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MEMORANDUM

DATE: July 5, 2024

TO: Sunset Crossroads Team

FROM: Ronald Brugger, Senior Air Quality Specialist
Jessica Coria, Associate

SUBJECT: Revised Supplemental Memorandum Regarding Operational Emissions from Transport Refrigeration Units (TRUs) and updated Health Risk Assessment for the Proposed Sunset Crossroads Specific Plan Project

INTRODUCTION

The proposed Sunset Crossroads Specific Plan (project) is a proposed commercial and industrial development of a 533.8-acre property located in the City of Banning and partially in the City's Sphere of Influence in unincorporated Riverside County, as further described in the Project Description included in the Draft Environmental Impact Report (DEIR) published in December 2023 (State Clearinghouse Number (SCH No.) 2021020011). In response to comments received from the South Coast Air Quality Management (SCAQMD) and California Air Resources Board (CARB) on the October 2023 *Air Quality Impact Analysis Sunset Crossroads Specific Plan* report and the associated Section 4.3 Air Quality of the DEIR, the air quality impact analysis for the proposed project has been revised to include two updates:

- Emission estimates from potential transport refrigeration unit (TRU) use; and
- A revised Operational-Period Health Risk Assessment (HRA) to account for the additional TRU emissions and for changes in the Project Description that occurred after the HRA was completed.

Consistent with the methodology described in the DEIR, the TRU emissions estimates and HRA results were included and compared with the thresholds of significance established by the SCAQMD and the City of Banning. The results of the updated analysis are described below.

ANALYSIS RESULTS

Transport Refrigeration Units (TRU) Emissions Estimates

As specified in the project plans, only Buildings 5 and 6 could potentially be cold-storage facilities. If so configured, they would both begin operating in Phase 2. Consistent with the Proposed Project Trip Generation rates for High-Cube Cold Storage, as included in the August 31, 2023 *Sunset Crossroads Supplemental Traffic Assessment* prepared by Urban Crossroads (Final EIR Appendix J-3, Table 2), it was assumed that there would be an average of 248 trucks associated with the cold

storage portion of the proposed project that would potentially access the project site per day. As it is not known what percentage of the trucks servicing the High Cube Cold Storage portion of the proposed project would have TRUs, it was conservatively assumed that trucks of all sizes would have diesel-powered TRUs. As an additional conservative assumption, the TRUs were modeled to be operational for up to 4 hours per day on-site. This assumption is consistent with recent health analyses modeling conducted by CARB.[1] Four hours per truck visit is a conservative estimation of operational time for TRUs, as the truck operators will have access to plug-in power to operate the TRUs and will be incentivized to switch the TRU operations from diesel to electricity based on their own fuel costs and project site operational guidelines. TRUs operating at the proposed project site were assumed to be 25 bhp in size. This is yet another conservative assumption, as the CARB OFFROAD emissions model[2] used for TRU emissions factors only lists 25 and 50 hp TRUs, with 25 hp TRUs PM_{10} emission rates being higher than the 50 hp TRU PM_{10} rates. As a conservative assumption, it was also assumed that the TRUs operating at the project site were "in-state" TRUs, as defined in the CARB OFFROAD emissions model, as "in-state" TRUs have slightly higher emission factors than "out-of-state" TRUs[3] and the percentage of "in-state" versus "out-of-state" units is not known at this time. TRU emission factors available from the CARB OFFROAD emissions model are included in Attachment A of this Memorandum for reference.

This analysis ignores regulations that will gradually force the elimination of diesel-powered TRUs. The CARB TRU ATCM would require that increasing percentages of the Statewide TRU fleet be transitioned to all-electric, with requirements beginning in 2024 and full-phase out of diesel TRUs required by 2030. TRU emissions will continue to decrease into the future due to upcoming regulatory requirements and technological advances.

Updated TRU Emissions Estimates

Based on the methodology described above, TRU emissions have been calculated for the Project. Table A summarizes the criteria pollutant emissions associated with TRUs as described above. The TRU emissions calculations are included as Attachment A.

Table A: Regional Truck TRU Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	VOCs	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Truck TRU Sources	15	17	2	<1	<1	<1

Source: Compiled by LSA Associates, Inc. (March 2024).
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SO_X = sulfur oxides
VOCs = volatile organic compounds

1 California Air Resources Board (CARB). 2021. Proposed Amendments to the Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate – Appendix I, Health Analyses: Transport Refrigeration Units. July.

2 California Air Resources Board (CARB). Off-Road Emissions Inventory. Website: arb.ca.gov/emfac/offroad/emissions-inventory (accessed April 2024).

3 Ibid.

Operational Health Risk Assessment Update

The analysis conducted for the March 2023 *Health Risk Assessment Sunset Crossroads Specific Plan* (HRA) document and DEIR was updated to incorporate the operational-period TRU emission estimates, as described above; to add a line-volume source to represent the dispersion of emissions that would occur from vehicles exiting Interstate 10 (I-10) to Sunset Avenue and Highland Springs Avenue; and to match the revised project plans that would relocate the portion of Sunset Avenue between Westward Avenue and Lincoln Street, 42 feet to the west.

Table 4.3.Q from the DEIR is shown below with changes shown from the updated HRA analysis in underline-strikeout format. The supporting technical documentation from the updated HRA is included as Attachment B. As with the original HRA, the health risk estimated in this updated HRA analysis are conservative as they assume a 30-year residential exposure duration and 25-year worker exposure duration to the emissions level estimated to occur when the project is fully built-out and operational in 2027. However, emissions associated with trucking and TRUs would decrease from these estimates into the future due to technological advancements and regulatory requirements, including the CARB TRU ATCM and Advanced Clean Fleets Regulation, as further discussed in Section 4.3 of the DEIR. Thus, the actual 30-year and 25-year exposure would be lower than presented due to future decreases in emission rates from these regulations.

Revised Table 4.3.Q: Health Risk Levels for Nearby Residents and Students

Location	Maximum Cancer Risk	Maximum Noncancer Chronic Risk (Hazard Index)	Maximum Noncancer Acute Risk (Hazard Index)
Residential & Student MEI Risks	~~3.3~~3.8 in 1 million	0.00~~08~~10	0.000~~5~~3
Worker MEI Risks	~~0.02~~0.25 in 1 million	0.000~~1~~8	0.000~~1~~3
SCAQMD Significance Threshold	**10 in 1 million**	**1.0**	**1.0**
Significant?	**No**	**No**	**No**

Source: Compiled by LSA Associates, Inc. (March 2024).
MEI = maximum exposed individual
SCAQMD = South Coast Air Quality Management District

As shown in Revised Table 4.3.Q, the additional emissions from TRUs on all trucks servicing the cold-storage for Buildings 5 and 6, the additional emissions from vehicles exiting I-10 to Sunset Avenue and Highland Springs Avenue, and the relocation of the portion of Sunset Avenue between Westward Avenue and Lincoln Street, 42 feet to the west, would increase the overall cancer risk to the Residential and Student Maximum Exposed Individual (MEI) from 3.3 in one million to 3.8 in one million. For the Worker MEI, the potential cancer risk would increase from 0.02 in one million to 0.25 in one million. Revised Table 4.3.Q also shows the changes to the chronic and acute health risk levels. These results indicate that the additional emissions and project updates would not result in any new significant health risk impacts from those described in the DEIR.

Attachment A: TRU Calculations and OFFROAD TRU Emissions Factors

Attachment B: Health Risk Assessment Updated Worksheets

ATTACHMENT A

TRU CALCULATIONS AND OFFROAD TRU EMISSIONS FACTORS

TRU Emissions Worksheet

Table A-1: Operational TRU Emissions

Category	Pollutant Emissions, lbs/day					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Truck TRU Sources	15	17	2.0	0.03	0.4	0.4

Truck/TRU ADT

Source	2-axle	3-axle	4+-axle
Refrigerated Wareh	86	28	134

Assume each TRU operates for 4 hours per truck trip

Operational Year: 2027

Assume TRUs are 100% In-state

OFFROAD2021 TRU Emissions

Model Output: OFFROAD2021 (v1.0.5) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

						Emissions (tons/day)									Emissions (gm/hr per TRU)						
Region	Calend	Vehicle Category	Model Year	Horsepowe	Fuel	ROG_t	CO_tpc	NOx_t	CO2_tp	PM10_	PM2.5	SOx_tpd	NH3_tp	Popul	VOC	NOx	CO	SO2	PM10	PM2.5	CO2
Riverside (S	2027	Transport Refrigeration Unit - Instate Trailer	Aggregate	25	Diesel	0.15	0.020	0.169	29.43	0.004	0.004	0.0003	7E-07	826	7.01	7.73	0.93	0.013	0.20	0.18	1,348
Riverside (S	2027	Transport Refrigeration Unit - Instate Trailer	Aggregate	50	Diesel	0.23	0.029	0.195	44.11	0.003	0.002	0.0004	1E-06	1,087	7.85	6.78	1.01	0.015	0.09	0.08	1,534
Riverside (S	2027	Transport Refrigeration Unit - Out-Of-State Trailer	Aggregate	25	Diesel	0.15	0.020	0.151	29.16	0.004	0.004	0.0003	7E-07	5,314	1.04	1.07	0.14	0.002	0.03	0.03	207
Riverside (S	2027	Transport Refrigeration Unit - Out-Of-State Trailer	Aggregate	50	Diesel	0.08	0.009	0.065	11.58	0.001	0.001	0.0001	3E-07	1,858	1.67	1.32	0.18	0.002	0.02	0.02	236

Days/year: 365

ATTACHMENT B

HEALTH RISK ASSESSMENT UPDATED WORKSHEETS

Sunset Crossroads

Land Uses	Units TSF	ADT Cars	2-Axle	3-Axle	4+-Axle
Building 1	1,420	2,486	58	58	423
Building 2	1,386	2,426	57	57	415
Building 3	575	1,006	24	24	173
Building 4	44	202	4	4	12
Building 5	326	256	51	24	99
Building 6	152	310	47	18	79
Building 7	896	832	34	42	126
Building 8	250	948	18	22	66
Building 9	274	348	22	28	82
Building 10	222	650	18	22	62
Commercial/Retail (see below)	268.4	4,239	2,095	295	117
Gas Station [1]		956	58	188	918
Total		14,659	2,485	780	2,572

Note [1] Gas station trips based on the number of pumps, 20 gas fueling positions and 6 diesel fueling positions.
ADT = Average Daily Trips
TSF = Thousand Square Feet

Fleet Mix data from the LD Vehicle CalEEMod run

Land Use	Amount	Trip rate	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	7	176.571	0.547196	0.056762	0.174118	0.130529	0.024505	0.006824	0.012367	0.017399	0.000546	0.000242	0.024357	0.000961	0.004193
Health Club	116.7	24.13	0.547196	0.056762	0.174118	0.130529	0.024505	0.006824	0.012367	0.017399	0.000546	0.000242	0.024357	0.000961	0.004193
High Turnover (Sit Down Restaurant)	40	29.9	0.547196	0.056762	0.174118	0.130529	0.024505	0.006824	0.012367	0.017399	0.000546	0.000242	0.024357	0.000961	0.004193
Hotel	125	3.008	0.547196	0.056762	0.174118	0.130529	0.024505	0.006824	0.012367	0.017399	0.000546	0.000242	0.024357	0.000961	0.004193
Medical Office Building	9.5	22.526	0.547196	0.056762	0.174118	0.130529	0.024505	0.006824	0.012367	0.017399	0.000546	0.000242	0.024357	0.000961	0.004193
Quality Restaurant	9.5	18.737	0.547196	0.056762	0.174118	0.130529	0.024505	0.006824	0.012367	0.017399	0.000546	0.000242	0.024357	0.000961	0.004193
Regional Shopping Center	78.2	9.335	0.547196	0.056762	0.174118	0.130529	0.024505	0.006824	0.012367	0.017399	0.000546	0.000242	0.024357	0.000961	0.004193

Summarizing above into 4 vehicle categories

Land Use	Cars	2-axle	3-axle	4+-axle	
Fast Food Restaurant with Drive Thru	777	384	54	22	
Health Club	1,769	875	123	49	
High Turnover (Sit Down Restaurant)	751	371	52	21	
Hotel	236	117	16	7	
Medical Office Building	134	66	9	4	
Quality Restaurant	112	55	8	3	
Regional Shopping Center	459	227	32	13	
Totals	4,239	2,095	295	117	6,746

Idling Truck Exhaust Worksheet

Sunset Crossroads

Facility	Hour per day	Deliveries per day[1]	Trips per Hour	Diesel Idle Exhaust PM_{10} (gm/vh-hr)[2]	Diesel TRU Exhaust PM_{10} (gm/vh-hr)[3]	Diesel Idle Exhaust $PM_{2.5}$ (gm/vh-hr)[2]	Diesel TRU Exhaust $PM_{2.5}$ (gm/vh-hr)[3]	Idle Time (min/trip)[4]	TRU Run Time (min/trip)[5]	Total Diesel Exhaust PM_{10} (gm/hr)	Total Diesel Exhaust $PM_{2.5}$ (gm/hr)
Building 1	24	481	20.0	0.0122	N/A	0.0116	N/A	15	N/A	0.0609	0.0582
Building 2	24	472	19.6	0.0122	N/A	0.0116	N/A	15	N/A	0.0597	0.0571
Building 3	24	197	8.2	0.0122	N/A	0.0116	N/A	15	N/A	0.0249	0.0238
Building 4	24	16	0.7	0.0122	N/A	0.0116	N/A	15	N/A	0.0020	0.0019
Building 5	24	123	5.1	0.0122	0.1970	0.0116	0.1814	15	240	4.0540	3.7327
Building 6	24	97	4.0	0.0122	0.1970	0.0116	0.1814	15	240	3.1971	2.9437
Building 7	24	168	7.0	0.0122	N/A	0.0116	N/A	15	N/A	0.0213	0.0204
Building 8	24	88	3.7	0.0122	N/A	0.0116	N/A	15	N/A	0.0111	0.0107
Building 9	24	110	4.6	0.0122	N/A	0.0116	N/A	15	N/A	0.0139	0.0133
Building 10	24	84	3.5	0.0122	N/A	0.0116	N/A	15	N/A	0.0106	0.0102

Number of Sources	Diesel PM10 lb/hr	Diesel PM10 lb/yr	Diesel PM2.5 lb/hr	Diesel PM2.5 lb/yr
36	3.7E-06	0.0327	3.6E-06	0.0313
36	3.7E-06	0.0321	3.5E-06	0.0307
14	3.9E-06	0.0344	3.7E-06	0.0329
0	0.0E+00	0.0000	0.0E+00	0.0000
7	1.3E-03	11.1924	1.2E-03	10.3055
3	2.3E-03	20.5953	2.2E-03	18.9632
22	2.1E-06	0.0187	2.0E-06	0.0179
6	4.1E-06	0.0359	3.9E-06	0.0343
5	6.1E-06	0.0539	5.9E-06	0.0515
4	5.9E-06	0.0514	5.6E-06	0.0492

Note: Buildings 5 & 6 are the only two that would be cold storage, thus the only two that would have trucks with TRUs.

[1] Deliveries per day are the combination of 3-axle and 4+-axle trucks from project traffic study. Note that each truck visit comprises two trips, one to arrive and one to leave.

[2] Source: EMFAC2021 2027 idling emission factors for HHDT diesel trucks.

[3] Source: OFFROAD2021 2027 operating emissions factors for Transport Refrigeration Unit - Instate Trailer.

[4] It is assumed that each truck idles for 15 minute per trip to account for multiple stops, i.e. at an entry check-in, loading/unloading and miscellaneous tasks.

[5] It is assumed that each TRU operates for 4 hours per truck visit to warehouse.

Vehicle Exhaust Worksheet

Sunset Crossroads

Travel Along Building 1		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		2,486	58	58	423
		% of Vehicles That Are Diesel-Powered[6]			
Average Speed		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)7			
5 mph	PM_{10}	0.0363	2.37E-02	2.37E-02	1.21E-02
	$PM_{2.5}$	0.0348	2.27E-02	2.26E-02	1.16E-02
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 5 mph (g/mi)7			
	ROG	0.044	0.088	0.211	4.075

Total distance covered by vehicles traveling along Building 1
1,749 meters

		Number of Sources	**Emission Rates per source**		
			g/s	**lb/hr**	**lb/yr**
PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)					
PM_{10}	2.58E-06 2.46E-07 1.52E-05 6.03E-05	186	4.2E-07	3.3E-06	0.0293
$PM_{2.5}$	2.46E-06 2.35E-07 1.45E-05 5.77E-05	186	4.0E-07	3.2E-06	0.0280
ROG	1.37E-03 6.28E-05 1.72E-05 1.46E-03	186	1.6E-05	1.2E-04	1.0880

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	2.93E-02	3.34E-06
PM2.5	--	2.80E-02	3.20E-06
1,3-butadiene	0.0055	5.98E-03	6.83E-07
benzene	0.02636	2.87E-02	3.27E-06
ethylbenzene	0.01072	1.17E-02	1.33E-06
MEK	0.00019	2.07E-04	2.36E-08
naphthalene	0.00048	5.22E-04	5.96E-08
propylene	0.03127998	3.40E-02	3.88E-06
styrene	0.00126	1.37E-03	1.56E-07
toluene	0.05879998	6.40E-02	7.30E-06
m & p-xylene	0.03639998	3.96E-02	4.52E-06

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Travel Along Building 2		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		2,426	57	57	415
		% of Vehicles That Are Diesel-Powered[6]			
Average Speed		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)7			
5 mph	PM_{10}	0.0363	2.37E-02	2.37E-02	1.21E-02
	$PM_{2.5}$	0.0348	2.27E-02	2.26E-02	1.16E-02
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 5 mph (g/mi)7			
	ROG	0.044	0.088	0.211	4.075

Total distance covered by vehicles traveling along Building 2
1,715 meters

		Number of Sources	**Emission Rates per source**		
			g/s	**lb/hr**	**lb/yr**
	PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)				
PM_{10}	2.46E-06	2.37E-07	1.46E-05	5.80E-05	181	4.2E-07	3.3E-06	0.0289
$PM_{2.5}$	2.36E-06	2.27E-07	1.40E-05	5.55E-05	181	4.0E-07	3.2E-06	0.0277
ROG	1.31E-03	6.05E-05	1.65E-05	1.40E-03	181	1.5E-05	1.2E-04	1.0726

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	2.89E-02	3.30E-06
PM2.5	--	2.77E-02	3.16E-06
1,3-butadiene	0.0055	5.90E-03	6.73E-07
benzene	0.02636	2.83E-02	3.23E-06
ethylbenzene	0.01072	1.15E-02	1.31E-06
MEK	0.00019	2.04E-04	2.32E-08
naphthalene	0.00048	5.15E-04	5.87E-08
propylene	0.03127998	3.36E-02	3.83E-06
styrene	0.00126	1.35E-03	1.54E-07
toluene	0.05879998	6.31E-02	7.19E-06
m & p-xylene	0.03639998	3.90E-02	4.45E-06

Vehicle Exhaust Worksheet

Sunset Crossroads

Travel Along Building 3		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		1,006	24	24	173
		% of Vehicles That Are Diesel-Powered[6]			
Average Speed		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)7			
5 mph	PM_{10}	0.0363	2.37E-02	2.37E-02	1.21E-02
	$PM_{2.5}$	0.0348	2.27E-02	2.26E-02	1.16E-02
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 5 mph (g/mi)7			
	ROG	0.044	0.088	0.211	4.075
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	4.57E-07	4.41E-08	2.72E-06	1.08E-05
	$PM_{2.5}$	4.37E-07	4.22E-08	2.61E-06	1.03E-05
	ROG	2.43E-04	1.13E-05	3.07E-06	2.62E-04

Total distance covered by vehicles traveling along Building 3
767 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
83	1.7E-07	1.3E-06	0.0118
83	1.6E-07	1.3E-06	0.0113
83	6.3E-06	5.0E-05	0.4351

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.18E-02	1.34E-06
PM2.5	--	1.13E-02	1.28E-06
1,3-butadiene	0.0055	2.39E-03	2.73E-07
benzene	0.02636	1.15E-02	1.31E-06
ethylbenzene	0.01072	4.66E-03	5.32E-07
MEK	0.00019	8.27E-05	9.43E-09
naphthalene	0.00048	2.09E-04	2.38E-08
propylene	0.03127998	1.36E-02	1.55E-06
styrene	0.00126	5.48E-04	6.25E-08
toluene	0.05879998	2.56E-02	2.92E-06
m & p-xylene	0.03639998	1.58E-02	1.81E-06

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Travel Along Building 4		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		202	4	4	12
		% of Vehicles That Are Diesel-Powered[6]			
Average Speed		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)7			
5 mph	PM_{10}	0.0363	2.37E-02	2.37E-02	1.21E-02
	$PM_{2.5}$	0.0348	2.27E-02	2.26E-02	1.16E-02
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 5 mph (g/mi)7			
	ROG	0.044	0.088	0.211	4.075
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	8.09E-09	6.61E-10	4.09E-08	6.61E-08
	$PM_{2.5}$	7.74E-09	6.33E-10	3.91E-08	6.32E-08
	ROG	4.30E-06	1.69E-07	4.61E-08	1.60E-06

Total distance covered by vehicles traveling along Building 4
68 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
8	1.4E-08	1.1E-07	0.0010
8	1.4E-08	1.1E-07	0.0010
8	7.6E-07	6.1E-06	0.0532

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.01E-03	1.15E-07
PM2.5	--	9.63E-04	1.10E-07
1,3-butadiene	0.0055	2.93E-04	3.34E-08
benzene	0.02636	1.40E-03	1.60E-07
ethylbenzene	0.01072	5.70E-04	6.51E-08
MEK	0.00019	1.01E-05	1.15E-09
naphthalene	0.00048	2.55E-05	2.91E-09
propylene	0.03127998	1.66E-03	1.90E-07
styrene	0.00126	6.70E-05	7.65E-09
toluene	0.05879998	3.13E-03	3.57E-07
m & p-xylene	0.03639998	1.94E-03	2.21E-07

Vehicle Exhaust Worksheet

Sunset Crossroads

Travel Along Building 5		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		256	51	24	99
		% of Vehicles That Are Diesel-Powered[6]			
Average Speed		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)7			
5 mph	PM_{10}	0.0363	2.37E-02	2.37E-02	1.21E-02
	$PM_{2.5}$	0.0348	2.27E-02	2.26E-02	1.16E-02
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 5 mph (g/mi)7			
	ROG	0.044	0.088	0.211	4.075
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	4.83E-08	5.48E-05	5.59E-05	5.73E-05
	$PM_{2.5}$	4.63E-08	5.04E-05	5.04E-05	5.04E-05
	ROG	2.57E-05	1.02E-05	1.30E-06	6.22E-05

Total distance covered by vehicles traveling along Building 5
319 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
35	4.8E-06	3.8E-05	0.3339
35	4.3E-06	3.4E-05	0.3005
35	2.8E-06	2.3E-05	0.1975

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	3.34E-01	3.81E-05
PM2.5	--	3.01E-01	3.43E-05
1,3-butadiene	0.0055	1.09E-03	1.24E-07
benzene	0.02636	5.21E-03	5.94E-07
ethylbenzene	0.01072	2.12E-03	2.42E-07
MEK	0.00019	3.75E-05	4.28E-09
naphthalene	0.00048	9.48E-05	1.08E-08
propylene	0.03127998	6.18E-03	7.05E-07
styrene	0.00126	2.49E-04	2.84E-08
toluene	0.05879998	1.16E-02	1.32E-06
m & p-xylene	0.03639998	7.19E-03	8.20E-07

Vehicle Exhaust Worksheet

Sunset Crossroads

Travel Along Building 6		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		310	47	18	79
		% of Vehicles That Are Diesel-Powered[6]			
Average Speed		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)7			
5 mph	PM_{10}	0.0363	2.37E-02	2.37E-02	1.21E-02
	$PM_{2.5}$	0.0348	2.27E-02	2.26E-02	1.16E-02
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 5 mph (g/mi)7			
	ROG	0.044	0.088	0.211	4.075
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	8.68E-08	5.48E-05	5.60E-05	5.78E-05
	$PM_{2.5}$	8.30E-08	5.04E-05	5.04E-05	5.04E-05
	ROG	4.62E-05	1.39E-05	1.45E-06	7.36E-05

Total distance covered by vehicles traveling along Building 6
473 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
50	3.4E-06	2.7E-05	0.2346
50	3.0E-06	2.4E-05	0.2104
50	2.7E-06	2.1E-05	0.1880

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	2.35E-01	2.68E-05
PM2.5	--	2.10E-01	2.40E-05
1,3-butadiene	0.0055	1.03E-03	1.18E-07
benzene	0.02636	4.95E-03	5.65E-07
ethylbenzene	0.01072	2.01E-03	2.30E-07
MEK	0.00019	3.57E-05	4.07E-09
naphthalene	0.00048	9.02E-05	1.03E-08
propylene	0.03127998	5.88E-03	6.71E-07
styrene	0.00126	2.37E-04	2.70E-08
toluene	0.05879998	1.11E-02	1.26E-06
m & p-xylene	0.03639998	6.84E-03	7.80E-07

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

Travel Along Building 7		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		832	34	42	126
		% of Vehicles That Are Diesel-Powered[6]			
Average Speed		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)7			
5 mph	PM_{10}	0.0363	2.37E-02	2.37E-02	1.21E-02
	$PM_{2.5}$	0.0348	2.27E-02	2.26E-02	1.16E-02
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 5 mph (g/mi)7			
	ROG	0.044	0.088	0.211	4.075
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	6.93E-07	1.17E-07	8.92E-06	1.44E-05
	$PM_{2.5}$	6.63E-07	1.12E-07	8.53E-06	1.38E-05
	ROG	3.69E-04	2.99E-05	1.01E-05	3.49E-04

Total distance covered by vehicles traveling along Building 7
1,406 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
148	1.6E-07	1.3E-06	0.0114
148	1.6E-07	1.2E-06	0.0109
148	5.1E-06	4.1E-05	0.3562

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.14E-02	1.30E-06
PM2.5	--	1.09E-02	1.24E-06
1,3-butadiene	0.0055	1.96E-03	2.24E-07
benzene	0.02636	9.39E-03	1.07E-06
ethylbenzene	0.01072	3.82E-03	4.36E-07
MEK	0.00019	6.77E-05	7.72E-09
naphthalene	0.00048	1.71E-04	1.95E-08
propylene	0.03127998	1.11E-02	1.27E-06
styrene	0.00126	4.49E-04	5.12E-08
toluene	0.05879998	2.09E-02	2.39E-06
m & p-xylene	0.03639998	1.30E-02	1.48E-06

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Travel Along Building 8		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		948	18	22	66
		% of Vehicles That Are Diesel-Powered[6]			
Average Speed		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)7			
5 mph	PM_{10}	0.0363	2.37E-02	2.37E-02	1.21E-02
	$PM_{2.5}$	0.0348	2.27E-02	2.26E-02	1.16E-02
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 5 mph (g/mi)7			
	ROG	0.044	0.088	0.211	4.075
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	3.25E-07	2.54E-08	1.92E-06	3.11E-06
	$PM_{2.5}$	3.11E-07	2.43E-08	1.84E-06	2.97E-06
	ROG	1.73E-04	6.50E-06	2.17E-06	7.52E-05

Total distance covered by vehicles traveling along Building 8
578 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
61	8.8E-08	7.0E-07	0.0061
61	8.4E-08	6.7E-07	0.0059
61	4.2E-06	3.3E-05	0.2927

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	6.14E-03	7.00E-07
PM2.5	--	5.87E-03	6.70E-07
1,3-butadiene	0.0055	1.61E-03	1.84E-07
benzene	0.02636	7.72E-03	8.80E-07
ethylbenzene	0.01072	3.14E-03	3.58E-07
MEK	0.00019	5.56E-05	6.34E-09
naphthalene	0.00048	1.40E-04	1.60E-08
propylene	0.03127998	9.16E-03	1.04E-06
styrene	0.00126	3.69E-04	4.21E-08
toluene	0.05879998	1.72E-02	1.96E-06
m & p-xylene	0.03639998	1.07E-02	1.22E-06

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Travel Along Building 9		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		348	22	28	82
		% of Vehicles That Are Diesel-Powered[6]			
Average Speed		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)7			
5 mph	PM_{10}	0.0363	2.37E-02	2.37E-02	1.21E-02
	$PM_{2.5}$	0.0348	2.27E-02	2.26E-02	1.16E-02
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 5 mph (g/mi)7			
	ROG	0.044	0.088	0.211	4.075
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	1.05E-07	2.74E-08	2.15E-06	3.40E-06
	$PM_{2.5}$	1.00E-07	2.62E-08	2.06E-06	3.25E-06
	ROG	5.58E-05	7.00E-06	2.43E-06	8.23E-05

Total distance covered by vehicles traveling along Building 9
509 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
50	1.1E-07	9.0E-07	0.0079
50	1.1E-07	8.6E-07	0.0076
50	2.9E-06	2.3E-05	0.2052

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	7.91E-03	9.02E-07
PM2.5	--	7.57E-03	8.63E-07
1,3-butadiene	0.0055	1.13E-03	1.29E-07
benzene	0.02636	5.41E-03	6.17E-07
ethylbenzene	0.01072	2.20E-03	2.51E-07
MEK	0.00019	3.90E-05	4.45E-09
naphthalene	0.00048	9.85E-05	1.12E-08
propylene	0.03127998	6.42E-03	7.32E-07
styrene	0.00126	2.59E-04	2.95E-08
toluene	0.05879998	1.21E-02	1.38E-06
m & p-xylene	0.03639998	7.47E-03	8.52E-07

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Travel Along Building 10		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		650	18	22	62
		% of Vehicles That Are Diesel-Powered[6]			
Average Speed		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 5 mph (g/mi)[7]			
5 mph	PM_{10}	0.0363	2.37E-02	2.37E-02	1.21E-02
	$PM_{2.5}$	0.0348	2.27E-02	2.26E-02	1.16E-02
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 5 mph (g/mi)[7]			
	ROG	0.044	0.088	0.211	4.075
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	2.15E-07	2.46E-08	1.86E-06	2.82E-06
	$PM_{2.5}$	2.06E-07	2.35E-08	1.77E-06	2.70E-06
	ROG	1.14E-04	6.28E-06	2.09E-06	6.82E-05

Total distance covered by vehicles traveling along Building 10
558 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
59	8.3E-08	6.6E-07	0.0058
59	8.0E-08	6.3E-07	0.0055
59	3.2E-06	2.6E-05	0.2252

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	5.80E-03	6.61E-07
PM2.5	--	5.54E-03	6.33E-07
1,3-butadiene	0.0055	1.24E-03	1.41E-07
benzene	0.02636	5.94E-03	6.77E-07
ethylbenzene	0.01072	2.41E-03	2.75E-07
MEK	0.00019	4.28E-05	4.88E-09
naphthalene	0.00048	1.08E-04	1.23E-08
propylene	0.03127998	7.04E-03	8.03E-07
styrene	0.00126	2.84E-04	3.24E-08
toluene	0.05879998	1.32E-02	1.51E-06
m & p-xylene	0.03639998	8.20E-03	9.35E-07

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Bobcat Road Between Bldg 1 W. Drwy & Bldg 1 E. Drwy		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		622	14	14	106
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed 35 mph		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)[7]**			
	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)[7]			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01

Total distance covered by select Bobcat Rd. sources
346 meters

		Number of Sources	**Emission Rates per source**		
			g/s	**lb/hr**	**lb/yr**
	PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)				
PM_{10}	3.71E-08	3.75E-09	1.60E-07	1.80E-06	27	7.4E-08	5.9E-07	0.0051
$PM_{2.5}$	3.55E-08	3.58E-09	1.53E-07	1.72E-06	27	7.1E-08	5.6E-07	0.0049
ROG	9.59E-06	4.50E-07	1.20E-07	1.03E-05	27	7.6E-07	6.0E-06	0.0526

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	5.15E-03	5.87E-07
PM2.5	--	4.92E-03	5.62E-07
1,3-butadiene	0.0055	2.90E-04	3.30E-08
benzene	0.02636	1.39E-03	1.58E-07
ethylbenzene	0.01072	5.64E-04	6.44E-08
MEK	0.00019	1.00E-05	1.14E-09
naphthalene	0.00048	2.53E-05	2.88E-09
propylene	0.03127998	1.65E-03	1.88E-07
styrene	0.00126	6.63E-05	7.57E-09
toluene	0.05879998	3.10E-03	3.53E-07
m & p-xylene	0.03639998	1.92E-03	2.19E-07

[1] AADT from project traffic study, assume 1/4 of Building 1 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Bobcat Road Between Bldg 2 W. Drwy & Bldg 2 E. Drwy		AADT by Truck Category[1]							
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**				
		1,850	43	43	315				
		% of Vehicles That Are Diesel-Powered[6]							
		0.2%	1%	89%	93%				
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)[7]**							
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03				
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03				
		% of Vehicles That Are Gasoline-Powered[6]							
		100%	99%	11%	6.7%				
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)[7]				**Number**			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01	**of**	**Emission Rates per source**		
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)				**Sources**	**g/s**	**lb/hr**	**lb/yr**
	PM_{10}	1.10E-07	1.12E-08	4.77E-07	5.36E-06	27	2.2E-07	1.8E-06	0.0153
	$PM_{2.5}$	1.06E-07	1.07E-08	4.56E-07	5.13E-06	27	2.1E-07	1.7E-06	0.0147
	ROG	2.85E-05	1.34E-06	3.57E-07	3.06E-05	27	2.3E-06	1.8E-05	0.1568

Total distance covered by select Bobcat Rd. sources
346 meters

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.53E-02	1.75E-06
PM2.5	--	1.47E-02	1.67E-06
1,3-butadiene	0.0055	8.62E-04	9.84E-08
benzene	0.02636	4.13E-03	4.72E-07
ethylbenzene	0.01072	1.68E-03	1.92E-07
MEK	0.00019	2.98E-05	3.40E-09
naphthalene	0.00048	7.53E-05	8.59E-09
propylene	0.03127998	4.91E-03	5.60E-07
styrene	0.00126	1.98E-04	2.25E-08
toluene	0.05879998	9.22E-03	1.05E-06
m & p-xylene	0.03639998	5.71E-03	6.51E-07

[1] AADT from project traffic study, assume 1/2 of Building 1 traffic & 1/4 of Building 2 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Bobcat Road & S. Sunset Ave. Between Bldg 3 W. Drwy & Bldg 3 E. Drwy Average Speed 35 mph		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		2,959	69	69	506
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
		Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)[7]			
	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)[7]			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	2.02E-07	2.05E-08	8.74E-07	9.82E-06
	$PM_{2.5}$	1.93E-07	1.96E-08	8.36E-07	9.40E-06
	ROG	5.22E-05	2.46E-06	6.54E-07	5.61E-05

Total distance covered by select Bobcat Rd. sources
396 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
31	3.5E-07	2.8E-06	0.0245
31	3.4E-07	2.7E-06	0.0234
31	3.6E-06	2.9E-05	0.2501

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	2.45E-02	2.80E-06
PM2.5	--	2.34E-02	2.67E-06
1,3-butadiene	0.0055	1.38E-03	1.57E-07
benzene	0.02636	6.59E-03	7.52E-07
ethylbenzene	0.01072	2.68E-03	3.06E-07
MEK	0.00019	4.75E-05	5.42E-09
naphthalene	0.00048	1.20E-04	1.37E-08
propylene	0.03127998	7.82E-03	8.93E-07
styrene	0.00126	3.15E-04	3.60E-08
toluene	0.05879998	1.47E-02	1.68E-06
m & p-xylene	0.03639998	9.11E-03	1.04E-06

[1] AADT from project traffic study, assume 1/2 of Building 1 traffic & 1/2 of Building 2 traffic & 1/2 of Building 3 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Sunset Ave. Between Bldg 3 S. Drwy & N. Drwy		AADT by Truck Category[1]			
		LDV[2]	2-Axle[3]	3-Axle[4]	4+-Axle[5]
		3,211	75	75	549
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed 35 mph		Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)[7]			
	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)[7]			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	1.62E-07	1.65E-08	7.02E-07	7.89E-06
	$PM_{2.5}$	1.55E-07	1.57E-08	6.72E-07	7.55E-06
	ROG	4.19E-05	1.98E-06	5.26E-07	4.51E-05

Total distance covered by select Sunset Ave. sources
293 meters

Number of Sources	Emission Rates per source		
	g/s	lb/hr	lb/yr
23	3.8E-07	3.0E-06	0.0265
23	3.6E-07	2.9E-06	0.0254
23	3.9E-06	3.1E-05	0.2708

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	2.65E-02	3.03E-06
PM2.5	--	2.54E-02	2.90E-06
1,3-butadiene	0.0055	1.49E-03	1.70E-07
benzene	0.02636	7.14E-03	8.14E-07
ethylbenzene	0.01072	2.90E-03	3.31E-07
MEK	0.00019	5.14E-05	5.87E-09
naphthalene	0.00048	1.30E-04	1.48E-08
propylene	0.03127998	8.47E-03	9.66E-07
styrene	0.00126	3.41E-04	3.89E-08
toluene	0.05879998	1.59E-02	1.82E-06
m & p-xylene	0.03639998	9.86E-03	1.12E-06

[1] AADT from project traffic study, assume 1/2 of Building 1 traffic & 1/2 of Building 2 traffic & 3/4 of Building 3 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Sunset Ave. Between Bldg 3 N. Drwy & Bldg 4		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		3,462	81	81	592
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed 35 mph		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)[7]**			
	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)[7]			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	1.03E-07	1.05E-08	4.47E-07	5.03E-06
	$PM_{2.5}$	9.89E-08	1.00E-08	4.28E-07	4.81E-06
	ROG	2.67E-05	1.26E-06	3.35E-07	2.88E-05

Total distance covered by select Sunset Ave. sources
173 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
14	4.0E-07	3.2E-06	0.0278
14	3.8E-07	3.0E-06	0.0266
14	4.1E-06	3.2E-05	0.2835

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	2.78E-02	3.17E-06
PM2.5	--	2.66E-02	3.03E-06
1,3-butadiene	0.0055	1.56E-03	1.78E-07
benzene	0.02636	7.47E-03	8.53E-07
ethylbenzene	0.01072	3.04E-03	3.47E-07
MEK	0.00019	5.39E-05	6.15E-09
naphthalene	0.00048	1.36E-04	1.55E-08
propylene	0.03127998	8.87E-03	1.01E-06
styrene	0.00126	3.57E-04	4.08E-08
toluene	0.05879998	1.67E-02	1.90E-06
m & p-xylene	0.03639998	1.03E-02	1.18E-06

[1] AADT from project traffic study, assume 1/2 of Building 1 traffic & 1/2 of Building 2 traffic & all of Building 3 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Sunset Ave. Between Bldg 4 & Westward Ave.		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		3,664	85	85	604
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)[7]**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)[7]			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	1.27E-07	1.27E-08	5.44E-07	5.94E-06
	$PM_{2.5}$	1.21E-07	1.22E-08	5.20E-07	5.68E-06
	ROG	3.27E-05	1.53E-06	4.07E-07	3.40E-05

Total distance covered by select Sunset Ave. sources
200 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
16	4.1E-07	3.3E-06	0.0288
16	4.0E-07	3.1E-06	0.0276
16	4.3E-06	3.4E-05	0.2983

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	2.88E-02	3.29E-06
PM2.5	--	2.76E-02	3.14E-06
1,3-butadiene	0.0055	1.64E-03	1.87E-07
benzene	0.02636	7.86E-03	8.97E-07
ethylbenzene	0.01072	3.20E-03	3.65E-07
MEK	0.00019	5.67E-05	6.47E-09
naphthalene	0.00048	1.43E-04	1.63E-08
propylene	0.03127998	9.33E-03	1.06E-06
styrene	0.00126	3.76E-04	4.29E-08
toluene	0.05879998	1.75E-02	2.00E-06
m & p-xylene	0.03639998	1.09E-02	1.24E-06

[1] AADT from project traffic study, assume 1/2 of Building 1 traffic & 1/2 of Building 2 traffic & all of Buildings 3 & 4 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Sunset Ave. Between Westward Ave. & Lincoln St.		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		7,404	222	225	1,232
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	4.54E-07	4.27E-07	2.74E-06	2.22E-05
	$PM_{2.5}$	4.34E-07	3.95E-07	2.62E-06	2.12E-05
	ROG	1.17E-04	7.14E-06	1.92E-06	1.23E-04

Total distance covered by select Sunset Ave. sources
356 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
22	1.2E-06	9.3E-06	0.0817
22	1.1E-06	8.9E-06	0.0780
22	1.1E-05	9.0E-05	0.7883

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	8.17E-02	9.32E-06
PM2.5	--	7.80E-02	8.90E-06
1,3-butadiene	0.0055	4.34E-03	4.95E-07
benzene	0.02636	2.08E-02	2.37E-06
ethylbenzene	0.01072	8.45E-03	9.64E-07
MEK	0.00019	1.50E-04	1.71E-08
naphthalene	0.00048	3.78E-04	4.32E-08
propylene	0.03127998	2.47E-02	2.81E-06
styrene	0.00126	9.93E-04	1.13E-07
toluene	0.05879998	4.64E-02	5.29E-06
m & p-xylene	0.03639998	2.87E-02	3.27E-06

[1] AADT from project traffic study, assume 90% of Bldgs 1, 2, 7, 9, & 10 traffic, all of Bldgs 3 & 4 traffic, and 1/2 of Bldg 5 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

Sunset Ave. Between Lincoln St. & I-10 EB Ramp		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		8,790	313	277	1,426
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01

Total distance covered by select Sunset Ave. sources
254 meters

	Number of Sources	**Emission Rates per source**		
		g/s	**lb/hr**	**lb/yr**
PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)				
PM_{10}	16	1.5E-06	1.2E-05	0.1035
$PM_{2.5}$	16	1.4E-06	1.1E-05	0.0985
ROG	16	1.3E-05	1.0E-04	0.9147

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.03E-01	1.18E-05
PM2.5	--	9.85E-02	1.12E-05
1,3-butadiene	0.0055	5.03E-03	5.74E-07
benzene	0.02636	2.41E-02	2.75E-06
ethylbenzene	0.01072	9.81E-03	1.12E-06
MEK	0.00019	1.74E-04	1.98E-08
naphthalene	0.00048	4.39E-04	5.01E-08
propylene	0.03127998	2.86E-02	3.26E-06
styrene	0.00126	1.15E-03	1.31E-07
toluene	0.05879998	5.38E-02	6.14E-06
m & p-xylene	0.03639998	3.33E-02	3.80E-06

[1] AADT from project traffic study, assume 90% of Bldgs 1, 2, 7, 9, & 10 traffic, all of Bldgs 3, 4, 5, 6, & 8 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

Sunset Ave. Between I-10 EB Ramps and I-10 WB Ramps		AADT by Truck Category[1]			
		LDV[2]	2-Axle[3]	3-Axle[4]	4+-Axle[5]
		4,834	172	152	784
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	8.88E-08	2.46E-07	6.20E-07	4.52E-06
	$PM_{2.5}$	8.49E-08	2.27E-07	5.90E-07	4.31E-06
	ROG	2.29E-05	1.66E-06	3.90E-07	2.34E-05

Total distance covered by select Sunset Ave. sources
106 meters

Number of Sources	Emission Rates per source		
	g/s	lb/hr	lb/yr
9	6.1E-07	4.8E-06	0.0423
9	5.8E-07	4.6E-06	0.0403
9	5.4E-06	4.3E-05	0.3744

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	4.23E-02	4.83E-06
PM2.5	--	4.03E-02	4.60E-06
1,3-butadiene	0.0055	2.06E-03	2.35E-07
benzene	0.02636	9.87E-03	1.13E-06
ethylbenzene	0.01072	4.01E-03	4.58E-07
MEK	0.00019	7.11E-05	8.11E-09
naphthalene	0.00048	1.80E-04	2.05E-08
propylene	0.03127998	1.17E-02	1.34E-06
styrene	0.00126	4.72E-04	5.38E-08
toluene	0.05879998	2.20E-02	2.51E-06
m & p-xylene	0.03639998	1.36E-02	1.55E-06

[1] AADT from project traffic study, assume 49.5% of Bldgs 1, 2, 7, 9, & 10 traffic, 55% of Bldgs 3, 4, 5, 6, & 8 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

Westward Ave. from Sunset Ave. to Bldg 2 E. Drwy		AADT by Truck Category[1]			
		LDV[2]	2-Axle[3]	3-Axle[4]	4+-Axle[5]
		3,973	141	145	665
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	2.44E-07	3.69E-07	1.81E-06	1.23E-05
	$PM_{2.5}$	2.33E-07	3.41E-07	1.73E-06	1.17E-05
	ROG	6.31E-05	4.54E-06	1.24E-06	6.64E-05

Total distance covered by select Westward Ave. sources
356 meters

Number of Sources	Emission Rates per source		
	g/s	lb/hr	lb/yr
23	6.4E-07	5.1E-06	0.0444
23	6.1E-07	4.8E-06	0.0424
23	5.9E-06	4.7E-05	0.4092

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	4.44E-02	5.07E-06
PM2.5	--	4.24E-02	4.84E-06
1,3-butadiene	0.0055	2.25E-03	2.57E-07
benzene	0.02636	1.08E-02	1.23E-06
ethylbenzene	0.01072	4.39E-03	5.00E-07
MEK	0.00019	7.77E-05	8.87E-09
naphthalene	0.00048	1.96E-04	2.24E-08
propylene	0.03127998	1.28E-02	1.46E-06
styrene	0.00126	5.16E-04	5.88E-08
toluene	0.05879998	2.41E-02	2.74E-06
m & p-xylene	0.03639998	1.49E-02	1.70E-06

[1] AADT from project traffic study, assume 45% of Bldgs 1, 2 & 5 traffic and 90% of Bldgs 7, 9, & 10 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

Westward Ave. from Bldg 2 E. Drwy to Bldg 2 W. Drwy		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		3,052	113	113	515
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed 35 mph		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	1.61E-07	3.10E-07	1.24E-06	8.27E-06
	$PM_{2.5}$	1.54E-07	2.86E-07	1.19E-06	7.89E-06
	ROG	4.15E-05	3.12E-06	8.32E-07	4.41E-05

Total distance covered by select Westward Ave. sources
305 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
19	5.3E-07	4.2E-06	0.0365
19	5.0E-07	4.0E-06	0.0348
19	4.7E-06	3.7E-05	0.3281

[1] AADT from project traffic study, assume 45% of Bldgs 1, 5, & 7 traffic, 22.5% of Bldg 2 traffic, and 90% of Bldgs 9 & 10 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	3.65E-02	4.17E-06
PM2.5	--	3.48E-02	3.97E-06
1,3-butadiene	0.0055	1.80E-03	2.06E-07
benzene	0.02636	8.65E-03	9.87E-07
ethylbenzene	0.01072	3.52E-03	4.01E-07
MEK	0.00019	6.23E-05	7.11E-09
naphthalene	0.00048	1.57E-04	1.80E-08
propylene	0.03127998	1.03E-02	1.17E-06
styrene	0.00126	4.13E-04	4.72E-08
toluene	0.05879998	1.93E-02	2.20E-06
m & p-xylene	0.03639998	1.19E-02	1.36E-06

Vehicle Exhaust Worksheet

Sunset Crossroads

Westward Ave. from Bldg 2 W. Drwy to Bldg 1 W. Drwy		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		1,809	63	70	289
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	1.01E-07	8.19E-08	7.58E-07	4.70E-06
	$PM_{2.5}$	9.62E-08	7.59E-08	7.24E-07	4.49E-06
	ROG	2.60E-05	1.84E-06	5.44E-07	2.61E-05

Total distance covered by select Westward Ave. sources
322 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
20	2.8E-07	2.2E-06	0.0196
20	2.7E-07	2.1E-06	0.0187
20	2.7E-06	2.2E-05	0.1896

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.96E-02	2.24E-06
PM2.5	--	1.87E-02	2.14E-06
1,3-butadiene	0.0055	1.04E-03	1.19E-07
benzene	0.02636	5.00E-03	5.70E-07
ethylbenzene	0.01072	2.03E-03	2.32E-07
MEK	0.00019	3.60E-05	4.11E-09
naphthalene	0.00048	9.10E-05	1.04E-08
propylene	0.03127998	5.93E-03	6.77E-07
styrene	0.00126	2.39E-04	2.73E-08
toluene	0.05879998	1.11E-02	1.27E-06
m & p-xylene	0.03639998	6.90E-03	7.87E-07

[1] AADT from project traffic study, assume 10% of Bldgs 2, 5, & 7 traffic, 22.5% of Bldg 1 traffic, and 90% of Bldgs 9 & 10 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

Westward Ave. from Bldg 1 W. Drwy to Bldg 10 Drwy		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		1,498	56	63	236
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	8.77E-08	8.43E-08	7.19E-07	4.07E-06
	$PM_{2.5}$	8.39E-08	7.82E-08	6.87E-07	3.88E-06
	ROG	2.27E-05	1.71E-06	5.14E-07	2.25E-05

Total distance covered by select Westward Ave. sources
339 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
21	2.4E-07	1.9E-06	0.0164
21	2.3E-07	1.8E-06	0.0157
21	2.3E-06	1.8E-05	0.1569

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.64E-02	1.87E-06
PM2.5	--	1.57E-02	1.79E-06
1,3-butadiene	0.0055	8.63E-04	9.84E-08
benzene	0.02636	4.13E-03	4.72E-07
ethylbenzene	0.01072	1.68E-03	1.92E-07
MEK	0.00019	2.98E-05	3.40E-09
naphthalene	0.00048	7.53E-05	8.59E-09
propylene	0.03127998	4.91E-03	5.60E-07
styrene	0.00126	1.98E-04	2.25E-08
toluene	0.05879998	9.22E-03	1.05E-06
m & p-xylene	0.03639998	5.71E-03	6.51E-07

[1] AADT from project traffic study, assume 10% of Bldgs 1, 2, 5, & 7 traffic and 90% of Bldgs 9 & 10 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

Westward Ave. from Bldg 10 Drwy to Highland Home Rd.		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		978	42	45	186
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	2.86E-08	4.03E-08	2.64E-07	1.62E-06
	$PM_{2.5}$	2.74E-08	3.73E-08	2.52E-07	1.55E-06
	ROG	7.40E-06	6.37E-07	1.85E-07	8.87E-06

Total distance covered by select Westward Ave. sources
170 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
11	1.8E-07	1.4E-06	0.0124
11	1.7E-07	1.3E-06	0.0118
11	1.6E-06	1.2E-05	0.1081

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.24E-02	1.41E-06
PM2.5	--	1.18E-02	1.35E-06
1,3-butadiene	0.0055	5.95E-04	6.78E-08
benzene	0.02636	2.85E-03	3.25E-07
ethylbenzene	0.01072	1.16E-03	1.32E-07
MEK	0.00019	2.05E-05	2.34E-09
naphthalene	0.00048	5.19E-05	5.92E-09
propylene	0.03127998	3.38E-03	3.86E-07
styrene	0.00126	1.36E-04	1.55E-08
toluene	0.05879998	6.36E-03	7.25E-07
m & p-xylene	0.03639998	3.94E-03	4.49E-07

[1] AADT from project traffic study, assume 10% of Bldgs 1, 2, 5, 7, & 10 traffic and 90% of Bldg 9 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

Westward Ave. from Highland Home Rd. to Highland Springs Rd. to I-10 Ramps		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		700	24	23	121
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	2.92E-07	5.44E-07	2.02E-06	1.53E-05
	$PM_{2.5}$	2.80E-07	5.02E-07	1.93E-06	1.46E-05
	ROG	7.55E-05	5.23E-06	1.34E-06	8.20E-05

Total distance covered by select Westward Ave. sources
2,422 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
144	1.3E-07	1.0E-06	0.0088
144	1.2E-07	9.6E-07	0.0084
144	1.1E-06	9.0E-06	0.0793

[1] AADT from project traffic study, assume 10% of Bldgs 1, 2, 5, 7, 9, & 10 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	8.78E-03	1.00E-06
PM2.5	--	8.37E-03	9.55E-07
1,3-butadiene	0.0055	4.36E-04	4.97E-08
benzene	0.02636	2.09E-03	2.38E-07
ethylbenzene	0.01072	8.50E-04	9.70E-08
MEK	0.00019	1.51E-05	1.72E-09
naphthalene	0.00048	3.81E-05	4.34E-09
propylene	0.03127998	2.48E-03	2.83E-07
styrene	0.00126	9.99E-05	1.14E-08
toluene	0.05879998	4.66E-03	5.32E-07
m & p-xylene	0.03639998	2.89E-03	3.29E-07

Vehicle Exhaust Worksheet

Sunset Crossroads

Lincoln Ave. from Sunset Ave. to Bldg 6 E. Drwy		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		1,231	67	43	155
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed 35 mph		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	2.54E-08	2.44E-07	2.67E-07	1.34E-06
	$PM_{2.5}$	2.43E-08	2.25E-07	2.52E-07	1.27E-06
	ROG	6.57E-06	7.26E-07	1.24E-07	5.21E-06

Total distance covered by select Lincoln Ave. sources
120 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
12	1.6E-07	1.2E-06	0.0109
12	1.5E-07	1.2E-06	0.0103
12	1.1E-06	8.4E-06	0.0733

[1] AADT from project traffic study, assume 50% of Bldgs 5 & 6 traffic and all of Bldg 8 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.09E-02	1.24E-06
PM2.5	--	1.03E-02	1.17E-06
1,3-butadiene	0.0055	4.03E-04	4.60E-08
benzene	0.02636	1.93E-03	2.20E-07
ethylbenzene	0.01072	7.85E-04	8.96E-08
MEK	0.00019	1.39E-05	1.59E-09
naphthalene	0.00048	3.52E-05	4.01E-09
propylene	0.03127998	2.29E-03	2.61E-07
styrene	0.00126	9.23E-05	1.05E-08
toluene	0.05879998	4.31E-03	4.91E-07
m & p-xylene	0.03639998	2.67E-03	3.04E-07

Vehicle Exhaust Worksheet

Sunset Crossroads

Lincoln Ave. from Bldg 6 E. Drwy to Bldg 6 W. Drwy		AADT by Truck Category[1]			
		LDV[2]	2-Axle[3]	3-Axle[4]	4+-Axle[5]
		1,103	42	31	106
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	4.56E-08	2.35E-07	3.26E-07	1.62E-06
	$PM_{2.5}$	4.36E-08	2.17E-07	3.09E-07	1.54E-06
	ROG	1.18E-05	8.99E-07	1.79E-07	7.09E-06

Total distance covered by select Lincoln Ave. sources
240 meters

Number of Sources	Emission Rates per source		
	g/s	lb/hr	lb/yr
19	1.2E-07	9.3E-07	0.0082
19	1.1E-07	8.8E-07	0.0077
19	1.1E-06	8.3E-06	0.0731

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	8.17E-03	9.32E-07
PM2.5	--	7.72E-03	8.81E-07
1,3-butadiene	0.0055	4.02E-04	4.58E-08
benzene	0.02636	1.93E-03	2.20E-07
ethylbenzene	0.01072	7.83E-04	8.94E-08
MEK	0.00019	1.39E-05	1.58E-09
naphthalene	0.00048	3.51E-05	4.00E-09
propylene	0.03127998	2.29E-03	2.61E-07
styrene	0.00126	9.21E-05	1.05E-08
toluene	0.05879998	4.30E-03	4.90E-07
m & p-xylene	0.03639998	2.66E-03	3.03E-07

[1] AADT from project traffic study, assume 50% of Bldg 6 traffic and all of Bldg 8 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

Lincoln Ave. from Bldg 6 W. Drwy to Bldg 8 E. Drwy		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		948	18	22	66
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)[7]**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)[7]			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	7.84E-08	6.49E-09	3.39E-07	1.55E-06
	$PM_{2.5}$	7.50E-08	6.21E-09	3.24E-07	1.49E-06
	ROG	2.03E-05	7.80E-07	2.53E-07	8.88E-06

Total distance covered by select Lincoln Ave. sources
479 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
37	5.3E-08	4.2E-07	0.0037
37	5.1E-08	4.1E-07	0.0036
37	8.2E-07	6.5E-06	0.0567

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	3.72E-03	4.24E-07
PM2.5	--	3.56E-03	4.06E-07
1,3-butadiene	0.0055	3.12E-04	3.56E-08
benzene	0.02636	1.49E-03	1.71E-07
ethylbenzene	0.01072	6.08E-04	6.94E-08
MEK	0.00019	1.08E-05	1.23E-09
naphthalene	0.00048	2.72E-05	3.11E-09
propylene	0.03127998	1.77E-03	2.02E-07
styrene	0.00126	7.15E-05	8.15E-09
toluene	0.05879998	3.33E-03	3.80E-07
m & p-xylene	0.03639998	2.06E-03	2.35E-07

[1] AADT from project traffic study, assume just Bldg 8 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Lincoln Ave. from Bldg 8 E. Drwy to Bldg 8 W. Drwy		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		474	9	11	33
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)[7]**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)[7]			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	2.07E-08	1.71E-09	8.93E-08	4.10E-07
	$PM_{2.5}$	1.98E-08	1.64E-09	8.55E-08	3.92E-07
	ROG	5.34E-06	2.06E-07	6.69E-08	2.34E-06

Total distance covered by select Lincoln Ave. sources
253 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
20	2.6E-08	2.1E-07	0.0018
20	2.5E-08	2.0E-07	0.0017
20	4.0E-07	3.2E-06	0.0277

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.81E-03	2.07E-07
PM2.5	--	1.74E-03	1.98E-07
1,3-butadiene	0.0055	1.52E-04	1.74E-08
benzene	0.02636	7.30E-04	8.33E-08
ethylbenzene	0.01072	2.97E-04	3.39E-08
MEK	0.00019	5.26E-06	6.00E-10
naphthalene	0.00048	1.33E-05	1.52E-09
propylene	0.03127998	8.66E-04	9.88E-08
styrene	0.00126	3.49E-05	3.98E-09
toluene	0.05879998	1.63E-03	1.86E-07
m & p-xylene	0.03639998	1.01E-03	1.15E-07

[1] AADT from project traffic study, assume 50% of Bldg 8 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

Highland Home Ave. from Bldg 9 Drwy to Westward Ave.		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		348	22	28	82
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)[7]**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)[7]			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	3.36E-08	9.26E-09	5.03E-07	2.25E-06
	$PM_{2.5}$	3.21E-08	8.86E-09	4.81E-07	2.15E-06
	ROG	8.67E-06	1.11E-06	3.76E-07	1.29E-05

Total distance covered by Highland Home Ave. sources
559 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
43	6.5E-08	5.2E-07	0.0045
43	6.2E-08	4.9E-07	0.0043
43	5.4E-07	4.3E-06	0.0373

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	4.52E-03	5.16E-07
PM2.5	--	4.33E-03	4.94E-07
1,3-butadiene	0.0055	2.05E-04	2.34E-08
benzene	0.02636	9.82E-04	1.12E-07
ethylbenzene	0.01072	3.99E-04	4.56E-08
MEK	0.00019	7.08E-06	8.08E-10
naphthalene	0.00048	1.79E-05	2.04E-09
propylene	0.03127998	1.17E-03	1.33E-07
styrene	0.00126	4.69E-05	5.36E-09
toluene	0.05879998	2.19E-03	2.50E-07
m & p-xylene	0.03639998	1.36E-03	1.55E-07

[1] AADT from project traffic study, assume just Bldg 9 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2021 VMT data

[7] Source: EMFAC2021 emission factors for 2027 (model year aggregate).

Vehicle Exhaust Worksheet

Sunset Crossroads

I-10 EB OffRamp onto Sunset Ave.		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		4,834	172	152	784
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed 35 mph		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	3.66E-07	1.02E-06	2.56E-06	1.87E-05
	$PM_{2.5}$	3.50E-07	9.37E-07	2.43E-06	1.78E-05
	ROG	9.47E-05	6.83E-06	1.61E-06	9.67E-05

Total distance covered by I-10EB Sunset Ave. offramp sources
439 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
34	6.6E-07	5.3E-06	0.0462
34	6.3E-07	5.0E-06	0.0440
34	5.9E-06	4.7E-05	0.4089

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	4.62E-02	5.28E-06
PM2.5	--	4.40E-02	5.02E-06
1,3-butadiene	0.0055	2.25E-03	2.57E-07
benzene	0.02636	1.08E-02	1.23E-06
ethylbenzene	0.01072	4.38E-03	5.00E-07
MEK	0.00019	7.77E-05	8.86E-09
naphthalene	0.00048	1.96E-04	2.24E-08
propylene	0.03127998	1.28E-02	1.46E-06
styrene	0.00126	5.15E-04	5.88E-08
toluene	0.05879998	2.40E-02	2.74E-06
m & p-xylene	0.03639998	1.49E-02	1.70E-06

[1] AADT from project traffic study, assume 49.5% of Bldgs 1, 2, 7, 9, & 10 traffic, 55% of Bldgs 3, 4, 5, 6, & 8 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

I-10 EB OnRamp from Sunset Ave.		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		4,834	172	152	784
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	4.43E-07	1.23E-06	3.09E-06	2.26E-05
	$PM_{2.5}$	4.24E-07	1.13E-06	2.94E-06	2.15E-05
	ROG	1.14E-04	8.26E-06	1.94E-06	1.17E-04

Total distance covered by I-10EB Sunset Ave. onramp sources
531 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
56	4.9E-07	3.9E-06	0.0339
56	4.6E-07	3.7E-06	0.0323
56	4.3E-06	3.4E-05	0.3001

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	3.39E-02	3.87E-06
PM2.5	--	3.23E-02	3.69E-06
1,3-butadiene	0.0055	1.65E-03	1.88E-07
benzene	0.02636	7.91E-03	9.02E-07
ethylbenzene	0.01072	3.22E-03	3.67E-07
MEK	0.00019	5.70E-05	6.50E-09
naphthalene	0.00048	1.44E-04	1.64E-08
propylene	0.03127998	9.39E-03	1.07E-06
styrene	0.00126	3.78E-04	4.31E-08
toluene	0.05879998	1.76E-02	2.01E-06
m & p-xylene	0.03639998	1.09E-02	1.25E-06

[1] AADT from project traffic study, assume 49.5% of Bldgs 1, 2, 7, 9, & 10 traffic, 55% of Bldgs 3, 4, 5, 6, & 8 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

I-10 WB OffRamp onto Sunset Ave.		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		4,834	172	152	784
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed 35 mph		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	3.88E-07	1.08E-06	2.71E-06	1.98E-05
	$PM_{2.5}$	3.72E-07	9.94E-07	2.58E-06	1.89E-05
	ROG	1.00E-04	7.25E-06	1.71E-06	1.03E-04

Total distance covered by I-10WB Sunset Ave. offramp sources
466 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
36	6.7E-07	5.3E-06	0.0463
36	6.3E-07	5.0E-06	0.0441
36	5.9E-06	4.7E-05	0.4095

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	4.63E-02	5.28E-06
PM2.5	--	4.41E-02	5.03E-06
1,3-butadiene	0.0055	2.25E-03	2.57E-07
benzene	0.02636	1.08E-02	1.23E-06
ethylbenzene	0.01072	4.39E-03	5.01E-07
MEK	0.00019	7.78E-05	8.88E-09
naphthalene	0.00048	1.97E-04	2.24E-08
propylene	0.03127998	1.28E-02	1.46E-06
styrene	0.00126	5.16E-04	5.89E-08
toluene	0.05879998	2.41E-02	2.75E-06
m & p-xylene	0.03639998	1.49E-02	1.70E-06

[1] AADT from project traffic study, assume 49.5% of Bldgs 1, 2, 7, 9, & 10 traffic, 55% of Bldgs 3, 4, 5, 6, & 8 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

I-10 WB OnRamp from Sunset Ave.		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		4,834	172	152	784
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed 35 mph		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	3.44E-07	9.54E-07	2.40E-06	1.75E-05
	$PM_{2.5}$	3.29E-07	8.80E-07	2.29E-06	1.67E-05
	ROG	8.89E-05	6.42E-06	1.51E-06	9.08E-05

Total distance covered by I-10WB Sunset Ave. onramp sources
413 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
32	6.6E-07	5.3E-06	0.0462
32	6.3E-07	5.0E-06	0.0439
32	5.9E-06	4.7E-05	0.4081

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	4.62E-02	5.27E-06
PM2.5	--	4.39E-02	5.01E-06
1,3-butadiene	0.0055	2.24E-03	2.56E-07
benzene	0.02636	1.08E-02	1.23E-06
ethylbenzene	0.01072	4.37E-03	4.99E-07
MEK	0.00019	7.75E-05	8.85E-09
naphthalene	0.00048	1.96E-04	2.23E-08
propylene	0.03127998	1.28E-02	1.46E-06
styrene	0.00126	5.14E-04	5.87E-08
toluene	0.05879998	2.40E-02	2.74E-06
m & p-xylene	0.03639998	1.49E-02	1.69E-06

[1] AADT from project traffic study, assume 49.5% of Bldgs 1, 2, 7, 9, & 10 traffic, 55% of Bldgs 3, 4, 5, 6, & 8 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

I-10 WB OnRamp from Highland Springs Ave.		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		700	24	23	121
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
35 mph	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	2.87E-08	5.33E-08	1.99E-07	1.50E-06
	$PM_{2.5}$	2.74E-08	4.93E-08	1.89E-07	1.43E-06
	ROG	7.41E-06	5.13E-07	1.31E-07	8.05E-06

Total distance covered by I-10WB Highland Springs onramp sources
238 meters

Number of Sources	**Emission Rates per source**		
	g/s	**lb/hr**	**lb/yr**
15	1.2E-07	9.4E-07	0.0083
15	1.1E-07	9.0E-07	0.0079
15	1.1E-06	8.5E-06	0.0747

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	8.27E-03	9.44E-07
PM2.5	--	7.89E-03	9.00E-07
1,3-butadiene	0.0055	4.11E-04	4.69E-08
benzene	0.02636	1.97E-03	2.25E-07
ethylbenzene	0.01072	8.01E-04	9.13E-08
MEK	0.00019	1.42E-05	1.62E-09
naphthalene	0.00048	3.59E-05	4.09E-09
propylene	0.03127998	2.34E-03	2.67E-07
styrene	0.00126	9.41E-05	1.07E-08
toluene	0.05879998	4.39E-03	5.01E-07
m & p-xylene	0.03639998	2.72E-03	3.10E-07

[1] AADT from project traffic study, assume 10% of Bldgs 1, 2, 5, 7, 9, & 10 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Vehicle Exhaust Worksheet

Sunset Crossroads

I-10 EB OffRamp onto Highland Springs Ave.		AADT by Truck Category[1]			
		LDV[2]	**2-Axle[3]**	**3-Axle[4]**	**4+-Axle[5]**
		700	24	23	121
		% of Vehicles That Are Diesel-Powered[6]			
		0.2%	1%	89%	93%
Average Speed 35 mph		**Diesel Exhaust PM10 & PM2.5 Emissions at 35 mph (g/mi)7**			
	PM_{10}	0.0106	7.31E-03	5.03E-03	7.32E-03
	$PM_{2.5}$	0.0101	6.99E-03	4.81E-03	7.00E-03
		Diesel Exhaust PM10 & PM2.5 Emissions from TRUs (g/hr)			
	PM_{10}	N/A	1.97E-01	1.97E-01	1.97E-01
	$PM_{2.5}$	N/A	1.81E-01	1.81E-01	1.81E-01
		% of Vehicles That Are Gasoline-Powered[6]			
		100%	99%	11%	6.7%
		Gasoline Exhaust ROG Emissions at 35 mph (g/mi)7			
	ROG	0.006	1.28E-02	2.97E-02	5.80E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
	PM_{10}	3.05E-08	5.68E-08	2.11E-07	1.60E-06
	$PM_{2.5}$	2.92E-08	5.24E-08	2.01E-07	1.53E-06
	ROG	7.89E-06	5.47E-07	1.40E-07	8.57E-06

Total distance covered by I-10WB Highland Springs offramp sources
253 meters

	Number of Sources	**Emission Rates per source**		
		g/s	**lb/hr**	**lb/yr**
PM_{10}	20	9.5E-08	7.5E-07	0.0066
$PM_{2.5}$	20	9.1E-08	7.2E-07	0.0063
ROG	20	8.6E-07	6.8E-06	0.0596

[1] AADT from project traffic study, assume 10% of Bldgs 1, 2, 5, 7, 9, & 10 traffic use this route

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	6.61E-03	7.54E-07
PM2.5	--	6.30E-03	7.18E-07
1,3-butadiene	0.0055	3.28E-04	3.74E-08
benzene	0.02636	1.57E-03	1.79E-07
ethylbenzene	0.01072	6.39E-04	7.29E-08
MEK	0.00019	1.13E-05	1.29E-09
naphthalene	0.00048	2.86E-05	3.27E-09
propylene	0.03127998	1.87E-03	2.13E-07
styrene	0.00126	7.51E-05	8.57E-09
toluene	0.05879998	3.51E-03	4.00E-07
m & p-xylene	0.03639998	2.17E-03	2.48E-07

Gas Station Worksheet

Sunset Crossroads

Table X-1. Gasoline Emission Factors for Retail Service Stations Process

		Loading	Breathing	Refueling	Hose Permeation	Spillage
Controlled Gasoline EF (lbs/1,000 gal)		0.15	0.024	0.32	0.009	0.24
Benzene	**Weight Percent**	0.455%	0.455%	0.455%	0.455%	0.707%
	Emission Factor (lbs/1,000 gal)	6.83E-04	1.09E-04	1.46E-03	4.10E-05	1.70E-03
Ethylbenzene	**Weight Percent**	0.107%	0.107%	0.107%	0.107%	1.29%
	Emission Factor (lbs/1,000 gal)	1.61E-04	2.57E-05	3.42E-04	9.63E-06	3.10E-03
Naphthalene	**Weight Percent**	0.0004%	0.0004%	0.0004%	0.0004%	0.174%
	Emission Factor (lbs/1,000 gal)	6.00E-07	9.60E-08	1.28E-06	3.60E-08	4.18E-04

Source: SCAQMD RISK ASSESSMENT PROCEDURES for Rules 1401, 1401.1 and 212, Version 8.1, September 1, 2017

Note: *The weight percentages of the TACs evaluated for cancer risk are based on a weighted summer (214 days per year) and winter (151 days per year) gasoline speciation.

*Gasoline speciation profile: https://www.arb.ca.gov/ei/speciate/refspec.htm

Project expects:	250,000	gallons/month
Assume:	12	months/year
Assume:	24	hours/day

Number of auto pumps	10	(20 fueling positions)
Number of truck pumps	7	(6 fueling positions)

Underground Storage Tanks: Centrally positioned so only one pit has to be dug. Would allocate space for four 20K gallon tanks. Two would be for the auto canopy and two would be for the truck canopy. Assume for the autos the break down would be one 20K split tank (15K regular, 5K E85) and one 20K split tank (8K Diesel, 12K Premium). For the trucks, both tanks would be 20K split tanks (15K Diesel, 5K DEF).

Truck parking:	31	Dedicated stalls
Auto parking:	28	Stalls

Drive Thru: Stacking space for 10 cars from pick-up window. City code requires six car stacking from menu board.

Trash Enclosure: Space for two 8-yard containers.

				lb/yr	lb/hr
	UGTNKV	POINT	benzene	1.08E-02	1.23E-06
Underground Tank Vent	UGTNKV	POINT	Ethylbenzene	5.99E-04	6.84E-08
	UGTNKV	POINT	Naphthalene	8.35E-09	9.53E-13
	GSTNRF	VOLUME	benzene	1.99E-02	2.28E-06
Gas Station refueling	GSTNRF	VOLUME	Ethylbenzene	1.10E-03	1.25E-07
	GSTNRF	VOLUME	Naphthalene	1.54E-08	1.75E-12
	GSTNSP	VOLUME	benzene	3.66E-02	4.18E-06
Gas Station spillage	GSTNSP	VOLUME	Ethylbenzene	1.20E-01	1.37E-05
	GSTNSP	VOLUME	Naphthalene	2.18E-03	2.49E-07

EMFAC2021 VMT Data

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Fleet %
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Gasoline	471,235.7	90.8%
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Diesel	1,176.5	0.2%
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Electricity	30,348.9	5.8%
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Plug-in Hybrid	16,056.7	3.1%
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Gasoline	157,494.1	95.8%
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Diesel	2,354.8	1.4%
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Electricity	2,779.4	1.7%
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Plug-in Hybrid	1,757.4	1.1%
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Gasoline	1,187.0	7.6%
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Diesel	13,823.9	88.8%
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Electricity	371.8	2.4%
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Natural Gas	191.2	1.2%
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Gasoline	4.4	0.03%
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Diesel	16,021.1	93.3%
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Electricity	291.1	1.7%
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Natural Gas	859.7	5.0%

calendar year	season month	sub area	vehicle class	fuel	process	speed time	pollutant	emission rate
2027	Annual	Riverside (SC)	MHDT	Dsl	IDLEX		PM10	0.0383
2027	Annual	Riverside (SC)	MHDT	Dsl	IDLEX		PM2_5	0.0367
2027	Annual	Riverside (SC)	HHDT	Dsl	IDLEX		PM10	0.0122
2027	Annual	Riverside (SC)	HHDT	Dsl	IDLEX		PM2_5	0.0116
2027	Annual	Riverside (SC)	LDA	Dsl	RUNEX	5	PM10	0.0363
2027	Annual	Riverside (SC)	LDA	Dsl	RUNEX	5	PM2_5	0.0348
2027	Annual	Riverside (SC)	LDA	Gas	RUNEX	5	ROG	0.0439
2027	Annual	Riverside (SC)	MDV	Dsl	RUNEX	5	PM10	0.0237
2027	Annual	Riverside (SC)	MDV	Dsl	RUNEX	5	PM2_5	0.0227
2027	Annual	Riverside (SC)	MDV	Gas	RUNEX	5	ROG	0.0881
2027	Annual	Riverside (SC)	MHDT	Dsl	RUNEX	5	PM10	0.0237
2027	Annual	Riverside (SC)	MHDT	Dsl	RUNEX	5	PM2_5	0.0226
2027	Annual	Riverside (SC)	MHDT	Gas	RUNEX	5	ROG	0.2110
2027	Annual	Riverside (SC)	HHDT	Dsl	RUNEX	5	PM10	0.0121
2027	Annual	Riverside (SC)	HHDT	Dsl	RUNEX	5	PM2_5	0.0116
2027	Annual	Riverside (SC)	HHDT	Gas	RUNEX	5	ROG	4.0750
2027	Annual	Riverside (SC)	LDA	Dsl	RUNEX	35	PM10	0.0106
2027	Annual	Riverside (SC)	LDA	Dsl	RUNEX	35	PM2_5	0.0101
2027	Annual	Riverside (SC)	LDA	Gas	RUNEX	35	ROG	0.0062
2027	Annual	Riverside (SC)	MDV	Dsl	RUNEX	35	PM10	0.0073
2027	Annual	Riverside (SC)	MDV	Dsl	RUNEX	35	PM2_5	0.0070
2027	Annual	Riverside (SC)	MDV	Gas	RUNEX	35	ROG	0.0128
2027	Annual	Riverside (SC)	MHDT	Dsl	RUNEX	35	PM10	0.0050
2027	Annual	Riverside (SC)	MHDT	Dsl	RUNEX	35	PM2_5	0.0048
2027	Annual	Riverside (SC)	MHDT	Gas	RUNEX	35	ROG	0.0297
2027	Annual	Riverside (SC)	HHDT	Dsl	RUNEX	35	PM10	0.0073
2027	Annual	Riverside (SC)	HHDT	Dsl	RUNEX	35	PM2_5	0.0070
2027	Annual	Riverside (SC)	HHDT	Gas	RUNEX	35	ROG	0.5800

OFFROAD2021 TRU Data

Model Output: OFFROAD2021 (v1.0.5) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2027
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types

Region	Calendar Year	Vehicle Category	Model Year	Horsepower	Fuel	Population	Emissions (gm/hr) PM10	PM2.5
Riverside (SC)	2027	Transport Refrigeration Unit - Instate Trailer	Aggregate	25	Diesel	826	0.20	0.18