MEMORANDUM

URBAN | CROSSROADS

DATE: February 8, 2023
TO: Derek Hicks, Discover Village LLC
FROM: Haseeb Qureshi
Ali Dadabhoy
JOB NO: 14073-10 AQ, GHG & EA Memo

DISCOVERY VILLAGE SUPPLEMENTAL AIR QUALITY, GREENHOUSE GAS AND ENERGY ASSESSMENT

Derek Hicks,

Urban Crossroads, Inc. is pleased to provide the following Supplemental Air Quality, Greenhouse Gas and Energy Assessment for the Discovery Village (**Project**). The purpose of this supplemental assessment is evaluate the Air Quality, Greenhouse Gases and Energy impacts associated with light manufacturing and commercial uses for the Innovation component of the Project, which can be compared to those evaluated in in the Air Quality Impact Analysis (dated January 27, 2023), Discovery Village Greenhouse Gas Analysis (dated January 27, 2023) and Discovery Village Energy Analysis (dated January 27, 2023) prepared by Urban Crossroads, Inc., hereafter referred to as the "previous technical studies," which evaluated business park uses and commercial uses for the Innovation component. The residential component of the Project would remain the same under both Innovation development scenarios.

Because development of the light manufacturing uses in the Innovation area would involve the same physical impact area, and similar size buildings and amenities as development of business park uses, construction air quality, greenhouse gas, and energy impacts would also be similar.

PROJECT OVERVIEW

The 2022 Studies evaluated the Discovery Village Project, which comprises a large lot Tentative Tract Map and development of 267,000 square feet (sf) of business park uses, and 5,000 sf of commercial uses on Lot 1 through Lot 3 (18.8 gross acres/16.53 net acres), consistent with the "Innovation" land use designation ("Innovation Zone"); and 199 multifamily (low-rise) housing units (condo) and 237 single family detached residential dwelling units for a total of 436 residential dwelling units on Lot 4 through Lot 8 (24.25 net acres), consistent with the existing zoning (MF-2, Multi-Family Residential). It is anticipated that the Project would be developed in a single phase with an anticipated Opening Year of 2027. For the purposes of this work effort, instead of the 267,000 square feet (sf) of business

park uses, the Innovation Zone also has been evaluated with 267,000 square feet of light manufacturing use, which is also consistent with the Innovation Zone. The residential uses on Lots 4 through 8 and the 5,000 square feet of commercial uses in the Innovation Zone are unchanged in this analysis. The Innovation development scenario with manufacturing, commercial and residential uses evaluated in this study is referred to herein as the "Project."

AIR QUALITY EMISSIONS

Operational activities associated with the Project would result in emissions of CO, VOCs, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. Operational related emissions are expected from the following primary sources: area source emissions, energy source emissions, mobile source emissions, and on-site equipment emissions.

AREA SOURCE EMISSIONS

Over a period of time, the buildings that are part of this Project will be subject to emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings as part of Project maintenance. The emissions associated with architectural coatings were calculated using CalEEMod.

ENERGY SOURCE EMISSIONS

Electricity and natural gas are used by almost every project. Criteria pollutant emissions are emitted through the generation of electricity and consumption of natural gas. However, because electrical generating facilities for the Project area are located either outside the region (state) or offset through the Regional Clean Air Incentives Market (RECLAIM), which provides pollution credits for generation within the SCAB, criteria pollutant emissions from offsite generation of electricity is generally excluded from the evaluation of significance and only natural gas use is considered. The emissions associated with natural gas use were calculated using CalEEMod.

MOBILE SOURCE EMISSIONS

Project mobile source air quality emissions are primarily dependent on overall daily vehicle trip generation. The Project related operational air quality impacts derive primarily from vehicle trips generated by the Project. Trip characteristics available from the *Discovery Village Trip Generation & VMT Letter* were utilized in this analysis (1). Per the *Discovery Village Trip Generation & VMT Letter*, the proposed Project is expected to generate approximately 5,056 trips per day (4,932 passenger car trips per day and 124 truck trips per day).

To determine emissions from trucks for the proposed light manufacturing use, the analysis incorporated the SCAQMD recommended truck trip length 15.3 miles for 2-axle (LHDT1, LHDT2) trucks, 14.2 miles 3-axle (MHDT) trucks and 39.9 miles for 4+-axle (HHDT) trucks and weighting the average trip lengths using traffic trip percentages taken from the *Discovery Village Trip Generation & VMT Letter* (2). The trip length function for Medium-Heavy and Heavy-Heavy trucks in CalEEMod has been revised to 30.15 miles, with an assumption of 100% primary trips for the proposed light manufacturing land uses. It should be noted that the vehicle mix, and trip lengths

utilized in this analysis to calculate emissions from the commercial and residential components of the Project are consistent with the previously completed technical reports.

ON-SITE CARGO HANDLING EQUIPMENT EMISSIONS

Additionally, it is common for light manufacturing buildings to require the operation of exterior cargo handling equipment in the building's truck court areas. For this particular Project, on-site modeled operational equipment includes up to one (1) 175 horsepower (hp), natural gas-powered cargo handling equipment – port tractors operating at 4 hours a day[1] for 365 days of the year.

REGIONAL OPERATIONAL EMISSIONS

The estimated operation-source emissions from the proposed light manufacturing, commercial and residential uses are summarized on Table 1. It should be noted that the assumptions and inputs associated with the commercial and residential components remain consistent with the previous technical studies. Detailed operation model outputs are presented in Attachment A.

As shown on Table 1, the Project with light manufacturing, commercial and residential uses operational-source emissions would not exceed the applicable SCAQMD regional thresholds for emissions of any criteria pollutant.

TABLE 1: SUMMARY OF PEAK OPERATIONAL EMISSIONS WITH DEVELOPMENT OF LIGHT MANUFACTURING, COMMERIAL AND RESIDENTIAL USES

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
Mobile Source	19.00	24.00	161.00	0.48	15.70	3.16
Area Source	26.30	6.85	39.40	0.04	0.55	0.56
Energy Source	0.36	6.26	3.95	0.04	0.49	0.49
On-site Equipment	0.12	0.38	16.44	0.00	0.03	0.03
Total Maximum Daily Emissions	**45.78**	**37.49**	**220.79**	**0.56**	**16.77**	**4.24**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Winter						
Mobile Source	17.80	25.60	136.00	0.45	15.70	3.16
Area Source	22.20	6.51	2.77	0.04	0.53	0.53
Energy Source	0.36	6.26	3.95	0.04	0.49	0.49

[1] Based on Table II-3, Port and Rail Cargo Handling Equipment Demographics by Type, from CARB's Technology Assessment: Mobile Cargo Handling Equipment document, a single piece of equipment could operate up to 2 hours per day (Total Average Annual Activity divided by Total Number Pieces of Equipment). As such, the analysis conservatively assumes that the tractor/loader/backhoe would operate up to 4 hours per day.

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
On-site Equipment	0.12	0.38	16.44	0.00	0.03	0.03
Total Maximum Daily Emissions	**40.48**	**38.75**	**159.16**	**0.53**	**16.75**	**4.21**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

TOXIC AIR CONTAMINANTS

A Health Risk Assessment (HRA) evaluating the Project's potential impacts from diesel particulate matter (DPM) during short-term construction and long-term operations has been prepared and is provided in separate technical memorandum (3).

ODOR IMPACTS

The Project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed Project's (long-term operational) uses. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less than significant. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the solid waste regulations. The proposed Project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed Project construction and operations would be less than significant and no mitigation is required (4).

PROJECT GREENHOUSE GAS ANALYSIS

Greenhouse gas emissions resulting from operation of the Innovation component of the Project with light manufacturing uses as well as the proposed commercial and residential uses was also modeled. It should be noted that the assumptions and inputs associated with the commercial and residential components remain consistent with the previous technical studies. Detailed operation model outputs are presented in Attachment A.

Table 2 below presents the operational GHG emissions from the alternative light manufacturing use and as shown, the Project would result in 9,940.18 MTCO2e/yr. Additionally, the Project even with the light manufacturing use would remain consistent with the City's CAP and a less than significant impact is expected.

TABLE 2: TOTAL ANNUAL PROJECT GHG EMISSIONS WITH DEVELOPMENT OF LIGHT MANUFACTURING, COMMERCIAL AND RESIDENTIAL USES

Source	Emissions (MT/yr)				
	CO_2	CH_4	N_20	R	Total CO_2E
Annual construction-related emissions amortized over 30 years	165.81	0.01	0.01	0.14	168.96
Mobile Source	6,852.00	0.26	0.44	9.36	6,999.00
Area Source	107.00	< 0.005	< 0.005	0.00	107.00
Energy Source	2,273.00	0.21	0.01	0.00	2,282.00
Water	72.20	1.24	0.03	0.00	112.00
Waste	62.50	6.25	0.00	0.00	219.00
Refrigerants	0.00	0.00	0.00	4.85	4.85
On-site Equipment	0.00	0.00	0.00	0.00	47.37
Total CO_2E (All Sources)	**9,940.18**				

PROJECT ENERGY ANALYSIS

TRANSPORTATION ENERGY DEMANDS

The Project transportation energy demands with light manufacturing uses as well as the proposed commercial and residential uses was also modeled. The assumptions and inputs associated with the commercial and residential components remain consistent with the previous technical studies and as summarized on Table 3, the Project with the alternative light manufacturing use will result in a 17,409,828 annual VMT and an estimated annual fuel consumption of 760,541 gallons of fuel.

TABLE 3: PROJECT-GENERATED VEHICLE TRAFFIC ANNUAL FUEL CONSUMPTION WITH DEVELOPMENT OF LIGHT MANUFACTURING, COMMERCIAL AND RESIDENTIAL USES

Vehicle Type	Average Vehicle Fuel Economy (mpg)	Annual VMT	Estimated Annual Fuel Consumption (gallons)
LDA	34.29	8,284,701	241,634
LDT1	26.22	618,168	23,578
LDT2	26.63	3,485,057	130,882
MDV	21.39	2,624,979	122,721
LHDT1	17.30	516,157	29,834
LHDT2	16.30	147,499	9,050
MHDT	8.87	402,545	45,363
HHDT	6.45	854,233	132,422
OBUS	6.88	7,051	1,025
UBUS	4.56	4,563	1,002
MCY	42.17	381,210	9,041
SBUS	6.46	15,876	2,458
MH	5.88	67,788	11,532
	TOTAL (ALL VEHICLES)	***17,409,828***	***760,541***

PROJECT ENERGY DEMANDS

As shown on Table 4, the Project with the development of light manufacturing uses would have estimated operational energy demands of 24,075,375 kBTU/year of natural gas; and 6,339,855 kWh/year of electricity.

TABLE 4: PROJECT ANNUAL OPERATIONAL ENERGY DEMAND SUMMARY WITH DEVELOPMENT OF LIGHT MANUFACTURING, COMMERCIAL AND RESIDENTIAL USES

Land Use	Natural Gas Demand (kBTU/year)	Electricity Demand (kWh/year)
Manufacturing	11,467,737	2,554,942
Regional Shopping Center	29,611	48,792
Parking Lot	0	64,221
Condo/Townhouse	4,149,285	1,458,499
Single Family Housing	8,428,742	2,213,401
TOTAL PROJECT ENERGY DEMAND	***24,075,375***	***6,339,855***

AIR QUALITY, GREENHOUSE GAS & ENERGY CONCLUSION

Results of this supplemental assessment indicate that development of the Discovery Village Project with light manufacturing uses for the Innovation component of the Project along with proposed commercial and residential uses, is not anticipated to result in a significant impact during operational activities with air quality, greenhouse gas and energy and no mitigation is required.

ATTACHMENT A
CALEEMOD MANUFACTURING OPERATIONAL EMISSIONS

14073-Discovery Village (Operational Alternatives) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14073-Discovery Village (Operational Alternatives)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.6110499614919, -117.16773396878716
County	Riverside-South Coast
City	Murrieta
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5545
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Manufacturing	267	1000sqft	13.1	267,000	0.00	—	—	—
Regional Shopping Center	5.00	1000sqft	3.47	5,000	0.00	—	—	—
Parking Lot	187	Space	1.68	0.00	0.00	—	—	—

Condo/Townhouse	199	Dwelling Unit	12.4	210,940	0.00	—	643	—
Single Family Housing	237	Dwelling Unit	16.1	462,150	2,775,947	—	766	—
Other Asphalt Surfaces	9.06	Acre	9.06	0.00	0.00	—	—	—
User Defined Industrial	267	User Defined Unit	0.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	26.6	45.6	37.2	204	0.56	1.45	15.3	16.8	1.44	2.77	4.21	450	71,775	72,225	48.3	3.34	178	74,605
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	21.0	40.4	38.3	143	0.53	1.43	15.3	16.7	1.41	2.77	4.18	450	69,133	69,583	48.4	3.39	33.1	71,835
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	21.4	41.0	29.4	156	0.44	0.90	13.6	14.5	0.89	2.45	3.34	450	56,121	56,571	48.1	2.94	85.8	58,735
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.90	7.49	5.37	28.4	0.08	0.16	2.48	2.64	0.16	0.45	0.61	74.5	9,291	9,366	7.96	0.49	14.2	9,724

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	20.7	19.0	24.0	161	0.48	0.41	15.3	15.7	0.39	2.77	3.16	—	49,305	49,305	1.69	3.05	148	50,403
Area	5.16	26.3	6.85	39.4	0.04	0.55	—	0.55	0.56	—	0.56	0.00	8,377	8,377	0.16	0.03	—	8,389
Energy	0.71	0.36	6.26	3.95	0.04	0.49	—	0.49	0.49	—	0.49	—	13,729	13,729	1.26	0.08	—	13,785
Water	—	—	—	—	—	—	—	—	—	—	—	72.5	364	436	7.47	0.18	—	677
Waste	—	—	—	—	—	—	—	—	—	—	—	378	0.00	378	37.7	0.00	—	1,321
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.3	29.3
Total	26.6	45.6	37.2	204	0.56	1.45	15.3	16.8	1.44	2.77	4.21	450	71,775	72,225	48.3	3.34	178	74,605
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	19.6	17.8	25.6	136	0.45	0.41	15.3	15.7	0.39	2.77	3.16	—	46,778	46,778	1.75	3.11	3.85	47,751
Area	0.76	22.2	6.51	2.77	0.04	0.53	—	0.53	0.53	—	0.53	0.00	8,262	8,262	0.16	0.02	—	8,271
Energy	0.71	0.36	6.26	3.95	0.04	0.49	—	0.49	0.49	—	0.49	—	13,729	13,729	1.26	0.08	—	13,785
Water	—	—	—	—	—	—	—	—	—	—	—	72.5	364	436	7.47	0.18	—	677
Waste	—	—	—	—	—	—	—	—	—	—	—	378	0.00	378	37.7	0.00	—	1,321
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.3	29.3
Total	21.0	40.4	38.3	143	0.53	1.43	15.3	16.7	1.41	2.77	4.18	450	69,133	69,583	48.4	3.39	33.1	71,835
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	17.6	16.0	22.5	126	0.40	0.36	13.6	13.9	0.34	2.45	2.79	—	41,384	41,384	1.58	2.67	56.5	42,275
Area	3.06	24.6	0.68	25.2	< 0.005	0.05	—	0.05	0.06	—	0.06	0.00	645	645	0.01	0.01	—	647
Energy	0.71	0.36	6.26	3.95	0.04	0.49	—	0.49	0.49	—	0.49	—	13,729	13,729	1.26	0.08	—	13,785
Water	—	—	—	—	—	—	—	—	—	—	—	72.5	364	436	7.47	0.18	—	677

Waste	—	—	—	—	—	—	—	—	—	—	—	378	0.00	378	37.7	0.00	—	1,321
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.3	29.3
Total	21.4	41.0	29.4	156	0.44	0.90	13.6	14.5	0.89	2.45	3.34	450	56,121	56,571	48.1	2.94	85.8	58,735
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.21	2.93	4.11	23.1	0.07	0.06	2.48	2.54	0.06	0.45	0.51	—	6,852	6,852	0.26	0.44	9.36	6,999
Area	0.56	4.50	0.12	4.61	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	107	107	< 0.005	< 0.005	—	107
Energy	0.13	0.06	1.14	0.72	0.01	0.09	—	0.09	0.09	—	0.09	—	2,273	2,273	0.21	0.01	—	2,282
Water	—	—	—	—	—	—	—	—	—	—	—	12.0	60.2	72.2	1.24	0.03	—	112
Waste	—	—	—	—	—	—	—	—	—	—	—	62.5	0.00	62.5	6.25	0.00	—	219
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.85	4.85
Total	3.90	7.49	5.37	28.4	0.08	0.16	2.48	2.64	0.16	0.45	0.61	74.5	9,291	9,366	7.96	0.49	14.2	9,724

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	4.60	4.22	2.28	48.0	0.11	0.04	4.09	4.13	0.04	0.70	0.74	—	10,848	10,848	0.36	0.25	32.2	10,964
Regional Shopping Center	1.03	0.97	0.66	5.98	0.01	0.01	0.49	0.50	0.01	0.09	0.10	—	1,446	1,446	0.07	0.07	4.50	1,473
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Condo/T	5.47	5.06	4.19	38.9	0.10	0.07	3.40	3.47	0.07	0.60	0.67	—	10,029	10,029	0.41	0.45	31.6	10,204
Single Family Housing	9.16	8.48	7.02	65.2	0.16	0.12	5.69	5.81	0.11	1.01	1.12	—	16,799	16,799	0.68	0.75	52.9	17,094
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.42	0.23	9.90	2.81	0.10	0.17	1.64	1.81	0.16	0.38	0.54	—	10,182	10,182	0.17	1.52	27.1	10,668
Total	20.7	19.0	24.0	161	0.48	0.41	15.3	15.7	0.39	2.77	3.16	—	49,305	49,305	1.69	3.05	148	50,403
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	4.42	4.03	2.52	39.5	0.10	0.04	4.09	4.13	0.04	0.70	0.74	—	10,021	10,021	0.38	0.27	0.84	10,111
Regional Shopping Center	0.97	0.91	0.71	5.22	0.01	0.01	0.49	0.50	0.01	0.09	0.10	—	1,360	1,360	0.07	0.07	0.12	1,383
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Condo/Townhouse	5.15	4.74	4.49	33.1	0.09	0.07	3.40	3.47	0.07	0.60	0.67	—	9,424	9,424	0.43	0.46	0.82	9,574
Single Family Housing	8.62	7.94	7.52	55.5	0.15	0.12	5.69	5.81	0.11	1.01	1.12	—	15,787	15,787	0.71	0.78	1.37	16,038
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.41	0.22	10.3	2.83	0.10	0.17	1.64	1.81	0.16	0.38	0.54	—	10,185	10,185	0.17	1.52	0.70	10,645
Total	19.6	17.8	25.6	136	0.45	0.41	15.3	15.7	0.39	2.77	3.16	—	46,778	46,778	1.75	3.11	3.85	47,751
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Manufact	0.63	0.58	0.37	5.92	0.01	0.01	0.59	0.59	0.01	0.10	0.11	—	1,324	1,324	0.05	0.04	1.82	1,338
Regional Shopping Center	0.16	0.15	0.12	0.88	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.02	—	202	202	0.01	0.01	0.29	206
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Condo/Townhouse	0.83	0.76	0.74	5.58	0.02	0.01	0.55	0.57	0.01	0.10	0.11	—	1,406	1,406	0.06	0.07	2.01	1,430
Single Family Housing	1.53	1.41	1.37	10.3	0.03	0.02	1.02	1.04	0.02	0.18	0.20	—	2,590	2,590	0.12	0.13	3.71	2,635
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.06	0.03	1.50	0.40	0.01	0.02	0.24	0.26	0.02	0.05	0.08	—	1,329	1,329	0.02	0.20	1.53	1,391
Total	3.21	2.93	4.11	23.1	0.07	0.06	2.48	2.54	0.06	0.45	0.51	—	6,852	6,852	0.26	0.44	9.36	6,999

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	2,423	2,423	0.23	0.03	—	2,437
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	46.3	46.3	< 0.005	< 0.005	—	46.5

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	60.9	60.9	0.01	< 0.005	—	61.3
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	1,383	1,383	0.13	0.02	—	1,391
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,099	2,099	0.20	0.02	—	2,112
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	6,013	6,013	0.57	0.07	—	6,048
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	2,423	2,423	0.23	0.03	—	2,437
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	46.3	46.3	< 0.005	< 0.005	—	46.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	60.9	60.9	0.01	< 0.005	—	61.3
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	1,383	1,383	0.13	0.02	—	1,391
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,099	2,099	0.20	0.02	—	2,112
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	6,013	6,013	0.57	0.07	—	6,048
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	401	401	0.04	< 0.005	—	404
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	7.66	7.66	< 0.005	< 0.005	—	7.71
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	10.1	10.1	< 0.005	< 0.005	—	10.1
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	229	229	0.02	< 0.005	—	230
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	348	348	0.03	< 0.005	—	350
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	996	996	0.09	0.01	—	1,001

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Manufacturing	0.34	0.17	3.08	2.59	0.02	0.23	—	0.23	0.23	—	0.23	—	3,675	3,675	0.33	0.01	—	3,685
Regional Shopping Center	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.49	9.49	< 0.005	< 0.005	—	9.52
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	0.12	0.06	1.05	0.45	0.01	0.08	—	0.08	0.08	—	0.08	—	1,330	1,330	0.12	< 0.005	—	1,333
Single Family Housing	0.25	0.12	2.13	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,701	2,701	0.24	0.01	—	2,709
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.71	0.36	6.26	3.95	0.04	0.49	—	0.49	0.49	—	0.49	—	7,716	7,716	0.68	0.01	—	7,737
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.34	0.17	3.08	2.59	0.02	0.23	—	0.23	0.23	—	0.23	—	3,675	3,675	0.33	0.01	—	3,685
Regional Shopping Center	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.49	9.49	< 0.005	< 0.005	—	9.52
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	0.12	0.06	1.05	0.45	0.01	0.08	—	0.08	0.08	—	0.08	—	1,330	1,330	0.12	< 0.005	—	1,333
Single Family Housing	0.25	0.12	2.13	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,701	2,701	0.24	0.01	—	2,709

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.71	0.36	6.26	3.95	0.04	0.49	—	0.49	0.49	—	0.49	—	7,716	7,716	0.68	0.01	—	7,737
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.06	0.03	0.56	0.47	< 0.005	0.04	—	0.04	0.04	—	0.04	—	608	608	0.05	< 0.005	—	610
Regional Shopping Center	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.57	1.57	< 0.005	< 0.005	—	1.58
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	0.02	0.01	0.19	0.08	< 0.005	0.02	—	0.02	0.02	—	0.02	—	220	220	0.02	< 0.005	—	221
Single Family Housing	0.05	0.02	0.39	0.17	< 0.005	0.03	—	0.03	0.03	—	0.03	—	447	447	0.04	< 0.005	—	448
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.13	0.06	1.14	0.72	0.01	0.09	—	0.09	0.09	—	0.09	—	1,277	1,277	0.11	< 0.005	—	1,281

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.76	0.38	6.51	2.77	0.04	0.53	—	0.53	0.53	—	0.53	0.00	8,262	8,262	0.16	0.02	—	8,271
Consumer Products	—	20.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	4.40	4.11	0.34	36.6	< 0.005	0.02	—	0.02	0.03	—	0.03	—	115	115	< 0.005	0.01	—	118
Total	5.16	26.3	6.85	39.4	0.04	0.55	—	0.55	0.56	—	0.56	0.00	8,377	8,377	0.16	0.03	—	8,389
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.76	0.38	6.51	2.77	0.04	0.53	—	0.53	0.53	—	0.53	0.00	8,262	8,262	0.16	0.02	—	8,271
Consumer Products	—	20.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.76	22.2	6.51	2.77	0.04	0.53	—	0.53	0.53	—	0.53	0.00	8,262	8,262	0.16	0.02	—	8,271
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	93.7	93.7	< 0.005	< 0.005	—	93.8
Consumer Products	—	3.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.55	0.51	0.04	4.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.0	13.0	< 0.005	< 0.005	—	13.4
Total	0.56	4.50	0.12	4.61	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	107	107	< 0.005	< 0.005	—	107

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	17.9	89.3	107	1.85	0.04	—	167
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	54.6	274	329	5.62	0.14	—	510
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	72.5	364	436	7.47	0.18	—	677
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	17.9	89.3	107	1.85	0.04	—	167
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	54.6	274	329	5.62	0.14	—	510
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	72.5	364	436	7.47	0.18	—	677
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	2.97	14.8	17.8	0.31	0.01	—	27.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Condo/T	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.04	45.4	54.4	0.93	0.02	—	84.4
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	12.0	60.2	72.2	1.24	0.03	—	112

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	178	0.00	178	17.8	0.00	—	624
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	2.83	0.00	2.83	0.28	0.00	—	9.90
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	79.3	0.00	79.3	7.93	0.00	—	278
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	117	0.00	117	11.7	0.00	—	409

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	378	0.00	378	37.7	0.00	—	1,321
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	178	0.00	178	17.8	0.00	—	624
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	2.83	0.00	2.83	0.28	0.00	—	9.90
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	79.3	0.00	79.3	7.93	0.00	—	278
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	117	0.00	117	11.7	0.00	—	409
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	378	0.00	378	37.7	0.00	—	1,321
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103

Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	0.47	0.00	0.47	0.05	0.00	—	1.64
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	13.1	0.00	13.1	1.31	0.00	—	46.0
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	19.4	0.00	19.4	1.94	0.00	—	67.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	62.5	0.00	62.5	6.25	0.00	—	219

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.0	25.0
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02

Condo/Townhous	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.35	1.35
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.96	2.96
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.3	29.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.0	25.0
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.35	1.35
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.96	2.96
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.3	29.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.13	4.13
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.49	0.49
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.85	4.85

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Manufacturing	1,150	359	239	330,992	15,387	4,805	3,194	4,428,805
Regional Shopping Center	272	231	106	88,505	1,747	1,480	677	568,074
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Condo/Townhouse	1,341	905	768	436,951	12,242	8,264	7,011	3,988,233
Single Family Housing	2,237	2,247	2,010	805,238	20,421	20,507	18,344	7,349,734
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	124	38.7	25.6	35,655	3,735	1,167	773	1,074,986

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	179
Propane Fireplaces	0
Electric Fireplaces	0

No Fireplaces	20
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	213
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	24

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
1363007.25	454,336	408,000	136,000	28,078

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Manufacturing	2,554,942	346	0.0330	0.0040	11,467,737
Regional Shopping Center	48,792	346	0.0330	0.0040	29,611
Parking Lot	64,221	346	0.0330	0.0040	0.00
Condo/Townhouse	1,458,499	346	0.0330	0.0040	4,149,285

Single Family Housing	2,213,401	346	0.0330	0.0040	8,428,742
Other Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00
User Defined Industrial	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Manufacturing	0.00	0.00
Regional Shopping Center	9,359,768	5,736,632
Parking Lot	0.00	0.00
Condo/Townhouse	0.00	0.00
Single Family Housing	28,481,212	17,955,547
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Manufacturing	331	0.00
Regional Shopping Center	5.25	0.00
Parking Lot	0.00	0.00
Condo/Townhouse	45.6	0.00
Single Family Housing	67.2	0.00
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Manufacturing	Other commercial A/C and heat pumps	User Defined	750	0.30	4.00	4.00	18.0
Regional Shopping Center	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0
Regional Shopping Center	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	User Defined	750	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	User Defined	750	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	28.6	annual days of extreme heat
Extreme Precipitation	3.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	16.5	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	80.0

AQ-PM	40.4
AQ-DPM	31.3
Drinking Water	11.0
Lead Risk Housing	4.06
Pesticides	13.6
Toxic Releases	14.3
Traffic	81.3
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	73.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	31.6
Cardio-vascular	76.0
Low Birth Weights	56.6
Socioeconomic Factor Indicators	—
Education	40.1
Housing	12.8
Linguistic	8.49
Poverty	34.9
Unemployment	48.3

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract

Economic	—
Above Poverty	70.31951752
Employed	39.30450404
Median HI	80.88027717
Education	—
Bachelor's or higher	58.29590658
High school enrollment	100
Preschool enrollment	64.72475298
Transportation	—
Auto Access	89.83703323
Active commuting	12.60105223
Social	—
2-parent households	73.95098165
Voting	49.22366226
Neighborhood	—
Alcohol availability	89.3750802
Park access	2.194276915
Retail density	10.31695111
Supermarket access	18.61927371
Tree canopy	4.38855383
Housing	—
Homeownership	67.93276017
Housing habitability	86.16707301
Low-inc homeowner severe housing cost burden	69.34428333
Low-inc renter severe housing cost burden	80.27717182
Uncrowded housing	68.66418581
Health Outcomes	—

Insured adults	89.59322469
Arthritis	10.7
Asthma ER Admissions	78.7
High Blood Pressure	18.2
Cancer (excluding skin)	10.4
Asthma	46.1
Coronary Heart Disease	23.5
Chronic Obstructive Pulmonary Disease	33.2
Diagnosed Diabetes	68.9
Life Expectancy at Birth	83.5
Cognitively Disabled	29.3
Physically Disabled	73.0
Heart Attack ER Admissions	38.4
Mental Health Not Good	64.8
Chronic Kidney Disease	45.1
Obesity	48.4
Pedestrian Injuries	39.7
Physical Health Not Good	61.7
Stroke	51.7
Health Risk Behaviors	—
Binge Drinking	19.3
Current Smoker	59.6
No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	18.1
SLR Inundation Area	0.0
Children	5.7

Elderly	87.4
English Speaking	95.5
Foreign-born	16.2
Outdoor Workers	58.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	74.9
Traffic Density	62.3
Traffic Access	23.0
Other Indices	—
Hardship	29.8
Other Decision Support	—
2016 Voting	55.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	30.0
Healthy Places Index Score for Project Location (b)	67.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Taken form Site Plan
Operations: Vehicle Data	Trip Characteristics based on information provided in the Traffic Analysis
Operations: Fleet Mix	Passenger Car Mix estimated based on CalEEMod default fleet mix and the ratio of the vehicle classes (LDA, LDT1, LDT2, MDV, MCY). Truck Fleet Mix based on 2, 3 and 4 axle trucks
Operations: Hearths	SCAQMD Rule 445 no wood burning devices, Wood burning fireplaces added to gas fireplaces
Operations: Architectural Coatings	SCAQMD Rule 1113
Operations: Water and Waste Water	water use is based on Water Study Report Report, water assigned based on residential and non-residential total water demand.
Operations: Refrigerants	Beginning 1 January 2025, all new air conditioning equipment may not use refrigerants with a GWP of 750 or greater