MEMORANDUM

URBAN CROSSROADS

DATE: February 28, 2023
TO: Tracy Zinn, T&B Planning, Inc.
FROM: Haseeb Qureshi, Urban Crossroads, Inc.
JOB NO: 15283-02 AQ & GHG

ALDER AND MERRILL AIR QUALITY AND GREENHOUSE GAS EVALUATION

Urban Crossroads, Inc. is pleased to provide the following Air Quality and Greenhouse Gas Evaluation for the Alder and Merrill (**Project**), which is located north of Merrill Avenue, between Alder Avenue and Laurel Avenue in the City of Fontana.

PROJECT OVERVIEW

The Project consists of a proposed General Plan Amendment (**GPA**) and a Zone Change (**ZC**) for a 6.4-acre property that is located in the City of Fontana north of Merrill Avenue, between Alder Avenue and Laurel Avenue, and south of Citron Avenue. The GPA would change the General Plan land use designation of the Project site from Single Family Residential (**R-SF**) to Multifamily Medium High-Density Residential (**R-MFMH**) and the zoning of the Project site from Single Family Residential (**R-1**) to Multifamily Medium/High Density Residential (**R-4**). The existing General Plan land use and zoning are shown on Exhibit 1 and the proposed GPA and ZC are shown on Exhibit 2. The increased unit count allowance would increase from a maximum of 32 residential units (6.4 acres x 5.0 units/acre = 32 units) to 249 residential units (6.4 acres x 39 units/acre = 249 units), for a net increase of 217 units assuming maximum development potential under the existing and proposed designations. No development project is currently proposed, and no physical disturbance of the Project site is currently proposed. Only the proposed change to the underlying land use has been evaluated as part of this assessment.

EXHIBIT 1: EXISTING GENERAL PLAN LAND USE AND ZONING

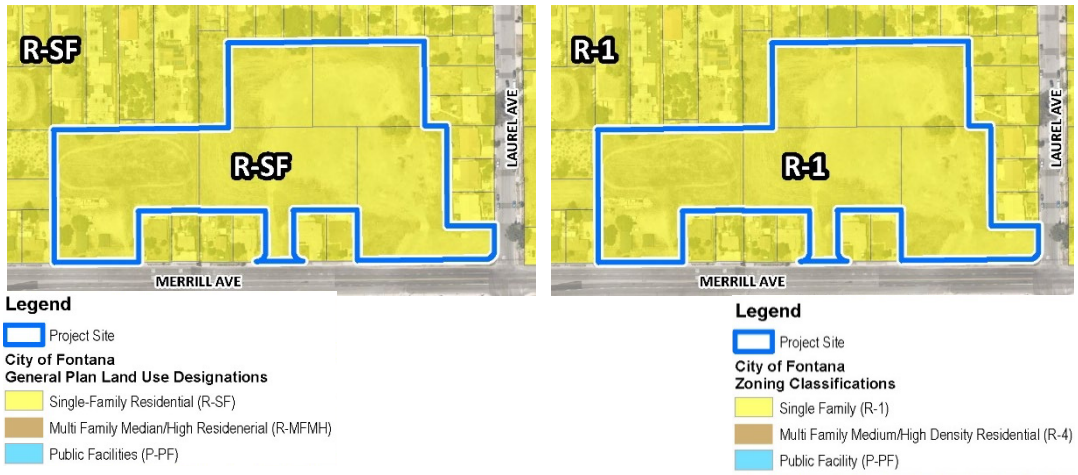
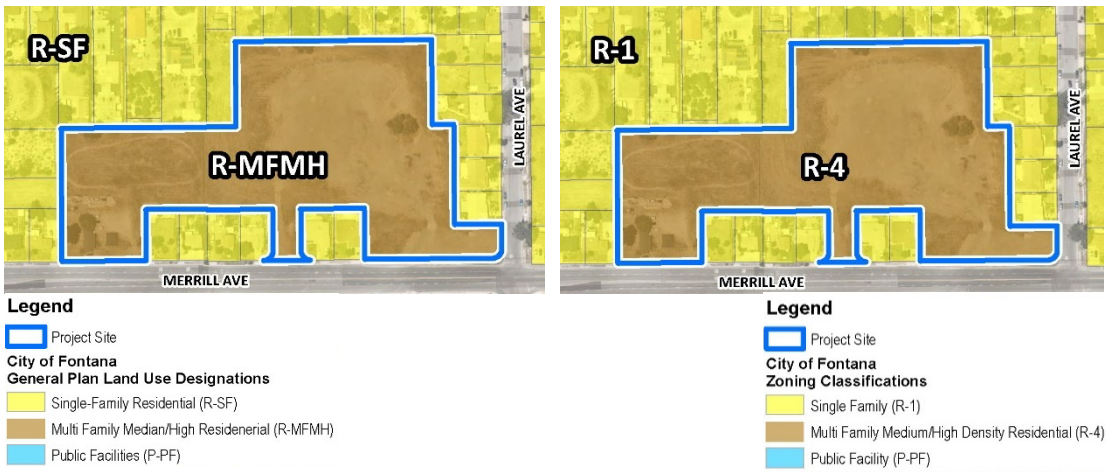


EXHIBIT 2: PROPOSED CHANGE OF ZONE



AIR QUALITY EMISSIONS

In May 2022, the California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of the CalEEMod Version 2022.1. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (1). Accordingly, the latest version of CalEEMod has been used for this Project to determine construction and operational air quality and greenhouse gas emissions.

EXISTING GENERAL PLAN LAND USE/ZONING

The existing General Plan land use designation of the Project site is R-SF and the zoning is R-1 which allows for a maximum development 32 residential units (6.4 acres x 5.0 units/acre = 32 units).

The estimated operation-source emissions associated with the existing General Plan land use designation are summarized on Table 1. Detailed operation model outputs are presented in Attachment A.

TABLE 1: AIR QUALITY EMISSIONS FOR EXISTING GENERAL PLAN LAND USE

Land Use	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Single Family Detached Housing	2.88	1.77	10.95	0.02	0.70	0.18

PROPOSED GENERAL PLAN LAND USE/ZONING

The GPA would change the General Plan land use designation of the Project site to R-MFMH and the zoning of the Project site R-4, which allows for a maximum of 249 residential units (6.4 acres x 39 units/acre = 249 units). The net increase is 217 units assuming maximum development potential under the existing (32 units) and proposed (249 units) designations.

The estimated operation-source emissions associated with the proposed General Plan Land Use are summarized on Table 2. Detailed operation model outputs are presented in Attachment B.

TABLE 2: AIR QUALITY EMISSIONS FOR PROPOSED GENERAL PLAN LAND USE

Land Use	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Multifamily (Mid-Rise) Residential	11.68	8.30	49.10	0.09	2.75	0.83

AIR QUALITY EMISSIONS COMPARISON

Table 3 shows the emissions comparison between the proposed and existing General Plan Land Use/Zoning. The resulting net emissions are identified on Table 3.

TABLE 3: NET AIR QUALITY EMISSIONS (PROPOSED – EXISTING GENERAL PLAN LAND USE)

Land Use	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Current General Plan (R-SF): Single Family	2.88	1.77	10.95	0.02	0.70	0.18
Proposed General Plan (R-MFMH): Multifamily	11.68	8.30	49.10	0.09	2.75	0.83
Net Emissions (Proposed – Existing)	**8.80**	**6.53**	**38.15**	**0.07**	**2.05**	**0.65**

GREENHOUSE GAS EMISSIONS

EXISTING GENERAL PLAN LAND USE/ZONING

The existing General Plan land use designation of the Project site is R-SF and the zoning is R-1 which allows for a maximum development of 32 residential units (6.4 acres x 5.0 units/acre = 32 units. The estimated GHG emissions for the existing General Plan use are summarized on Table 4. The estimated GHG emission include emissions from Carbon Dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_20), and Refrigerants (R). As shown on Table 4, the existing General Plan Land Use would generate a total of approximately 426.65 $MTCO_2e$/yr.

TABLE 4: GHG EMISSIONS FOR EXISTING GENERAL PLAN LAND USE

Land Use	Emissions (MT/yr) Total CO_2E
Single Family Detached Housing	**426.65**

PROPOSED GENERAL PLAN LAND USE/ZONING

The GPA would change the General Plan land use designation of the Project site to R-MFMH and the zoning of the Project site R-4, which allows for a maximum of 249 residential units (6.4 acres x 39 units/acre = 249 units). The net increase is 217 units assuming maximum development potential under the existing (32 units) and proposed (249 units) designations. The estimated GHG emissions for the proposed General Plan Land Use are summarized on Table 5 and as shown, the proposed General Plan Land Use would generate a total of approximately 1,600.18 $MTCO_2e$/yr.

TABLE 5: GHG EMISSIONS FOR PROPOSED GENERAL PLAN LAND USE

Land Use	Emissions (MT/yr) Total CO_2E
Multifamily (Mid-Rise) Residential	**1,600.18**

GREENHOUSE GAS EMISSIONS COMPARISON

Table 6 shows the GHG emissions comparison between the proposed and existing General Plan Land Use/Zoning. The resulting net GHG emissions are identified on Table 6 and as shown, the proposed General Plan Land Use would generate a net increase of approximately 1,173.53 $MTCO_2e$/yr, as compared to the existing General Plan Land Use.

TABLE 6: NET GHG EMISSIONS (PROPOSED – EXISTING GENERAL PLAN LAND USE)

Land Use	Emissions (MT/yr) Total CO_2E
Current General Plan (R-SF): Single Family	426.65
Proposed General Plan (R-MFMH): Multifamily	1,600.18
Net Emissions (Proposed – Existing)	**1,173.53**

REFERENCES

1. **California Air Pollution Control Officers Association (CAPCOA).** California Emissions Estimator Model (CalEEMod). [Online] May 2022. www.caleemod.com.

ATTACHMENT A

CALEEMOD EXISTING GENERAL PLAN EMISSIONS MODEL OUTPUTS

15283 - Alder & Merrill (Existing) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	15283 - Alder & Merrill (Existing)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.80
Precipitation (days)	6.80
Location	34.092737, -117.414887
County	San Bernardino-South Coast
City	Fontana
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5327
EDFZ	10
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
Single Family Housing	32.0	Dwelling Unit	6.40	62,400	374,811	—	106	—

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.	1.59	2.88	1.71	11.0	0.02	0.07	0.62	0.70	0.07	0.11	0.18	19.2	3,174	3,193	2.10	0.11	8.19	3,286
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.32	2.62	1.77	7.87	0.02	0.07	0.62	0.69	0.07	0.11	0.18	19.2	3,046	3,065	2.11	0.11	0.65	3,151
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.36	2.67	1.33	9.04	0.02	0.04	0.61	0.65	0.04	0.11	0.15	19.2	2,469	2,488	2.10	0.11	3.73	2,576
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.49	0.24	1.65	< 0.005	0.01	0.11	0.12	0.01	0.02	0.03	3.18	409	412	0.35	0.02	0.62	427

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	1.33	1.23	0.97	8.83	0.02	0.01	0.62	0.64	0.01	0.11	0.12	—	1,963	1,963	0.11	0.10	7.74	2,002
Area	0.23	1.64	0.50	2.01	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	611	611	0.01	< 0.005	—	612
Energy	0.03	0.01	0.25	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	553	553	0.05	< 0.005	—	556
Water	—	—	—	—	—	—	—	—	—	—	—	2.56	46.0	48.5	0.27	0.01	—	57.2
Waste	—	—	—	—	—	—	—	—	—	—	—	16.7	0.00	16.7	1.67	0.00	—	58.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.45	0.45
Total	1.59	2.88	1.71	11.0	0.02	0.07	0.62	0.70	0.07	0.11	0.18	19.2	3,174	3,193	2.10	0.11	8.19	3,286
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.23	1.13	1.04	7.56	0.02	0.01	0.62	0.64	0.01	0.11	0.12	—	1,840	1,840	0.11	0.10	0.20	1,873
Area	0.06	1.47	0.48	0.20	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	606	606	0.01	< 0.005	—	607
Energy	0.03	0.01	0.25	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	553	553	0.05	< 0.005	—	556
Water	—	—	—	—	—	—	—	—	—	—	—	2.56	46.0	48.5	0.27	0.01	—	57.2
Waste	—	—	—	—	—	—	—	—	—	—	—	16.7	0.00	16.7	1.67	0.00	—	58.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.45	0.45
Total	1.32	2.62	1.77	7.87	0.02	0.07	0.62	0.69	0.07	0.11	0.18	19.2	3,046	3,065	2.11	0.11	0.65	3,151
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.20	1.10	1.03	7.68	0.02	0.01	0.61	0.62	0.01	0.11	0.12	—	1,824	1,824	0.11	0.10	3.28	1,860
Area	0.12	1.56	0.05	1.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	44.9	44.9	< 0.005	< 0.005	—	45.0
Energy	0.03	0.01	0.25	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	553	553	0.05	< 0.005	—	556
Water	—	—	—	—	—	—	—	—	—	—	—	2.56	46.0	48.5	0.27	0.01	—	57.2
Waste	—	—	—	—	—	—	—	—	—	—	—	16.7	0.00	16.7	1.67	0.00	—	58.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.45	0.45
Total	1.36	2.67	1.33	9.04	0.02	0.04	0.61	0.65	0.04	0.11	0.15	19.2	2,469	2,488	2.10	0.11	3.73	2,576
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.22	0.20	0.19	1.40	< 0.005	< 0.005	0.11	0.11	< 0.005	0.02	0.02	—	302	302	0.02	0.02	0.54	308
Area	0.02	0.28	0.01	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	7.43	7.43	< 0.005	< 0.005	—	7.45

Energy	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	91.6	91.6	0.01	< 0.005	—	92.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.42	7.61	8.03	0.04	< 0.005	—	9.47
Waste	—	—	—	—	—	—	—	—	—	—	—	2.76	0.00	2.76	0.28	0.00	—	9.66
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Total	0.25	0.49	0.24	1.65	< 0.005	0.01	0.11	0.12	0.01	0.02	0.03	3.18	409	412	0.35	0.02	0.62	427

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	1.33	1.23	0.97	8.83	0.02	0.01	0.62	0.64	0.01	0.11	0.12	—	1,963	1,963	0.11	0.10	7.74	2,002
Total	1.33	1.23	0.97	8.83	0.02	0.01	0.62	0.64	0.01	0.11	0.12	—	1,963	1,963	0.11	0.10	7.74	2,002
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	1.23	1.13	1.04	7.56	0.02	0.01	0.62	0.64	0.01	0.11	0.12	—	1,840	1,840	0.11	0.10	0.20	1,873
Total	1.23	1.13	1.04	7.56	0.02	0.01	0.62	0.64	0.01	0.11	0.12	—	1,840	1,840	0.11	0.10	0.20	1,873
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.22	0.20	0.19	1.40	< 0.005	< 0.005	0.11	0.11	< 0.005	0.02	0.02	—	302	302	0.02	0.02	0.54	308

Total	0.22	0.20	0.19	1.40	< 0.005	< 0.005	0.11	0.11	< 0.005	0.02	0.02	—	302	302	0.02	0.02	0.54	308

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	233	233	0.02	< 0.005	—	234
Total	—	—	—	—	—	—	—	—	—	—	—	—	233	233	0.02	< 0.005	—	234
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	233	233	0.02	< 0.005	—	234
Total	—	—	—	—	—	—	—	—	—	—	—	—	233	233	0.02	< 0.005	—	234
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	38.5	38.5	< 0.005	< 0.005	—	38.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	38.5	38.5	< 0.005	< 0.005	—	38.7

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.03	0.01	0.25	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	321	321	0.03	< 0.005	—	322
Total	0.03	0.01	0.25	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	321	321	0.03	< 0.005	—	322
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.03	0.01	0.25	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	321	321	0.03	< 0.005	—	322
Total	0.03	0.01	0.25	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	321	321	0.03	< 0.005	—	322
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	53.1	53.1	< 0.005	< 0.005	—	53.3
Total	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	53.1	53.1	< 0.005	< 0.005	—	53.3

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	0.06	0.03	0.48	0.20	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	606	606	0.01	< 0.005	—	607
Consumer Products	—	1.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.18	0.17	0.02	1.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.85	4.85	< 0.005	< 0.005	—	4.99
Total	0.23	1.64	0.50	2.01	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	611	611	0.01	< 0.005	—	612
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.06	0.03	0.48	0.20	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	606	606	0.01	< 0.005	—	607
Consumer Products	—	1.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.06	1.47	0.48	0.20	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	606	606	0.01	< 0.005	—	607
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	6.88	6.88	< 0.005	< 0.005	—	6.88
Consumer Products	—	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.02	< 0.005	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.55	0.55	< 0.005	< 0.005	—	0.57
Total	0.02	0.28	0.01	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	7.43	7.43	< 0.005	< 0.005	—	7.45

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2.56	46.0	48.5	0.27	0.01	—	57.2
Total	—	—	—	—	—	—	—	—	—	—	—	2.56	46.0	48.5	0.27	0.01	—	57.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2.56	46.0	48.5	0.27	0.01	—	57.2
Total	—	—	—	—	—	—	—	—	—	—	—	2.56	46.0	48.5	0.27	0.01	—	57.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.42	7.61	8.03	0.04	< 0.005	—	9.47
Total	—	—	—	—	—	—	—	—	—	—	—	0.42	7.61	8.03	0.04	< 0.005	—	9.47

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	16.7	0.00	16.7	1.67	0.00	—	58.4
Total	—	—	—	—	—	—	—	—	—	—	—	16.7	0.00	16.7	1.67	0.00	—	58.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	16.7	0.00	16.7	1.67	0.00	—	58.4
Total	—	—	—	—	—	—	—	—	—	—	—	16.7	0.00	16.7	1.67	0.00	—	58.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2.76	0.00	2.76	0.28	0.00	—	9.66
Total	—	—	—	—	—	—	—	—	—	—	—	2.76	0.00	2.76	0.28	0.00	—	9.66

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.45	0.45
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.45	0.45

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.45	0.45
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.45	0.45
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07

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
Single Family Housing	302	303	271	108,641	2,219	2,231	1,996	799,006

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	29
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	3

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)
126360	42,120	0.00	0.00	—

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)
Single Family Housing	243,508	349	0.0330	0.0040	1,001,271

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	1,333,798	7,356,722

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	9.34	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
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 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	26.4	annual days of extreme heat
Extreme Precipitation	4.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	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	97.6
AQ-PM	85.9
AQ-DPM	55.4
Drinking Water	66.7
Lead Risk Housing	75.0
Pesticides	0.00
Toxic Releases	79.3
Traffic	17.2
Effect Indicators	—
CleanUp Sites	17.1
Groundwater	0.00
Haz Waste Facilities/Generators	1.80
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	57.3
Cardio-vascular	77.1
Low Birth Weights	58.6
Socioeconomic Factor Indicators	—
Education	78.0
Housing	66.9
Linguistic	62.2
Poverty	73.4
Unemployment	81.7

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	24.98395996
Employed	20.67239831
Median HI	39.02219941
Education	—
Bachelor's or higher	8.520467086
High school enrollment	100
Preschool enrollment	19.70999615
Transportation	—
Auto Access	91.71050943
Active commuting	9.097908379
Social	—
2-parent households	56.40959836
Voting	23.67509303
Neighborhood	—
Alcohol availability	48.24842808
Park access	16.54048505
Retail density	24.95829591
Supermarket access	33.04247402
Tree canopy	25.06095214
Housing	—
Homeownership	73.48902862
Housing habitability	24.09854998
Low-inc homeowner severe housing cost burden	34.60798152
Low-inc renter severe housing cost burden	2.720390094
Uncrowded housing	12.65238034

Health Outcomes	—
Insured adults	14.5515206
Arthritis	53.0
Asthma ER Admissions	28.6
High Blood Pressure	63.5
Cancer (excluding skin)	77.2
Asthma	23.6
Coronary Heart Disease	47.4
Chronic Obstructive Pulmonary Disease	31.1
Diagnosed Diabetes	30.7
Life Expectancy at Birth	28.4
Cognitively Disabled	17.4
Physically Disabled	33.4
Heart Attack ER Admissions	13.2
Mental Health Not Good	20.5
Chronic Kidney Disease	35.4
Obesity	19.9
Pedestrian Injuries	19.6
Physical Health Not Good	22.0
Stroke	45.2
Health Risk Behaviors	—
Binge Drinking	41.7
Current Smoker	25.4
No Leisure Time for Physical Activity	26.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	20.9
Elderly	67.6
English Speaking	47.3
Foreign-born	59.9
Outdoor Workers	21.3
Climate Change Adaptive Capacity	—
Impervious Surface Cover	63.2
Traffic Density	30.5
Traffic Access	23.0
Other Indices	—
Hardship	84.4
Other Decision Support	—
2016 Voting	37.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	68.0
Healthy Places Index Score for Project Location (b)	21.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
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
Operations: Vehicle Data	Trip characteristics taken from traffic analysis
Land Use	Taken from site plan
Operations: Hearths	SCAQMD Rule 445 no wood burning devices Wood burning devices added to gas devices

ATTACHMENT B

CALEEMOD PROPOSED GENERAL PLAN EMISSIONS MODEL OUTPUTS

15283 - Alder & Merrill (Proposed) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	15283 - Alder & Merrill (Proposed)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.80
Precipitation (days)	6.80
Location	34.092864, -117.414801
County	San Bernardino-South Coast
City	Fontana
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5327
EDFZ	10
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
Apartments Mid Rise	249	Dwelling Unit	6.40	239,040	0.00	—	824	—

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.	6.87	11.7	8.17	49.1	0.10	0.41	2.33	2.75	0.41	0.42	0.83	119	14,095	14,214	12.6	0.43	30.8	14,689
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.15	10.0	8.30	30.2	0.10	0.41	2.33	2.74	0.41	0.42	0.82	119	13,597	13,716	12.7	0.44	2.47	14,166
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.51	10.5	4.88	38.5	0.07	0.13	2.26	2.39	0.13	0.40	0.53	119	9,092	9,211	12.6	0.43	13.9	9,666
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.00	1.92	0.89	7.03	0.01	0.02	0.41	0.44	0.02	0.07	0.10	19.7	1,505	1,525	2.08	0.07	2.30	1,600

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	4.99	4.61	3.62	33.1	0.07	0.05	2.33	2.38	0.05	0.42	0.46	—	7,363	7,363	0.40	0.36	29.1	7,509
Area	1.80	7.03	3.86	15.7	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,756	4,756	0.09	0.01	—	4,762

Energy	0.08	0.04	0.69	0.30	< 0.005	0.06	—	0.06	0.06	—	0.06	—	1,907	1,907	0.18	0.01	—	1,916
Water	—	—	—	—	—	—	—	—	—	—	—	19.9	67.5	87.4	2.05	0.05	—	153
Waste	—	—	—	—	—	—	—	—	—	—	—	99.2	0.00	99.2	9.92	0.00	—	347
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.71	1.71
Total	6.87	11.7	8.17	49.1	0.10	0.41	2.33	2.75	0.41	0.42	0.83	119	14,095	14,214	12.6	0.43	30.8	14,689
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.63	4.24	3.89	28.4	0.07	0.05	2.33	2.38	0.05	0.42	0.46	—	6,903	6,903	0.43	0.37	0.75	7,025
Area	0.44	5.74	3.72	1.58	0.02	0.30	—	0.30	0.30	—	0.30	0.00	4,719	4,719	0.09	0.01	—	4,723
Energy	0.08	0.04	0.69	0.30	< 0.005	0.06	—	0.06	0.06	—	0.06	—	1,907	1,907	0.18	0.01	—	1,916
Water	—	—	—	—	—	—	—	—	—	—	—	19.9	67.5	87.4	2.05	0.05	—	153
Waste	—	—	—	—	—	—	—	—	—	—	—	99.2	0.00	99.2	9.92	0.00	—	347
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.71	1.71
Total	5.15	10.0	8.30	30.2	0.10	0.41	2.33	2.74	0.41	0.42	0.82	119	13,597	13,716	12.7	0.44	2.47	14,166
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.46	4.08	3.84	28.5	0.07	0.05	2.26	2.31	0.05	0.40	0.45	—	6,768	6,768	0.41	0.36	12.2	6,898
Area	0.96	6.43	0.35	9.75	< 0.005	0.02	—	0.02	0.03	—	0.03	0.00	349	349	0.01	< 0.005	—	350
Energy	0.08	0.04	0.69	0.30	< 0.005	0.06	—	0.06	0.06	—	0.06	—	1,907	1,907	0.18	0.01	—	1,916
Water	—	—	—	—	—	—	—	—	—	—	—	19.9	67.5	87.4	2.05	0.05	—	153
Waste	—	—	—	—	—	—	—	—	—	—	—	99.2	0.00	99.2	9.92	0.00	—	347
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.71	1.71
Total	5.51	10.5	4.88	38.5	0.07	0.13	2.26	2.39	0.13	0.40	0.53	119	9,092	9,211	12.6	0.43	13.9	9,666
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.81	0.74	0.70	5.20	0.01	0.01	0.41	0.42	0.01	0.07	0.08	—	1,120	1,120	0.07	0.06	2.02	1,142
Area	0.18	1.17	0.06	1.78	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	57.8	57.8	< 0.005	< 0.005	—	58.0
Energy	0.01	0.01	0.13	0.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	316	316	0.03	< 0.005	—	317
Water	—	—	—	—	—	—	—	—	—	—	—	3.29	11.2	14.5	0.34	0.01	—	25.4

Waste	—	—	—	—	—	—	—	—	—	—	—	16.4	0.00	16.4	1.64	0.00	—	57.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
Total	1.00	1.92	0.89	7.03	0.01	0.02	0.41	0.44	0.02	0.07	0.10	19.7	1,505	1,525	2.08	0.07	2.30	1,600

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	4.99	4.61	3.62	33.1	0.07	0.05	2.33	2.38	0.05	0.42	0.46	—	7,363	7,363	0.40	0.36	29.1	7,509
Total	4.99	4.61	3.62	33.1	0.07	0.05	2.33	2.38	0.05	0.42	0.46	—	7,363	7,363	0.40	0.36	29.1	7,509
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	4.63	4.24	3.89	28.4	0.07	0.05	2.33	2.38	0.05	0.42	0.46	—	6,903	6,903	0.43	0.37	0.75	7,025
Total	4.63	4.24	3.89	28.4	0.07	0.05	2.33	2.38	0.05	0.42	0.46	—	6,903	6,903	0.43	0.37	0.75	7,025
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.81	0.74	0.70	5.20	0.01	0.01	0.41	0.42	0.01	0.07	0.08	—	1,120	1,120	0.07	0.06	2.02	1,142
Total	0.81	0.74	0.70	5.20	0.01	0.01	0.41	0.42	0.01	0.07	0.08	—	1,120	1,120	0.07	0.06	2.02	1,142

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,027	1,027	0.10	0.01	—	1,032
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,027	1,027	0.10	0.01	—	1,032
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,027	1,027	0.10	0.01	—	1,032
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,027	1,027	0.10	0.01	—	1,032
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.02	< 0.005	—	171
Total	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.02	< 0.005	—	171

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.08	0.04	0.69	0.30	< 0.005	0.06	—	0.06	0.06	—	0.06	—	881	881	0.08	< 0.005	—	883
Total	0.08	0.04	0.69	0.30	< 0.005	0.06	—	0.06	0.06	—	0.06	—	881	881	0.08	< 0.005	—	883
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.08	0.04	0.69	0.30	< 0.005	0.06	—	0.06	0.06	—	0.06	—	881	881	0.08	< 0.005	—	883
Total	0.08	0.04	0.69	0.30	< 0.005	0.06	—	0.06	0.06	—	0.06	—	881	881	0.08	< 0.005	—	883
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.01	0.01	0.13	0.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	146	146	0.01	< 0.005	—	146
Total	0.01	0.01	0.13	0.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	146	146	0.01	< 0.005	—	146

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	0.44	0.22	3.72	1.58	0.02	0.30	—	0.30	0.30	—	0.30	0.00	4,719	4,719	0.09	0.01	—	4,723
Consumer Products	—	5.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.36	1.29	0.14	14.1	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.8	37.8	< 0.005	< 0.005	—	38.8
Total	1.80	7.03	3.86	15.7	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,756	4,756	0.09	0.01	—	4,762
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.44	0.22	3.72	1.58	0.02	0.30	—	0.30	0.30	—	0.30	0.00	4,719	4,719	0.09	0.01	—	4,723
Consumer Products	—	5.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.44	5.74	3.72	1.58	0.02	0.30	—	0.30	0.30	—	0.30	0.00	4,719	4,719	0.09	0.01	—	4,723
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	53.5	53.5	< 0.005	< 0.005	—	53.6
Consumer Products	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.17	0.16	0.02	1.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.28	4.28	< 0.005	< 0.005	—	4.40
Total	0.18	1.17	0.06	1.78	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	57.8	57.8	< 0.005	< 0.005	—	58.0

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	19.9	67.5	87.4	2.05	0.05	—	153
Total	—	—	—	—	—	—	—	—	—	—	—	19.9	67.5	87.4	2.05	0.05	—	153
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	19.9	67.5	87.4	2.05	0.05	—	153
Total	—	—	—	—	—	—	—	—	—	—	—	19.9	67.5	87.4	2.05	0.05	—	153
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	3.29	11.2	14.5	0.34	0.01	—	25.4
Total	—	—	—	—	—	—	—	—	—	—	—	3.29	11.2	14.5	0.34	0.01	—	25.4

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	99.2	0.00	99.2	9.92	0.00	—	347
Total	—	—	—	—	—	—	—	—	—	—	—	99.2	0.00	99.2	9.92	0.00	—	347
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	99.2	0.00	99.2	9.92	0.00	—	347
Total	—	—	—	—	—	—	—	—	—	—	—	99.2	0.00	99.2	9.92	0.00	—	347
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	16.4	0.00	16.4	1.64	0.00	—	57.5
Total	—	—	—	—	—	—	—	—	—	—	—	16.4	0.00	16.4	1.64	0.00	—	57.5

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.71	1.71
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.71	1.71

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.71	1.71
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.71	1.71
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28

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
Apartments Mid Rise	1,130	1,138	939	403,010	8,314	8,369	6,904	2,963,968

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)

Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	224
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	25

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)
484056	161,352	0.00	0.00	—

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)
Apartments Mid Rise	1,074,724	349	0.0330	0.0040	2,748,258

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	10,378,613	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	55.6	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
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	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	26.4	annual days of extreme heat
Extreme Precipitation	4.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	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	97.6

AQ-PM	85.9
AQ-DPM	55.4
Drinking Water	66.7
Lead Risk Housing	75.0
Pesticides	0.00
Toxic Releases	79.3
Traffic	17.2
Effect Indicators	—
CleanUp Sites	17.1
Groundwater	0.00
Haz Waste Facilities/Generators	1.80
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	57.3
Cardio-vascular	77.1
Low Birth Weights	58.6
Socioeconomic Factor Indicators	—
Education	78.0
Housing	66.9
Linguistic	62.2
Poverty	73.4
Unemployment	81.7

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	24.98395996
Employed	20.67239831
Median HI	39.02219941
Education	—
Bachelor's or higher	8.520467086
High school enrollment	100
Preschool enrollment	19.70999615
Transportation	—
Auto Access	91.71050943
Active commuting	9.097908379
Social	—
2-parent households	56.40959836
Voting	23.67509303
Neighborhood	—
Alcohol availability	48.24842808
Park access	16.54048505
Retail density	24.95829591
Supermarket access	33.04247402
Tree canopy	25.06095214
Housing	—
Homeownership	73.48902862
Housing habitability	24.09854998
Low-inc homeowner severe housing cost burden	34.60798152
Low-inc renter severe housing cost burden	2.720390094
Uncrowded housing	12.65238034
Health Outcomes	—

Insured adults	14.5515206
Arthritis	53.0
Asthma ER Admissions	28.6
High Blood Pressure	63.5
Cancer (excluding skin)	77.2
Asthma	23.6
Coronary Heart Disease	47.4
Chronic Obstructive Pulmonary Disease	31.1
Diagnosed Diabetes	30.7
Life Expectancy at Birth	28.4
Cognitively Disabled	17.4
Physically Disabled	33.4
Heart Attack ER Admissions	13.2
Mental Health Not Good	20.5
Chronic Kidney Disease	35.4
Obesity	19.9
Pedestrian Injuries	19.6
Physical Health Not Good	22.0
Stroke	45.2
Health Risk Behaviors	—
Binge Drinking	41.7
Current Smoker	25.4
No Leisure Time for Physical Activity	26.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	20.9

Elderly	67.6
English Speaking	47.3
Foreign-born	59.9
Outdoor Workers	21.3
Climate Change Adaptive Capacity	—
Impervious Surface Cover	63.2
Traffic Density	30.5
Traffic Access	23.0
Other Indices	—
Hardship	84.4
Other Decision Support	—
2016 Voting	37.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	68.0
Healthy Places Index Score for Project Location (b)	21.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
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
Operations: Vehicle Data	Trip characteristics taken from Traffic Analysis
Land Use	Taken from client data
Operations: Hearths	SCAQMD Rule 445 no wood burning devices Wood burning devices added to gas devices