

To: City of Orange
 From: Maryam Javanmardi and Tina Yuan, EPD Solutions, Inc.
 Date: 11/11/2025
 Site: 715 West Fletcher Avenue, Orange, CA
 Subject: Air Quality Impact Analysis for the Fletcher 15 Project
 EPD Project Number 25-116

Project Overview

This technical memorandum evaluates the potential air quality impacts associated with the proposed Fletcher 15 Project (“Project” or “proposed Project”) in the City of Orange. The Project site, currently vacant, encompasses approximately 0.72 acres (gross and net), consisting of two parcels identified by Assessor’s Parcel Numbers (APNs) 374-261-10 and 374-261-11. The proposed Project would construct 15 single-family detached residential units on the 0.72-acre site, resulting in a density of 20.83 dwelling units per acre. Of the 15 units, 14 would be market-rate, and one unit would be reserved for a very low-income household.

The proposed Project would provide a total of 39 parking spaces. Each unit would include a two-car enclosed garage, totaling 30 garage spaces, with an additional nine open parking spaces provided on-site. The total area of open space proposed is approximately 7,951 square feet, or 31 percent of the total site area. The site plan for the proposed Project is shown in Figure 1, *Conceptual Site Plan*.

To support the California Environmental Quality Act (CEQA) document that is being prepared for this Project, this technical memorandum analyzes the proposed Project’s construction and operational impacts on air quality (emission of criteria pollutants) using the California Emissions Estimator Model (CalEEMod Version 2022.1) land use emission model. Table 1, *Construction Schedule*, shows the estimated construction schedule, which is expected to last approximately 12 months.

Table 1: Construction Schedule

Activity	Start Date	End Date	Total Working Days
Site Preparation	3/1/2027	3/12/2027	10
Grading	3/13/2027	3/26/2027	10
Building Construction	3/27/2027	1/28/2028	220
Paving	1/29/2028	2/11/2028	10
Architectural Coating	2/12/2028	3/10/2028	20

Source: CalEEMod Output Sheets (see Attachment A).



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CalEEMod Modeling Details

The following non-default assumptions and adjustments were used in the CalEEMod emission model for this analysis:

- Land Use: The lot acreage was adjusted to match the site plan provided by the applicant.
- Construction Equipment: It was assumed that all equipment would be used for 8 hours per workday. Tractor/loaders/backhoes were replaced with crawler tractors in the site preparation and grading construction phases.
- Operation: Hearths, wood stoves, and wood fireplaces were removed in accordance with SCAQMD Rule 445, which prohibits the installation of wood-burning devices in effort to reduce particulate matter and reduce production of VOCs¹. Removed gas and propane fireplaces as neither are proposed for the Project.
- Operational Vehicle Data: The trip rate was adjusted for Weekday Trips, Saturday Trips, and Sunday Trips to match ITE 12th Edition trip rates for *210-Single-Family Detached Housing* and *223-Affordable Housing – Income Limits*.
- Operation: Energy Use, since the Project does not include natural gas, the estimated natural gas consumption is converted to electricity-equivalent using a factor of 0.18 and added to the electricity consumption, based on the *Comparison of Home Appliance Energy Use, Operating Costs, and Carbon Dioxide Emissions – 2022 Update*, prepared by American Gas Association (AGA) in 2022 (AGA 2022)².

Summary of Air Quality Analysis

Air Quality

The proposed Project's maximum daily emissions (regional and local) for construction and operation would not exceed the South Coast Air Quality Management District's (SCAQMD) regional thresholds of significance. In addition, all construction activities would comply with applicable SCAQMD rules and regulations, including Rule 402, Rule 403, Rule 445, and Rule 1113:

- Rule 402, *Public Nuisance*: Prohibits the discharge of air contaminants that cause injury, nuisance, or annoyance to the public or damage to property.
- Rule 403, *Fugitive Dust*: Aims to minimize fugitive particulate matter dust emissions during construction activities.
- Rule 445, *Wood Burning Devices*: Reduces the production of emissions of particulate matter and volatile organic compounds from wood-burning devices.
- Rule 1113, *Architectural Coatings*: Allows only low-volatile organic compounds (VOC) paints to be used.

The construction and operation of the proposed Project would not exceed SCAQMD thresholds for any of the six criteria pollutants. Projects that do not exceed the regional thresholds are assumed to not have a significant impact on both a project level and cumulative level. Furthermore, odors produced by the construction and operation of the proposed Project would be minimal and comply with SCAQMD Rule 402. Therefore, the proposed Project would have less-than-significant air quality impacts.

¹ SCAQMD (2020). *Rule 445, Wood-Burning Devices*. Referenced at <https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-445.pdf>

² American Gas Association (AGA). 2022. *Comparison of Home Appliance Energy Use, Operating Costs, and Carbon Dioxide Emissions – 2022 Update*. Washington, D.C. Referenced at <https://www.aga.org/wp-content/uploads/2023/02/Appliance-Cost-and-Emissions-Comparison-2022.pdf>

Air Quality

Methodology and Model Inputs

To calculate the construction and operational impacts, the air quality emissions were estimated using CalEEMod. The passenger vehicles were analyzed using the CalEEMod default trip distance information.

Regional Emissions

SCAQMD has adopted maximum daily emission thresholds (pounds/day) for the criteria pollutants during construction and operation of a project.³ While incremental regional air quality impacts of an individual project are generally very small and difficult to measure, SCAQMD's regional maximum emission thresholds set standards to reduce the burden of SCAQMD to attain and maintain ambient air quality standards. The regional thresholds apply to the criteria pollutants mentioned in Tables 2, *Regional Construction Emission Estimates*, and 3, *Regional Operational Emission Estimates*, along with the CalEEMod Project emissions. These emission thresholds include the Project emissions generated both from on-site sources (such as off-road construction equipment and fugitive dust) and off-site sources (vehicle travel arriving to and leaving from the site). As shown in Tables 2 and 3, the Project would generate emissions below the SCAQMD thresholds and therefore would result in less-than-significant regional air quality impacts.

Table 2: Regional Construction Emission Estimates

Construction Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2027 (Year 1)						
Site Preparation	1.47	12.65	13.28	0.02	2.71	1.51
Grading	1.47	12.65	13.28	0.02	2.71	1.51
Building Construction	0.71	6.57	9.24	0.02	0.33	0.25
Maximum Daily Emissions (2027)	1.47	12.65	13.28	0.02	2.71	1.51
2028 (Year 2)						
Building Construction	0.68	6.16	9.19	0.02	0.31	0.23
Paving	0.63	4.92	6.95	0.01	0.41	0.22
Architectural Coating	8.43	1.08	1.53	<0.01	0.03	0.02
Maximum Daily Emissions (2028)	8.43	6.16	9.19	0.02	0.41	0.23
Maximum Daily Emissions (2027-2028)	8.43	12.65	13.28	0.02	2.71	1.51
SCAQMD Thresholds	75	100	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

Notes: ROG = reactive organic gases, NO_x = nitrogen oxides, CO = carbon monoxide, SO₂ = sulfur dioxide, PM₁₀ = particulate matter 10 microns in diameter, PM_{2.5} = particulate matter 2.5 microns in diameter

Source: CalEEMod output sheets are provided in Attachment A, and the detailed calculation sheets are provided in Attachment B.

³ SCAQMD. (March 2023). *South Coast AQMD Air Quality Significance Thresholds*. Referenced at <https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25>.

Table 3: Regional Operational Emission Estimates

Operational Activity	Maximum Daily Regional Emissions					
	(pounds/day) *					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Mobile	0.46	0.40	4.90	0.01	1.40	0.36
Area	0.68	0.01	0.85	<0.01	<0.01	<0.01
Energy ¹	0.00	0.00	0.00	0.00	0.00	0.00
Total Operational Emissions	1.15	0.41	5.75	0.01	1.40	0.36
SCAQMD Significance Thresholds	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

Notes: ROG = reactive organic gases, NO_x = nitrogen oxides, CO = carbon monoxide, SO₂ = sulfur dioxide, PM₁₀ = particulate matter 10 microns in diameter, PM_{2.5} = particulate matter 2.5 microns in diameter

1. Since the Project does not include natural gas, the estimated natural gas consumption is converted to electricity-equivalent using a factor of 0.18 and added to the electricity consumption (AGA 2022).

* Values may vary slightly due to rounding.

Source: CalEEMod output sheets are provided in Attachment A, and the detailed calculation sheets are provided in Attachment B.

Local Emissions

Localized significance thresholds (LSTs) were also adopted by the SCAQMD due to project-related construction air emissions having the potential to exceed the State and national air quality standards in the project vicinity, while not exceeding the regional emission significance thresholds adopted by the SCAQMD. These thresholds set the maximum rates of daily construction emissions from a project site that would not exceed a national or State ambient air quality standard.⁴ The differences between regional thresholds and LSTs are as follows:

1. Regional thresholds include all sources of project construction emissions generated from onsite and offsite emission sources, whereas the LSTs only consider the emissions generated from onsite emission sources.
2. LSTs only apply to carbon monoxide (CO), nitrogen oxides (NO_x), and particulate matter (PM₁₀ and PM_{2.5}), while regional thresholds include both reactive organic gases (ROG) and sulfur dioxide (SO₂).
3. Regional thresholds apply to emission sources located anywhere within the SCAQMD whereas the LSTs are location dependent and rely on the size of the project and emission location relative to the nearest sensitive receptor.

SCAQMD provides screening tables (Appendix C of the SCAQMD 2008 *Final Localized Significance Threshold Methodology*) for projects that disturb less than or equal to 5 acres in a day.⁵ These tables were created to easily determine if the daily emissions of NO_x, CO, PM₁₀, and PM_{2.5} from a project could result in a significant impact to the local air quality. The thresholds are determined by:

- Source receptor area (SRA), which is the geographic area within the SCAQMD that can act as both a source of emissions and a receptor of emission impacts (the Project is located within SRA 17, Central Orange County);
- Size of grading disturbance (construction)/size of the project (operation); and

⁴ SCAQMD. 2008: *Final Localized Significance Threshold Methodology*. Referenced at <http://www.aqmd.gov/docs/defaultsource/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf>.

⁵ SCAQMD. 2008: *Final Localized Significance Threshold Methodology Appendix C*. Referenced at <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2>.

- Distance to the nearest sensitive receptor, which is defined as an individual who is most susceptible to negative health effects when exposed to air pollutants and includes children, the elderly, and adults with chronic health issues. Locations for such receptors include residences, schools, elderly care centers, and hospitals.

Calculation of construction equipment modeled in CalEEMod and acres disturbed per day can be found in Attachment B, *Calculation Details Sheets*. The phase with the greatest ground disturbance would be the grading and site preparation phases, with a maximum of 1.5 acres of ground disturbance per day. However, because the total Project site is approximately 0.72 acres, and SCAQMD guidance recommends using the lesser of the total site area or daily disturbance for threshold selection, construction emissions were evaluated using the 1-acre disturbance threshold.⁶ The closest sensitive receptor to the Project site is the residential home located immediately adjacent to the Project site's eastern boundary. Therefore, the construction emission thresholds for the lowest distance available (25 meters) were used.

Table 4, *Localized Construction Emission Estimates*, shows the thresholds and estimated maximum daily construction emissions for the proposed Project. As shown in Table 4, the proposed Project would not exceed the SCAQMD LST thresholds and would therefore have a less-than-significant localized construction air quality impact.

Table 4: Localized Construction Emission Estimates

Construction Activity	Maximum Daily Localized Emissions (pounds/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
2027 (Year 1)				
Site Preparation	12.63	12.96	2.61	1.48
Grading	12.63	12.96	2.61	1.48
Building Construction	6.51	8.94	0.25	0.23
Maximum On-Site Emissions (2027)	12.63	12.96	2.61	1.48
2028 (Year 2)				
Building Construction	6.10	8.95	0.22	0.20
Paving	4.87	6.25	0.19	0.17
Architectural Coating	1.08	1.49	0.02	0.02
Maximum On-Site Emissions (2028)	6.10	8.95	0.22	0.20
Maximum Daily Emissions (2027-2028)	12.63	12.96	2.61	1.48
SCAQMD Screening Thresholds	81.00	485.00	4.00	3.00
Threshold Exceeded?	No	No	No	No

Notes: NO_x = nitrogen oxides, CO = carbon monoxide, PM₁₀ = particulate matter 10 microns in diameter, PM_{2.5} = particulate matter 2.5 microns in diameter

Source: CalEEMod output sheets are provided in Attachment A, and the detailed calculation sheets are provided in Attachment B.

According to the SCAQMD LST methodology, LSTs apply to a project's stationary and on-site mobile sources. Projects that involve mobile sources that spend long periods queuing and idling at a site, such as transfer facilities or warehousing and distribution buildings, have the potential to exceed the operational localized significance thresholds. The proposed Project consists of 15 detached residential dwelling units and is not

⁶ SCAQMD. (2011). *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*. Referenced at <https://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/calceemod-guidance.pdf>

anticipated to result in significant vehicle idling or queuing activity. Therefore, due to the lack of significant stationary source emissions, impacts related to operational LSTs would be less than significant.

Conclusion

The proposed Project's maximum daily regional and localized construction and operational emissions would not exceed SCAQMD's regional thresholds of significance, as detailed in Tables 2 through 4. All construction activities would comply with applicable SCAQMD rules and regulations, ensuring minimal and temporary odor exposure during construction. Operational impacts are also anticipated to be minimal and consistent with surrounding land uses.

Overall, the proposed Project's impacts related to air quality would be less than significant.

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Fletcher 15 Proposed Project Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	Fletcher 15 Proposed Project
Construction Start Date	3/1/2027
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.8
Precipitation (days)	21
Location	705 W Fletcher Ave, Orange, CA 92865, USA
County	Orange
City	Orange
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5734
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.32

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	14	Dwelling Unit	0.56	24,500	7,951	—	42	Marker Rate Unit

Parking Lot	9.0	Space	0.08	0.00	0.00	—	—	Open Space Parking
Other Non-Asphalt Surfaces	0.04	Acre	0.04	0.00	0.00	—	—	—
Single Family Housing	1.00	Dwelling Unit	0.04	1,750	0.00	—	3.0	Low Income Unit

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction 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.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	0.71	6.6	9.2	0.02	0.33	0.25	2,004
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	8.4	13	13	0.02	2.7	1.5	2,397
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	0.52	4.3	5.8	0.01	0.33	0.22	1,228
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.09	0.78	1.1	< 0.005	0.06	0.04	203
Exceeds (Daily Max)	—	—	—	—	—	—	—
Threshold	75	100	550	150	150	55	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—
Threshold	75	100	550	150	150	55	—
Unmit.	No	No	No	No	No	No	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—
2027	0.71	6.6	9.2	0.02	0.33	0.25	2,004
Daily - Winter (Max)	—	—	—	—	—	—	—
2027	1.5	13	13	0.02	2.7	1.5	2,397
2028	8.4	6.2	9.2	0.02	0.41	0.23	1,998
Average Daily	—	—	—	—	—	—	—
2027	0.47	4.3	5.8	0.01	0.33	0.22	1,228
2028	0.52	0.53	0.78	< 0.005	0.03	0.02	153
Annual	—	—	—	—	—	—	—
2027	0.09	0.78	1.1	< 0.005	0.06	0.04	203
2028	0.09	0.10	0.14	< 0.005	0.01	< 0.005	25

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.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	1.1	0.40	5.7	0.01	1.4	0.36	1,687
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	1.1	0.43	4.5	0.01	1.4	0.36	1,626
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	1.1	0.41	4.8	0.01	1.3	0.33	1,535
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.20	0.07	0.88	< 0.005	0.23	0.06	254
Exceeds (Daily Max)	—	—	—	—	—	—	—

Threshold	55	55	550	150	150	55	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—
Threshold	55	55	550	150	150	55	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Annual)	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	3,000
Unmit.	—	—	—	—	—	—	No

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	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	0.46	0.40	4.9	0.01	1.4	0.36	1,452
Area	0.68	0.01	0.85	< 0.005	< 0.005	< 0.005	2.3
Energy	0.00	0.00	0.00	0.00	0.00	0.00	200
Water	—	—	—	—	—	—	8.9
Waste	—	—	—	—	—	—	23
Refrig.	—	—	—	—	—	—	0.19
Total	1.1	0.40	5.7	0.01	1.4	0.36	1,687
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	0.46	0.43	4.5	0.01	1.4	0.36	1,394
Area	0.61	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	200
Water	—	—	—	—	—	—	8.9
Waste	—	—	—	—	—	—	23
Refrig.	—	—	—	—	—	—	0.19

Total	1.1	0.43	4.5	0.01	1.4	0.36	1,626
Average Daily	—	—	—	—	—	—	—
Mobile	0.42	0.40	4.2	0.01	1.3	0.33	1,301
Area	0.66	0.01	0.58	< 0.005	< 0.005	< 0.005	1.6
Energy	0.00	0.00	0.00	0.00	0.00	0.00	200
Water	—	—	—	—	—	—	8.9
Waste	—	—	—	—	—	—	23
Refrig.	—	—	—	—	—	—	0.19
Total	1.1	0.41	4.8	0.01	1.3	0.33	1,535
Annual	—	—	—	—	—	—	—
Mobile	0.08	0.07	0.77	< 0.005	0.23	0.06	215
Area	0.12	< 0.005	0.11	< 0.005	< 0.005	< 0.005	0.26
Energy	0.00	0.00	0.00	0.00	0.00	0.00	33
Water	—	—	—	—	—	—	1.5
Waste	—	—	—	—	—	—	3.7
Refrig.	—	—	—	—	—	—	0.03
Total	0.20	0.07	0.88	< 0.005	0.23	0.06	254

3. Construction Emissions Details

3.1. Site Preparation (2027) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	1.4	13	13	0.02	0.63	0.58	2,304

Dust From Material Movement	—	—	—	—	2.0	0.91	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.35	0.35	< 0.005	0.02	0.02	63
Dust From Material Movement	—	—	—	—	0.05	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.06	< 0.005	< 0.005	< 0.005	10
Dust From Material Movement	—	—	—	—	0.01	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.02	0.02	0.32	0.00	0.10	0.02	92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	2.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.43
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2027) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	1.4	13	13	0.02	0.63	0.58	2,304
Dust From Material Movement	—	—	—	—	2.0	0.91	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.35	0.35	< 0.005	0.02	0.02	63
Dust From Material Movement	—	—	—	—	0.05	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.06	< 0.005	< 0.005	< 0.005	10
Dust From Material Movement	—	—	—	—	0.01	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.02	0.02	0.32	0.00	0.10	0.02	92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	2.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.43
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2027) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.69	6.5	8.9	0.02	0.25	0.23	1,882
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.69	6.5	8.9	0.02	0.25	0.23	1,882
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.38	3.6	4.9	0.01	0.14	0.12	1,031
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.65	0.89	< 0.005	0.02	0.02	171
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.02	0.02	0.27	0.00	0.07	0.02	70
Vendor	< 0.005	0.05	0.02	< 0.005	0.01	< 0.005	52
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.02	0.02	0.23	0.00	0.07	0.02	67
Vendor	< 0.005	0.05	0.03	< 0.005	0.01	< 0.005	51

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.04	0.01	37
Vendor	< 0.005	0.03	0.01	< 0.005	0.01	< 0.005	28
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.01	< 0.005	6.1
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	4.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.67	6.1	9.0	0.02	0.22	0.20	1,883
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.33	0.49	< 0.005	0.01	0.01	103
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.09	< 0.005	< 0.005	< 0.005	17
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.01	0.02	0.22	0.00	0.07	0.02	65

Vendor	< 0.005	0.05	0.02	< 0.005	0.01	< 0.005	50
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	3.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.46
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.56	4.9	6.2	0.01	0.19	0.17	976
Paving	0.02	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.13	0.17	< 0.005	0.01	< 0.005	27
Paving	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	< 0.005	4.4
Paving	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.05	0.05	0.70	0.00	0.23	0.05	212
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.01	< 0.005	5.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.98
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.1	1.5	< 0.005	0.02	0.02	179
Architectural Coatings	8.3	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.08	< 0.005	< 0.005	< 0.005	9.8
Architectural Coatings	0.45	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	1.6
Architectural Coatings	0.08	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.01	< 0.005	13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	0.46	0.40	4.9	0.01	1.4	0.36	1,452

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.46	0.40	4.9	0.01	1.4	0.36	1,452
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	0.46	0.43	4.5	0.01	1.4	0.36	1,394
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.46	0.43	4.5	0.01	1.4	0.36	1,394
Annual	—	—	—	—	—	—	—
Single Family Housing	0.08	0.07	0.77	< 0.005	0.23	0.06	215
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.08	0.07	0.77	< 0.005	0.23	0.06	215

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	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	197
Parking Lot	—	—	—	—	—	—	2.9
Other Non-Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	200
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	197

Parking Lot	—	—	—	—	—	—	2.9
Other Non-Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	200
Annual	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	33
Parking Lot	—	—	—	—	—	—	0.48
Other Non-Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	33

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	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.56	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—
Landscape Equipment	0.07	0.01	0.85	< 0.005	< 0.005	< 0.005	2.3
Total	0.68	0.01	0.85	< 0.005	< 0.005	< 0.005	2.3
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.56	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—
Total	0.61	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.10	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—
Landscape Equipment	0.01	< 0.005	0.11	< 0.005	< 0.005	< 0.005	0.26
Total	0.12	< 0.005	0.11	< 0.005	< 0.005	< 0.005	0.26

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	8.9
Parking Lot	—	—	—	—	—	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	8.9
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	8.9
Parking Lot	—	—	—	—	—	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	8.9
Annual	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	1.5
Parking Lot	—	—	—	—	—	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	1.5

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	23

Parking Lot	—	—	—	—	—	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	23
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	23
Parking Lot	—	—	—	—	—	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	23
Annual	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	3.7
Parking Lot	—	—	—	—	—	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	3.7

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	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	0.19
Total	—	—	—	—	—	—	0.19
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	0.19
Total	—	—	—	—	—	—	0.19
Annual	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	0.03
Total	—	—	—	—	—	—	0.03

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	ROG	NOx	CO	SO2	PM10T	PM2.5T	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	ROG	NOx	CO	SO2	PM10T	PM2.5T	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	ROG	NOx	CO	SO2	PM10T	PM2.5T	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	ROG	NOx	CO	SO2	PM10T	PM2.5T	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	ROG	NOx	CO	SO2	PM10T	PM2.5T	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	ROG	NOx	CO	SO2	PM10T	PM2.5T	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

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	3/1/2027	3/12/2027	5.0	10.0	—
Grading	Grading	3/13/2027	3/26/2027	5.0	10.0	—
Building Construction	Building Construction	3/27/2027	1/28/2028	5.0	220	—
Paving	Paving	1/29/2028	2/11/2028	5.0	10.0	—
Architectural Coating	Architectural Coating	2/12/2028	3/10/2028	5.0	20	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Crawler Tractors	Diesel	Average	1.00	8.0	87	0.43
Site Preparation	Graders	Diesel	Average	1.00	8.0	148	0.41
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Average	0.00	8.0	84	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.0	367	0.40
Grading	Graders	Diesel	Average	1.00	8.0	148	0.41
Grading	Tractors/Loaders/Back hoes	Diesel	Average	0.00	8.0	84	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.0	367	0.40
Grading	Crawler Tractors	Diesel	Average	1.00	8.0	87	0.43

Building Construction	Forklifts	Diesel	Average	2.0	8.0	82	0.20
Building Construction	Cranes	Diesel	Average	1.00	8.0	367	0.29
Building Construction	Tractors/Loaders/Back hoes	Diesel	Average	2.0	8.0	84	0.37
Paving	Pavers	Diesel	Average	1.00	8.0	81	0.42
Paving	Rollers	Diesel	Average	1.00	8.0	36	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	4.0	8.0	10.0	0.56
Paving	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.0	84	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.0	37	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	Worker	7.5	19	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10	HHDT,MHDT
Site Preparation	Hauling	0.00	20	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	Worker	7.5	19	LDA,LDT1,LDT2
Grading	Vendor	—	10	HHDT,MHDT
Grading	Hauling	0.00	20	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	Worker	5.4	19	LDA,LDT1,LDT2
Building Construction	Vendor	1.6	10	HHDT,MHDT
Building Construction	Hauling	0.00	20	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	Worker	18	19	LDA,LDT1,LDT2

Paving	Vendor	—	10	HHDT,MHDT
Paving	Hauling	0.00	20	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	Worker	1.1	19	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10	HHDT,MHDT
Architectural Coating	Hauling	0.00	20	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	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)
Architectural Coating	53,156	17,719	0.00	0.00	314

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	35	0.00	0.00
Grading	0.00	0.00	140	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.29

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
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Water Exposed Area	3	74%	74%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Paving	Single Family Housing	0.15	0%
Paving	Parking Lot	0.08	100%
Paving	Other Non-Asphalt Surfaces	0.04	0%
Paving	Single Family Housing	0.01	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2027	0.00	346	0.03	< 0.005
2028	0.00	346	0.03	< 0.005

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	127	133	119	46,289	1,733	1,808	1,617	630,430
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Single Family Housing	4.8	12	9.4	2,372	63	157	123	31,028

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Single Family Housing	Wood Fireplaces	0	0
Single Family Housing	Gas Fireplaces	0	0
Single Family Housing	Propane Fireplaces	0	0
Single Family Housing	Electric Fireplaces	0	0
Single Family Housing	No Fireplaces	30	30
Single Family Housing	Conventional Wood Stoves	0	0
Single Family Housing	Catalytic Wood Stoves	0	0
Single Family Housing	Non-Catalytic Wood Stoves	0	0
Single Family Housing	Pellet Wood Stoves	0	0
Parking Lot	Wood Fireplaces	0	0
Parking Lot	Gas Fireplaces	0	0
Parking Lot	Propane Fireplaces	0	0
Parking Lot	Electric Fireplaces	0	0
Parking Lot	No Fireplaces	0	0
Parking Lot	Conventional Wood Stoves	0	0
Parking Lot	Catalytic Wood Stoves	0	0
Parking Lot	Non-Catalytic Wood Stoves	0	0
Parking Lot	Pellet Wood Stoves	0	0
Other Non-Asphalt Surfaces	Wood Fireplaces	0	0
Other Non-Asphalt Surfaces	Gas Fireplaces	0	0
Other Non-Asphalt Surfaces	Propane Fireplaces	0	0
Other Non-Asphalt Surfaces	Electric Fireplaces	0	0
Other Non-Asphalt Surfaces	No Fireplaces	0	0
Other Non-Asphalt Surfaces	Conventional Wood Stoves	0	0

Other Non-Asphalt Surfaces	Catalytic Wood Stoves	0	0
Other Non-Asphalt Surfaces	Non-Catalytic Wood Stoves	0	0
Other Non-Asphalt Surfaces	Pellet Wood Stoves	0	0
Single Family Housing	Wood Fireplaces	0	0
Single Family Housing	Gas Fireplaces	0	0
Single Family Housing	Propane Fireplaces	0	0
Single Family Housing	Electric Fireplaces	0	0
Single Family Housing	No Fireplaces	0	0
Single Family Housing	Conventional Wood Stoves	0	0
Single Family Housing	Catalytic Wood Stoves	0	0
Single Family Housing	Non-Catalytic Wood Stoves	0	0
Single Family Housing	Pellet Wood Stoves	0	0

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)
undefined	53,156	17,719	0.00	0.00	314

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)
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Single Family Housing	193,137	346	0.0330	0.0040	0.00
Parking Lot	3,053	346	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00
Single Family Housing	13,795	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)
Single Family Housing	525,359	125,947
Parking Lot	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00
Single Family Housing	37,526	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	11	0.00
Parking Lot	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00
Single Family Housing	0.80	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
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Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.5	2.5	10.0
Single Family Housing	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	R-410A	2,088	< 0.005	2.5	2.5	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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

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
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5.18.1.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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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	13	annual days of extreme heat
Extreme Precipitation	4.3	annual days with precipitation above 20 mm
Sea Level Rise	—	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 $\frac{3}{4}$ 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 (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

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	1	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	1	1	1	2
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	55
AQ-PM	84
AQ-DPM	50
Drinking Water	55
Lead Risk Housing	30
Pesticides	0.00
Toxic Releases	98
Traffic	28
Effect Indicators	—
CleanUp Sites	38
Groundwater	26
Haz Waste Facilities/Generators	82
Impaired Water Bodies	0.00
Solid Waste	78
Sensitive Population	—
Asthma	44
Cardio-vascular	25
Low Birth Weights	52
Socioeconomic Factor Indicators	—

Education	39
Housing	17
Linguistic	41
Poverty	14
Unemployment	13

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	75.23418452
Employed	91.91582189
Median HI	83.48517901
Education	—
Bachelor's or higher	69.75490825
High school enrollment	20.46708585
Preschool enrollment	88.09187733
Transportation	—
Auto Access	77.83908636
Active commuting	42.42268703
Social	—
2-parent households	73.72000513
Voting	62.91543693
Neighborhood	—
Alcohol availability	21.32683177
Park access	81.35506224
Retail density	54.36930579
Supermarket access	11.58732196

Tree canopy	18.32413705
Housing	—
Homeownership	63.41588605
Housing habitability	74.66957526
Low-inc homeowner severe housing cost burden	93.34017708
Low-inc renter severe housing cost burden	46.04131913
Uncrowded housing	41.84524573
Health Outcomes	—
Insured adults	61.8760426
Arthritis	71.8
Asthma ER Admissions	63.5
High Blood Pressure	77.3
Cancer (excluding skin)	38.7
Asthma	72.9
Coronary Heart Disease	74.7
Chronic Obstructive Pulmonary Disease	71.2
Diagnosed Diabetes	82.1
Life Expectancy at Birth	56.2
Cognitively Disabled	50.3
Physically Disabled	91.7
Heart Attack ER Admissions	61.3
Mental Health Not Good	69.9
Chronic Kidney Disease	79.8
Obesity	83.6
Pedestrian Injuries	46.5
Physical Health Not Good	74.9
Stroke	80.6
Health Risk Behaviors	—

Binge Drinking	15.4
Current Smoker	66.4
No Leisure Time for Physical Activity	67.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	39.2
Elderly	65.5
English Speaking	63.5
Foreign-born	39.1
Outdoor Workers	68.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	28.8
Traffic Density	48.1
Traffic Access	23.0
Other Indices	—
Hardship	28.3
Other Decision Support	—
2016 Voting	78.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	37
Healthy Places Index Score for Project Location (b)	79
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

8.1. Justifications

Screen	Justification
Land Use	Adjusted based on information provided on the Site Plan.
Construction: Construction Phases	The construction schedule is confirmed by the client.
Construction: Off-Road Equipment	Assumed all construction will be utilized 8 hours per work day. Replaced Tractors/Loaders/Backhoes with Crawler Tractors in the Site Preparation and Grading Phases.
Construction: Dust From Material Movement	Adjusted based on the grading information provided by the client.
Operations: Vehicle Data	Adjusted rates for Weekday Trips, Saturday Trips, and Sunday Trips to match ITE 12th Edition trip rates for 210-Single-Family Detached Housing and 223- Affordable Housing-Income Limits.
Operations: Hearths	Fireplaces and Wood Stoves are removed in accordance with SCAQMD Rule 445.
Operations: Energy Use	Since the Project does not include natural gas, the estimated natural gas consumption is converted to electricity-equivalent using a factor of 0.18 and added to the electricity consumption, based on the American Gas Association (AGA) 2022, Comparison of Home Appliance Energy Use, Operating Costs, and Carbon Dioxide Emissions – 2022 Update.

ATTACHMENT B: CALCULATION DETAILS SHEETS

Construction Emissions

Construction Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NOx	CO	SOx	PM ₁₀	PM _{2.5}
2027 (Year 1)						
Site Preparation	1.47	12.65	13.28	0.02	2.71	1.51
Off-Road	1.45	12.63	12.96	0.02	0.63	0.58
Dust From Material Movement					1.98	0.91
Off-Site (Worker Trip)	0.02	0.02	0.32	0.00	0.10	0.02
Grading	1.47	12.65	13.28	0.02	2.71	1.51
Off-Road	1.45	12.63	12.96	0.02	0.63	0.58
Dust From Material Movement					1.98	0.91
Off-Site (Worker Trip)	0.02	0.02	0.32	0.00	0.10	0.02
Building Construction	0.71	6.57	9.24	0.02	0.33	0.25
Off-Road	0.69	6.51	8.94	0.02	0.25	0.23
Onsite Truck	0.00	0.00	0.00	0.00	0.00	0.00
Off-Site (Worker Trip)	0.02	0.02	0.27	0.00	0.07	0.02
Off-Site (Vendor Trip)	0.00	0.05	0.02	0.00	0.01	0.00
Maximum Daily Emissions (2027)	1.47	12.65	13.28	0.02	2.71	1.51
2028(Year 2)						
Building Construction	0.68	6.16	9.19	0.02	0.31	0.23
Off-Road	0.67	6.10	8.95	0.02	0.22	0.20
Onsite Truck	0.00	0.00	0.00	0.00	0.00	0.00
Off-Site (Worker Trip)	0.01	0.02	0.22	0.00	0.07	0.02
Off-Site (Vendor Trip)	0.00	0.05	0.02	0.00	0.01	0.00
Paving	0.63	4.92	6.95	0.01	0.41	0.22
Off-Road	0.56	4.87	6.25	0.01	0.19	0.17
Paving	0.02					
Off-Site (Worker Trip)	0.05	0.05	0.70	0.00	0.23	0.05
Architectural Coating	8.43	1.08	1.53	0.00	0.03	0.02
Off-Road	0.14	1.08	1.49	0.00	0.02	0.02
Architectural Coating	8.29					
Off-Site (Worker Trip)	0.00	0.00	0.04	0.00	0.01	0.00
Maximum Daily Emissions (2028)	8.43	6.16	9.19	0.02	0.41	0.23
Maximum Daily Emissions	8.43	12.65	13.28	0.02	2.71	1.51
SCAQMD Thresholds	75	100	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

Notes: ROG = reactive organic gases, NOx = nitrogen oxides, CO = carbon monoxide, SOx = sulfur oxides, PM₁₀ = particulate matter 10 microns in diameter, PM_{2.5} = particulate matter 2.5 microns in diameter

Source: CalEEMod Output Sheets.

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Construction Equipment Modeled in CalEEMod and Acres Disturbed Per Day

Activity	Equipment Type	Equipment Quantity	Operating Hours per Day	Acres Disturbed per Piece of Equipment per Day	Acres Disturbed per Day
Site Preparation	Crawler Tractors	1	8	0.5	0.5
	Graders	1	8	0.5	0.5
	Rubber Tired Dozers	1	8	0.5	0.5
Total Acres Disturbed Per Day					1.5
Grading	Graders	1	8	0.5	0.5
	Rubber Tired Dozers	1	8	0.5	0.5
	Crawler Tractors	1	8	0.5	0.5
Total Acres Disturbed Per Day					1.5
Maximum Acres Disturbed Per Day					1.5

Source: CalEEMod Output Sheets.

Localized Construction Emission Estimates

Construction Activity	Maximum Daily Localized Emissions			
	(pounds/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
2027 (Year 1)				
Site Preparation	12.63	12.96	2.61	1.48
Grading	12.63	12.96	2.61	1.48
Building Construction	6.51	8.94	0.25	0.23
Maximum On-site Emission (2027)	12.63	12.96	2.61	1.48
2028 (Year 2)				
Building Construction	6.10	8.95	0.22	0.20
Paving	4.87	6.25	0.19	0.17
Architectural Coating	1.08	1.49	0.02	0.02
Maximum On-site Emission (2028)	6.10	8.95	0.22	0.20
Maximum Daily Emissions	12.63	12.96	2.61	1.48
SCAQMD Screening Thresholds	81.00	485.00	4.00	3.00
Threshold Exceeded?	No	No	No	No