial herb. Chenopod scrub, cismontane woodland, valley and foothill grassland. Alkaline. Elevations: 10-2590ft. (3-790m.) Blooms Mar-Jun.
<i>Eremalche parryi</i> ssp. <i>kernensis</i> Kern mallow	FE/None G3G4T3/S3 1B.2	Annual herb. Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. On dry, open, sandy to clay soils; usually within valley saltbush scrub; often at edge of balds. Elevations: 230-4230ft. (70-1290m.) Blooms Jan(Feb)Mar-May.

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Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank CRPR	Habitat Requirements
<i>Eriogonum temblorese</i> Temblor buckwheat	None/None G2/S2 1B.2	Annual herb. Valley and foothill grassland. Barren clay or sandstone substrates. Elevations: 985-3280ft. (300-1000m.) Blooms (Apr)May-Sep.
<i>Lagophylla diabolensis</i> Diablo Range hare-leaf	None/None G2/S2 1B.2	Annual herb. Cismontane woodland, valley and foothill grassland. Clay. Elevations: 1200-2905ft. (365-885m.) Blooms Apr-Sep.
<i>Lasthenia chrysantha</i> alkali-sink goldfields	None/None G2/S2 1B.1	Annual herb. Vernal pools. Alkaline. Elevations: 0-655ft. (0-200m.) Blooms Feb-Apr.
<i>Layia heterotricha</i> pale-yellow layia	None/None G2/S2 1B.1	Annual herb. Cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. Alkaline or clay soils; open areas. Elevations: 985-5595ft. (300-1705m.) Blooms Mar-Jun.
<i>Madia radiata</i> showy golden madia	None/None G3/S3 1B.1	Annual herb. Cismontane woodland, valley and foothill grassland. Mostly on adobe clay in grassland or among shrubs. Elevations: 80-3985ft. (25-1215m.) Blooms Mar-May.
<i>Malacothamnus aboriginum</i> Indian Valley bush-mallow	None/None G3/S3 1B.2	Perennial deciduous shrub. Chaparral, cismontane woodland. Granitic outcrops and sandy bare soil, often in disturbed soils. Elevations: 490-5580ft. (150-1700m.) Blooms Apr-Oct.
<i>Monolopia congdonii</i> San Joaquin woollythreads	FE/None G2/S2 1B.2	Annual herb. Chenopod scrub, valley and foothill grassland. Alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub. Elevations: 195-2625ft. (60-800m.) Blooms Feb-May.
<i>Nama stenocarpa</i> mud nama	None/None G4G5/S1S2 2B.2	Annual/perennial herb. Marshes and swamps. Lake shores, river banks, intermittently wet areas. Elevations: 15-1640ft. (5-500m.) Blooms Jan-Jul.
<i>Puccinellia simplex</i> California alkali grass	None/None G3/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. Alkaline, vernal mesic. Sinks, flats, and lake margins. Elevations: 5-3050ft. (2-930m.) Blooms Mar-May.
<i>Sagittaria sanfordii</i> Sanford's arrowhead	None/None G3/S3 1B.2	Perennial rhizomatous herb (emergent). Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. Elevations: 0-2135ft. (0-650m.) Blooms May-Oct(Nov).
<i>Tropidocarpum californicum</i> Kings gold	None/None G1/S1 1B.1	Annual herb. Chenopod scrub. Elevations: 215-590ft. (65-180m.) Blooms Feb-Mar.

FE = Federally Endangered      FT = Federally Threatened      DL = Delisted  
SE = State Endangered          ST = State Threatened          SR = State Rare

SCE = State Candidate Endangered  
G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDDB RareFind5.

**CRPR (California Rare Plant Rank):**

- 1A=Presumed Extinct in California
- 1B=Rare, Threatened, or Endangered in California and elsewhere
- 2=Rare, Threatened, or Endangered in California, but more common elsewhere
- 3=Need more information (a Review List)
- 4=Plants of Limited Distribution (a Watch List)



Scientific Name	Status Fed/State ESA Global Rank/ State Rank	Habitat Requirements
Common Name	CRPR	

**CRPR Threat Code Extension:**

.1=Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2=Fairly endangered in California (20-80% occurrences threatened)

.3=Not very endangered in California (<20% of occurrences threatened)

Sources: CNDDDB (CDFW 2022a); USFWS IPaC (2022a), and CNPS Rare Plant Inventory (2022)

**Table B-2 Special-Status Wildlife Species with the Potential to Occur in the KCAG region**

Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank CDFW	Habitat Requirements
<b>Invertebrates</b>		
<i>Branchinecta conservatio</i> conservancy fairy shrimp	FE/None G2/S2	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabits astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, central Coast Mountains, and South Coast Mountains. Inhabits, small clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.
<i>Danaus plexippus</i> pop. 1 monarch butterfly	FC/None G4T2T3/S2S3	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	FE/None G4/S3S4	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Inhabits pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.
<b>Fish</b>		
<i>Hypomesus transpacificus</i> Delta smelt	FT/SE G1/S1	Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.
<b>Amphibians</b>		
<i>Ambystoma californiense</i> pop. 1 California tiger salamander – central California DPS	FT/ST G2G3/S2S3 WL	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.
<i>Rana draytonii</i> California red-legged frog	FT/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.
<i>Spea hammondi</i> western spadefoot	None/None G3/S3 SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.
<b>Reptiles</b>		
<i>Anniella</i> spp. California legless lizard	None/None G3G4/S3S4 SSC	Contra Costa County south to San Diego, within a variety of open habitats. This element represents California records of <i>Anniella</i> not yet assigned to new species within the <i>Anniella pulchra</i> complex. Variety of habitats; generally, in moist, loose soil. They prefer soils with a high moisture content.
<i>Emys marmorata</i> western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.

Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank CDFW	Habitat Requirements
<i>Gambelia sila</i> blunt-nosed leopard lizard	FE/SE G1/S1 FP	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.
<i>Masticophis flagellum ruddocki</i> San Joaquin whipsnake	None/None G5T2T3/S2? SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.
<i>Thamnophis gigas</i> giant gartersnake	FT/ST G2/S2	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the gartersnakes in California.
<b>Birds</b>		
<i>Agelaius tricolor</i> tricolored blackbird	None/ST G1G2/S1S2 SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.
<i>Athene cunicularia</i> burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.
<i>Buteo swainsoni</i> Swainson's hawk	None/ST G5/S3	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.
<i>Charadrius nivosus nivosus</i> western snowy plover	FT/None G3T3/S2 SSC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.
<i>Dendrocygna bicolor</i> fulvous whistling-duck	None/None G5/S1 SSC	Fresh-water marsh. Tule/cattail marsh.
<i>Falco mexicanus</i> prairie falcon	None/None G5/S4 WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.
<i>Plegadis chihi</i> white-faced ibis	None/None G5/S3S4 WL	Shallow freshwater marsh. Dense tule thickets for nesting, interspersed with areas of shallow water for foraging.
<i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	None/None G5/S3 SSC	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as Odonata are abundant, nesting timed with maximum emergence of aquatic insects.
<b>Mammals</b>		
<i>Ammospermophilus nelsoni</i> Nelson's (=San Joaquin) antelope squirrel	None/ST G2G3/S2S3	Occurs in Western San Joaquin Valley from 200-1200 feet elevation. Uses dry, sparsely vegetated areas with a variety of soils suitable for digging. Digs burrows or uses kangaroo rat or other small mammal burrows. Needs widely scattered shrubs, forbs, and grasses in broken terrain, often with gullies and washes.

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Scientific Name Common Name	Status Fed/State ESA Global Rank/ State Rank CDFW	Habitat Requirements
<i>Dipodomys ingens</i> giant kangaroo rat	FE/SE G1G2/S1S2	Found in annual grasslands on the western side of the San Joaquin Valley. Occasionally occurs in alkali scrub. Prefers areas with sparse cover, can be found in areas of cattle grazing. Requires level or slightly sloping terrain and friable soils for burrowing.
<i>Dipodomys nitratooides brevinasus</i> short-nosed kangaroo rat	None/None G3T1T2/S1S2 SSC	Occurs along the western side of San Joaquin Valley in grassland and desert shrub associations, especially Atriplex. Can occur in highly alkaline soils among others, require friable soils for burrowing. Favors flat to gently sloping terrain.
<i>Dipodomys nitratooides exilis</i> Fresno kangaroo rat	FE/SE G3TH/SH	Alkali sink-open grassland habitats in western Fresno County. Bare alkaline clay-based soils subject to seasonal inundation, with more friable soil mounds around shrubs and grasses.
<i>Dipodomys nitratooides nitratooides</i> Tipton kangaroo rat	FE/SE G3T1T2/S1S2	Found in saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. Needs soft friable soils for burrowing which do not experience seasonal flooding. Often digs burrows in elevated mounds, including the base of shrubs in densely vegetated areas.
<i>Puma concolor</i> mountain lion (Southern California/Central Coast ESU)	None/SCE Provisionally listed	Found across California, often in areas where deer are present. Prime habitat includes foothills and mountains.
<i>Onychomys torridus tularensis</i> <i>Tulare grasshopper mouse</i>	None/None G5T1T2/S1S2 SSC	Hot, arid valleys and scrub deserts in the southern San Joaquin Valley. Diet almost exclusively composed of arthropods, therefore needs abundant supply of insects.
<i>Sorex ornatus relictus</i> <i>Buena Vista Lake ornate shrew</i>	FE/None G5T1/S1 SSC	Marshlands and riparian areas in the Tulare Basin. Prefers moist soil. Uses stumps, logs and litter for cover.
<i>Taxidea taxus</i> American badger	None/None G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/ST G4T2/S2	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.

FT = Federally Threatened                      SE = State Endangered  
FC = Federal Candidate Species              ST = State Threatened  
FE = Federally Endangered                      SR = State Rare  
FS = Federally Sensitive                        SCE = State Candidate Endangered  
DL = Delisted                                        SS = State Sensitive  
SSC = CDFW Species of Special Concern      FP = Fully Protected  
WL = Watch List

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDDB RareFind3

Sources: CNDDDB (CDFW 2022a); USFWS IPaC (2022a)