APPENDIX A

AQ, Energy, and GHG Impact Analysis

To:	Liza Debies, CSG Consultants, Inc.
From:	Elaina Chambers, Alex J. Garber, EPD Solutions, Inc.
Date:	12/19/2024
Re:	Air Quality, Energy, and Greenhouse Gas Impact Analysis for Palos Verdes Estates Housing Element Project, EPD Project Number 24-103

This technical memorandum presents an analysis of the air quality, energy, and greenhouse gas (GHG) impacts for the Palos Verdes Estates Housing Element (proposed Project). The Project includes three sites: Malaga Cove (Project Site 1), Lunada Bay (Project Site 2), and First Church of Christ, Scientist (Project Site 3). The three Project sites are located at 316 and 304 Tejon Place (Project Site 1), 2325 Palos Verdes Drive West (Project Site 2), and 4010 Palos Verdes Drive North (Project Site 3), in the City of Palos Verdes Estates (City). The Project sites encompass five parcels identified as Assessor's Parcel Numbers (APNs) 7539-016-018 and 7539-016-018 totaling 0.68 acres for Project Site 1, APN 7542-015-025 totaling 0.68 acres for Project Site 2, and APNs 7538-027-010 and 7538-027-009 totaling 4.63 acres for Project Site 3, for a total of 5.99 acres between all three sites. The proposed Project sites are shown in Figure 1, 2, and 3, for Project Sites 1, 2, and 3, respectively.

On Project Site 1 and 2 there is existing operations including 15,450 square foot (SF) of offices and 36,478 SF of commercial shops and offices respectively. For a conservative analysis, these existing buildings on Sites 1 and 2 were analyzed to be demolished, without taking any credit for existing operational emissions. The building on Project Site 3 totaling 12,082 SF would not be demolished and would remain on-site during construction. The Project analyzes the development of the three sites with three residential multi-family buildings.

The Project analyzes a total of 156 dwelling units (DU), with 74 moderate and above moderate (M/AM) income level DUs, and 82 low and very low (L/VL) income level DUs across all three Project sites. The proposed Project site locations are shown in Figures 1, 2, and 3 for Project Sites 1, 2, and 3, respectively, included at the end of this document.

To support the CEQA document, this report analyzes the proposed Project's construction and operational impacts to air quality (emission of criteria pollutants), energy usage, and GHGs using the California Emissions Estimator Model (CalEEMod Version 2022.1) land use emission model and Emission Factor (EMFAC Version 2021) model.

Figure 1: Project Site 1 – Malaga Cove

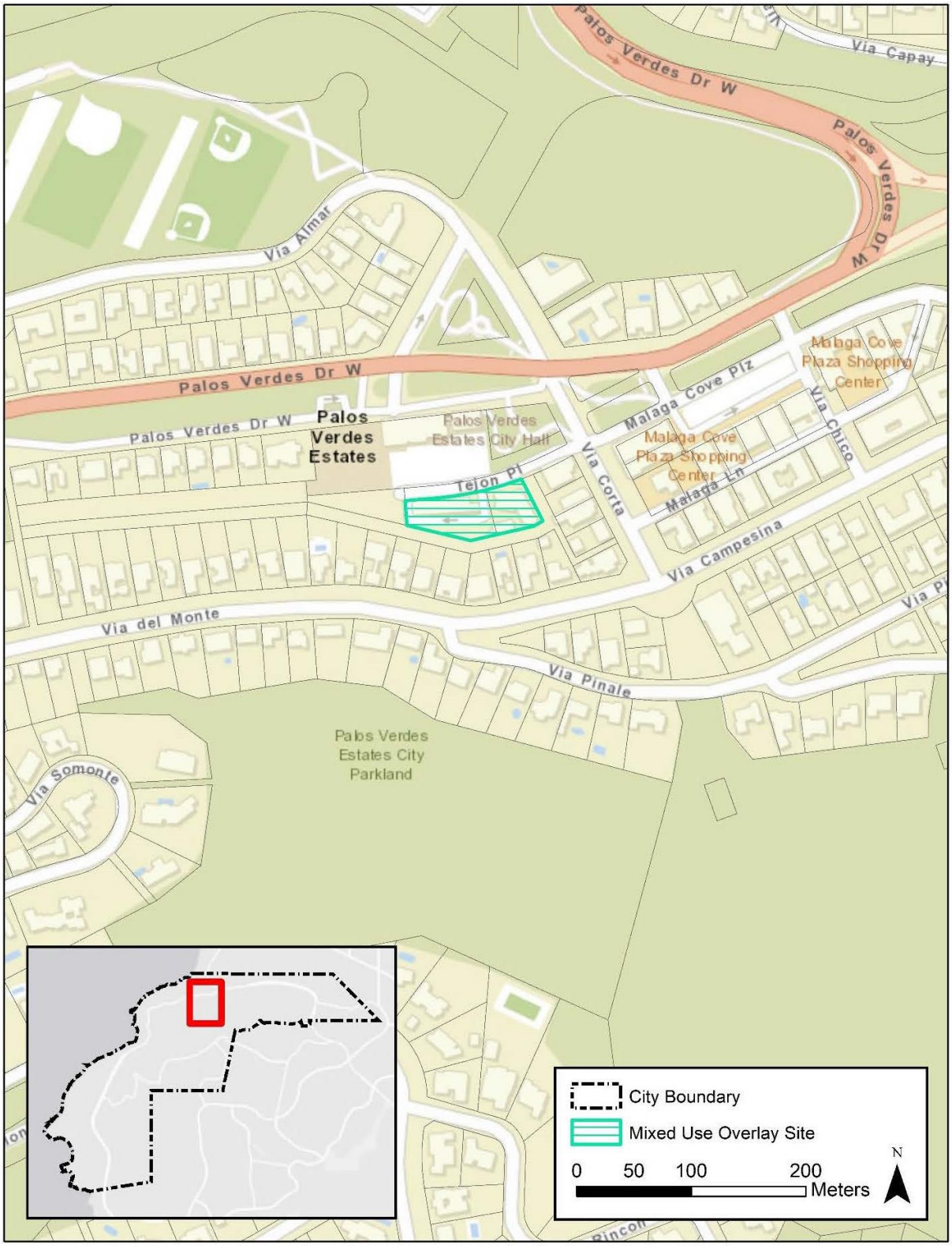


Figure 2: Project Site 2 – Lunada Bay

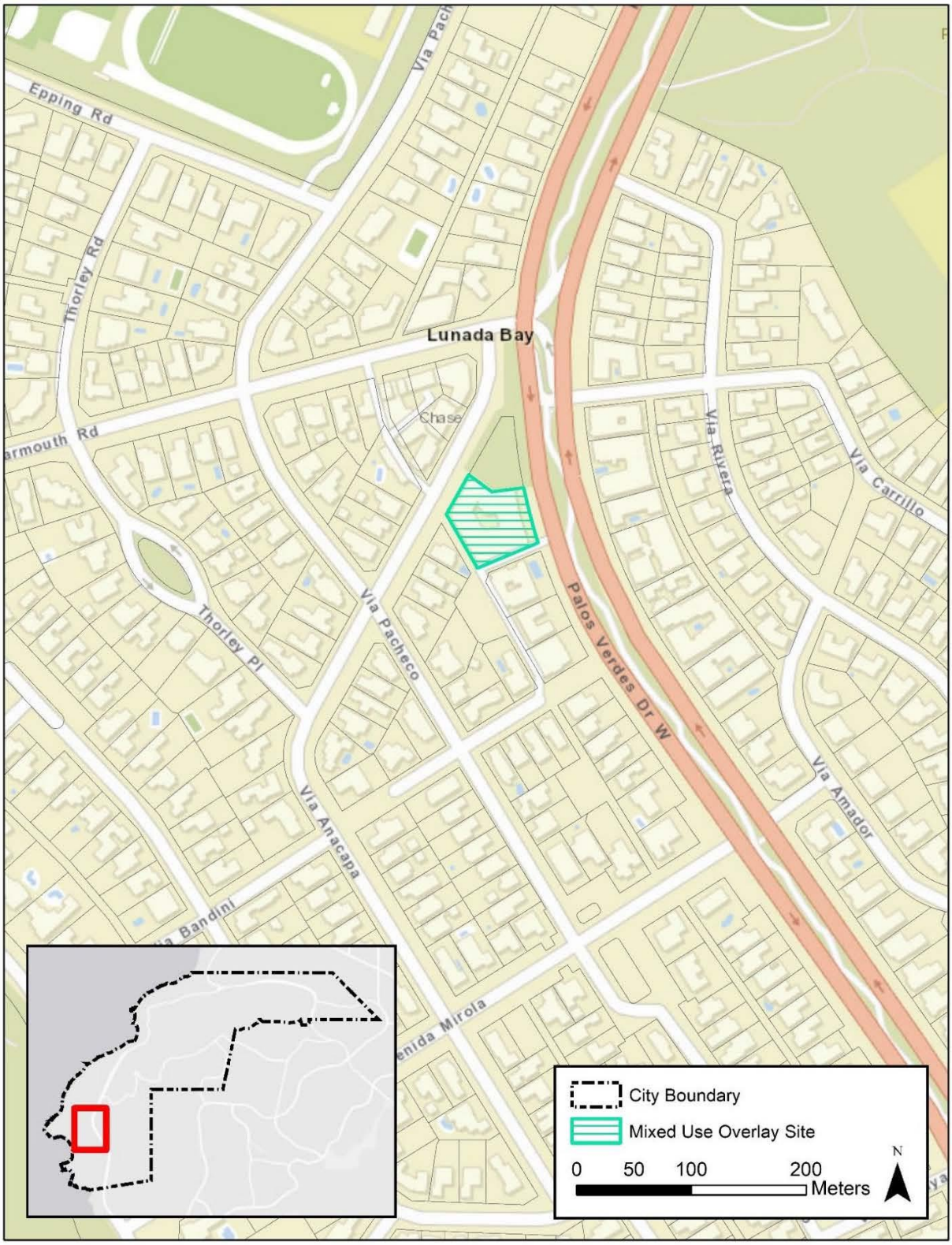
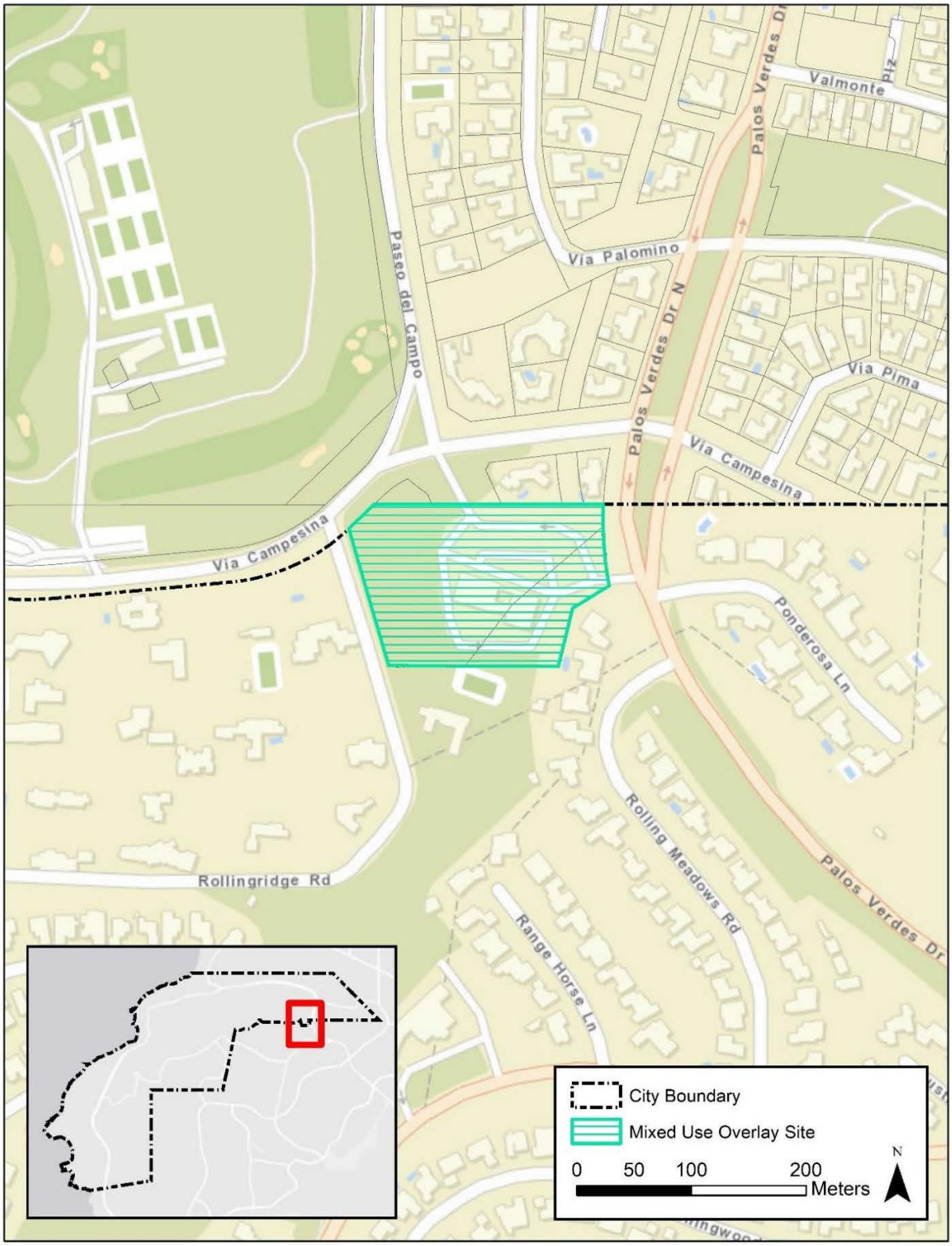


Figure 3: Project Site 3 – First Church of Christ, Scientist



Summary of Air Quality, Energy, and GHG Impacts

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:* Reduce emission production 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 individual construction activities, as well as the individual and combined site operational activities of the proposed development would also comply with applicable SCAQMD rules and regulations and not exceed any criteria pollutant thresholds. Additionally, all three of the proposed Project sites would be consistent with SCAQMD'S 2022 AQMP, reflecting adherence to regional air quality management goals and standards. Finally, odors produced during construction would be temporary and not significantly objectionable, and during operation, the proposed Project involves land uses that typically do not generate significant odor complaints and would comply with SCAQMD Rule 402. Therefore, the proposed Project would result in less-than-significant air quality impacts.

Energy

The proposed Project's energy consumption for construction activities related to redevelopment of the site for the new residential uses would be conditioned to require compliance with existing fuel standards, machinery efficiency standards, and California Air Resources Board (CARB) requirements that limit idling of trucks. The Project would comply with the State CEQA Guidelines for energy consumption thresholds (a) concerning wasteful, inefficient and overconsumption of energy in projects, and (b) project design impeding renewable energy development growth, respectively:

(a) Construction activities related to the proposed Project and the associated infrastructure are not expected to result in demand for fuel greater on a per-unit-of-development basis than any other development projects in Southern California

(b) The proposed Project would be required to meet the CCR Title 24 energy efficiency standards, comply with all applicable City energy codes and the Project buildings would install photovoltaic solar panels on all proposed multi-family residences in compliance with current Title 24 requirements. Therefore, the Project would not inhibit the use of and would allow for future flexibility relating to renewable energy.

The operation of the Project would also be similar to other residential projects within the City and would comply with Title 24 and all applicable City business and energy codes and ordinances. The Project's energy consumption for construction activities related to redevelopment of the sites for the new residential elements would be permitted to require compliance with existing fuel standards, machinery efficiency standards, and CARB requirements that limit idling of trucks. Through compliance with existing standards, the Project would not result in a fuel demand on a per-development basis that is greater than other development projects in Southern California. There are no unusual Project characteristics that would cause the use of construction equipment that would be less energy efficient compared with other similar construction sites in other parts of the state. Therefore, the construction and operation of the Project sites would result in a less-than-significant impact related to inefficient, wasteful, or unnecessary energy use, and no mitigation would be required.

GHG Emissions

The proposed Project's total construction and operational GHG emissions for Project Sites 1, 2, and 3 would total 1,146 metric tons of carbon dioxide equivalent ($MTCO_2e$), which is below the SCAQMD's significance threshold of 3,000 $MTCO_2e$ per year. Additionally, the proposed Project would be consistent with the City's GHG reduction plans and policies within the General Plan and the 2022 Scoping Plan. Therefore, the Project would have a less-than-significant impact on GHG emissions.

Project Site 1: Malaga Cove

Project Site 1, Malaga Cove, is located at 316 and 304 Tejon Place in Palos Verdes Estates. The site is 0.68 acres and is made up of 2 parcels, identified as APN 7539-016-018 and APN 7539-016-018. Project Site 1 is the northernmost site within the Project, and it contains two 1 and 2 -story office buildings totaling 15,450 square feet for an FAR of 0.52. This site is the westernmost portion of the Malaga Cove area. Table 1, *Project Site 1 Construction Schedule*, shows an estimated construction schedule, assuming a Project specific development would be ready for construction by the fourth quarter of 2025. Construction would be expected to last approximately 6 months.

Table 1: Project Site 1 Construction Schedule

Activity	Start Date	End Date	Total Working Days
Demolition	12/1/2025	12/15/2025	10
Site Preparation	12/16/2025	12/17/2025	1
Grading	12/18/2025	12/20/2025	2
Building Construction	12/21/2025	5/10/2026	100
Paving	5/11/2026	5/18/2026	5
Architectural Coating	5/19/2026	5/26/2026	5

Source: CalEEMod Output Sheets (see Attachment A).

Air Quality

Methodology and Model Inputs

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 Project site acreage.
- Construction: It was assumed that all equipment would be used for 8 hours per workday. Tractors/loaders/backhoes were replaced with crawler tractors in the site preparation and grading phases.
- Demolition: The demolition of the existing buildings and hardscape is anticipated to amount to 2,554 tons of debris. See Attachment E for demolition calculations.
- Operations: Trip rates for Apartments Mid Rise were adjusted to match the ITE *Trip Generation Manual 11th Edition* rates for Affordable Housing and Multifamily Housing (Mid-Rise).
- 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 VOCs. Gas and propane fireplaces were removed as neither are anticipated for the future residential developments.

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

Regional Emissions

The SCAQMD has adopted maximum daily emission thresholds (pounds/day) for criteria pollutants during construction and operation of a project.[1] 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. These emission thresholds apply to 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). The regional thresholds for criteria pollutants are listed in Tables 2, 3, and 5 along with the CalEEMod estimated Project Site 1 emissions. To calculate the operational impacts, the air quality emissions for the land use were estimated using CalEEMod and no credit was taken for the existing office or commercial buildings on the site. As shown in Table 2 and 3, Project Site 1 would generate emissions below the SCAQMD construction and operational thresholds, and therefore result in less-than-significant regional construction and operational air quality impacts.

Table 2: Project Site 1 Regional Construction Emission Estimates

Construction Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
2025						
Demolition	1.5	18.5	15.9	0.1	5.5	1.4
Site Preparation	0.7	5.6	6.4	<0.1	0.7	0.4
Grading	1.6	14.7	14.1	<0.1	2.8	1.6
Building Construction	0.8	7.6	10.1	<0.1	0.6	0.4
Maximum Daily Emissions 2025	1.6	18.5	15.9	0.1	5.5	1.6
2026						
Building Construction	0.8	7.1	10.2	<0.1	0.5	0.3
Paving	0.7	5.2	7.4	<0.1	0.4	0.3
Architectural Coating	24.4	1.2	1.7	<0.1	0.1	<0.1
Maximum Daily Emissions 2026	24.4	18.5	15.9	<0.1	5.5	1.6
Maximum Daily Emission 2025-2026	**24.4**	**18.5**	**15.9**	**0.1**	**5.5**	**1.6**
SCAQMD Significance 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, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter, PM2.5 = particulate matter 2.5 microns in diameter
Source: Site 1 Malaga Cove CalEEMod Output Sheets (see Attachment A).

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

Table 3: Project Site 1 Regional Operational Emission Estimates

Operational Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Mobile	0.3	0.3	3.0	<0.1	0.7	0.2
Area	0.6	<0.1	1.5	<0.1	<0.1	<0.1
Energy	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Total Project Operational Emissions	**0.9**	**0.3**	**4.5**	**<0.1**	**0.7**	**0.2**
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, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter, PM2.5 = particulate matter 2.5 microns in diameter
Source: Site 1 Malaga Cove CalEEMod Output Sheets (see Attachment A).

Local Emissions

Localized significance thresholds (LSTs) were also adopted by the SCAQMD due to project-related construction or operational 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 or operational emissions from a project site that would not exceed a national or State ambient air quality standard.[2] The differences between regional thresholds and LSTs are as follows:

1. Regional thresholds include all sources of project construction and operational emissions generated from on-site and off-site emission sources whereas the LSTs only consider the emissions generated from on-site emission sources.
2. LSTs only apply to carbon monoxide (CO), nitrogen oxides (NO_X), and particulate matter (PM_{10} and $PM_{2.5}$), while regional thresholds include both reactive organic gases (ROG) and sulfur dioxide (SO_2).
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 A of the SCAQMD *2008 Final Localized Significance Threshold Methodology*) for projects that disturb less than or equal to *5* acres in a day.[3] These tables were created to easily determine if the daily emissions of NO_X, CO, PM_{10}, 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 (all three Project sites are located within SRA 3, Southwest Los Angeles County Coastal);

[2] SCAQMD. (2008). *Final Localized Significance Threshold Methodology*. http://www.aqmd.gov/docs/defaultsource/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf.
[3] SCAQMD. (2008). *Final Localized Significance Threshold Methodology Appendix C*. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2.

- Size of grading disturbance (construction)/size of the project (operation); and
- 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.

Table 4 shows the amount of ground disturbance that would occur during the demolition, site preparation, and grading phases for construction of Project Site 1. Table 5 shows the estimated maximum daily construction emissions and thresholds for the proposed Project Site 1.

As can be seen in Table 4, the phase with the most ground disturbance for Project Site 1 would be the grading phase, with a maximum of 1.5 acres of ground disturbance per day. However, as the site is confined to 0.68 acres, no more than 1 acre would be disturbed on any one day during construction. Thus, the 1-acre LSTs have been used for construction emissions as the lowest threshold provided by SCAQMD for the size of Project Site 1.[4] Distance to the nearest sensitive receptor also determines the emission thresholds. The sensitive receptors closest to Project Site 1 includes residential homes about 10.5 meters (34 feet) south of the site's boundary; therefore, the construction emission threshold for 25 meters was used, as the lowest threshold provided. As shown in Table 5, Project Site 1 would not exceed the SCAQMD LST construction emission thresholds and would therefore have a less-than-significant localized construction air quality impact.

Table 4: Construction Equipment and Acres Disturbed per Day for Project Site 1

Activity	Equipment Type	Equipment Quantity	Operating Hours per Day	Acres Disturbed per piece of Equipment per Day	Acres Disturbed per Day
Demolition	Rubber Tired Dozers	1	8	0.5	0.5
	Concrete/Industrial Saws	1	8	0	0
	Tractors/Loaders/Backhoes	2	8	0	0
				Total Acres Disturbed Per Day	0.5
Site Preparation	Graders	1	8	0.5	0.5
	Tractors/Loaders/Backhoes	0	8	0	0
	Crawler Tractors	1	8	0.5	0.5
				Total Acres Disturbed Per Day	1.0
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
	Tractors/Loaders/Backhoes	0	8	0	0
				Total Acres Disturbed Per Day	1.5
				Maximum Acres Disturbed Per Day	**1.5**

Source: Site 1 Malaga Cove CalEEMod Output Sheets (see Attachment A).

[4] SCAQMD. (2011) *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. https://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf*

Table 5: Localized Construction Emission Estimates for Project Site 1

Construction Activity	Maximum Daily Localized Emissions (pounds/day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
2025				
Demolition	12.8	13.2	4.2	1.0
Site Preparation	5.6	6.1	0.6	0.4
Grading	14.7	13.6	2.7	1.6
Building Construction	7.3	9.0	0.3	0.3
Maximum Daily Emissions 2025	**14.7**	**13.6**	**4.2**	**1.6**
2026				
Building Construction	6.9	9.0	<0.1	0.3
Paving	5.1	6.2	0.2	0.2
Architectural Coating	1.1	1.5	<0.1	<0.1
Maximum Daily Emissions 2026	**6.9**	**9.0**	**0.2**	**0.3**
Maximum Daily Emission 2025-2026	**14.7**	**13.6**	**4.2**	**1.6**
SCAQMD Significance Thresholds	91	664	5	3
Threshold Exceeded?	**No**	**No**	**No**	**No**

Notes: NO_X = nitrogen oxides, CO = carbon monoxide, PM_{10} = particulate matter 10 microns in diameter, $PM_{2.5}$ = particulate matter 2.5 microns in diameter.
Source: Site 1 Malaga Cove CalEEMod Output Sheets (see Attachment A).

According to the SCAQMD LST methodology, LSTs apply to a project's stationary sources and onsite mobile emissions.[5] 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 potential land use at Project Site 1 is anticipated to not involve vehicles idling or queueing for long periods of time. Therefore, due to the lack of significant stationary source emissions, impacts related to operational localized significance thresholds are presumed to be less than significant and an operational LST analysis was dismissed for the site.

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

Energy

Thresholds

The State CEQA Guidelines do not have specific thresholds for energy consumption. Rather, the question in Appendix G: VI Energy (a) asks, "[Would the proposed Project] Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?" and in (b) asks "[Would the project] Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?"[6] Therefore, for the purpose of this analysis, a significant impact would occur if:

(a) The project design and/or location encourages wasteful, inefficient, and unnecessary consumption of energy, especially fossil fuels such as coal, natural gas, and petroleum, as well as the use of fuel by vehicles anticipated to travel to and from the project.
(b) The project design impedes the growth of future renewable energy developments.

Threshold (a) is analyzed in this analysis for each Project Site independently, and both thresholds are analyzed for the Project as a whole under the *Project Sites Total* section at the end of this report.

Methodology

Southern California Edison and Southern California Gas Company would provide electricity and natural gas respectively for construction and operation of the proposed Project Site 1. The following assumptions were used to calculate the energy (electricity, natural gas, and petroleum) consumption of Project Site 1:

- Construction equipment fuel consumption was derived from the CARB OffRoad2021 emission model.
- Fuel consumption from vehicle travel was derived from the CARB EMFAC2021 emission model.
- Electrical and natural gas usage was derived from CalEEMod Version 2022.1.

Energy Consumption

Construction

Electricity and Natural Gas Usage

Due to Project Site 1's size and the fact that construction is temporary, the electricity used during construction of Project Site 1 would be substantially less than that required for its operation and would have a negligible contribution to the Project's overall energy consumption. The electric power used would be for as-necessary lighting and electronic equipment such as computers inside temporary construction trailers. Natural gas is not anticipated to be needed for construction activities. Any consumption of natural gas would be minor and negligible in comparison to the usage during the operation of the site.

Petroleum Fuel Usage

The equipment associated with construction activities (off-road/heavy duty vehicles) would rely on diesel fuel as would vendor and haul trucks involved in delivering building materials and removing the demolition debris from Project Site 1. Construction workers would travel to and from the site throughout the duration of construction, and for a conservative analysis, it is assumed that construction workers would travel in gasoline-powered passenger vehicles. Table 6 lists the total fuel consumption and horsepower-hour data contained

[6] California Energy Commission. (2023). *CEQA Statutes and Guidelines Attachment 10 Appendix G: Environmental Checklist Form*. https://www.energy.ca.gov/sites/default/files/2024-01/11_Attachment_10_-_Appendix_G_from_CEQA_Handbook_ada.docx

within the CARB OffRoad2021 emission model for specific types of diesel construction equipment during the construction phase total. It should be noted that the total fuel consumption is a conservative analysis and would likely overstate the amount of fuel usage, as specific construction equipment is not expected to operate during the entire duration of the construction activity (i.e., crane). Table 7 summarizes Project Site 1's construction vehicle fuel usage based on vehicle miles traveled and fuel usage factors contained in the CARB EMFAC2021. The trips included are worker vehicles, vendor vehicles, and haul vehicles. Table 8, *Project Site 1 Construction Fuel Usage,* shows the overall fuel consumption for Project construction.

Table 6: Construction Equipment Fuel Usage for Project Site 1

Activity	Equipment	Number of Equipment Per Day	Hours per day	Horse-power	Load Factor	Days of Construction	Total Horsepower-hours	Fuel Rate (gal/hp-hr)	Fuel Use (gallons)
Demolition	Concrete/Industrial Saws	1	8	33	0.73	10	1,927	0.04200992	81
	Rubber Tired Dozers	1	8	367	0.4	10	11,744	0.04745478	557
	Tractors/Loaders/Backhoes	2	8	84	0.37	10	4,973	0.05312078	264
Site Preparation	Graders	1	8	367	0.4	1	1,174	0.051539291	61
	Crawler Tractors	1	8	84	0.37	1	249	0.05048826	13
Grading	Graders	1	8	148	0.41	2	971	0.05153929	50
	Rubber Tired Dozers	1	8	367	0.4	2	2,349	0.04745478	111
	Crawler Tractors	1	8	87	0.43	2	599	0.05048826	30
Building Construction	Cranes	1	8	367	0.29	100	26,240	0.05301236	1,397
	Forklifts	2	8	82	0.2	100	49,728	0.05325396	2,642
	Tractors/Loaders/Backhoes	2	8	84	0.37	100	1,361	0.05312078	70
Paving	Pavers	1	8	81	0.42	5	1,361	0.05151654	70
	Cement and Mortar Mixers	4	8	10	0.56	5	896	0.05312078	48
	Rollers	1	8	36	0.38	5	547	0.05259167	29
	Tractors/Loaders/Backhoes	1	8	84	0.37	5	1,243	0.05312078	66
Architectural Coating	Air Compressors	1	8	37	0.48	5	710	0.030007254	21
								Total	**9,954**

Source: Site 1 Malaga Cove CalEEMod Output Sheets, Fuel Calculation Sheets (see Attachment A, D)

Table 7: Project Site 1 Estimated Construction Vehicle Fuel Usage

Construction Source	Total Number of Trips	VMT	Fuel Rate	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
Haul Trucks	114	4,561	6.21	735	0
Vendor Trucks	400	8,160	8.98	909	0
Worker Vehicles	2,031	75,147	28.86	0	2,604
			Total	**1,643**	**2,604**

Source: Site 1 Malaga Cove CalEEMod Output Sheets, Fuel Calculation Sheets (see Attachment A, D).

Table 8: Project Site 1 Total Construction Fuel Usage

Construction Source	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
Construction Vehicles	1,643	2,604
Off-Road Construction Equipment	9,954	0
Total	**11,597**	**2,604**

Source: Site 1 Malaga Cove CalEEMod Output Sheets, Fuel Calculation Sheets (see Attachment A, D).

Operation

The operation of Project Site 1 would consume electricity, natural gas, and petroleum. The energy consumption can be found in Table 9, *Project Site 1 Annual Operational Energy Requirements*, below. Electricity and natural gas consumption can be found in the CalEEMod Output Sheets attached (Attachment A). The gasoline consumption rates utilize the same assumptions that were used for the worker vehicles. The potential land use at Project Site 1 is anticipated to utilize energy consistent with other similarly sized projects and would thus not constitute an inefficient use of energy. Therefore, the proposed Project would result in less-than-significant energy impacts without requiring mitigation.

Table 9: Project Site 1 Annual Operational Energy Requirements

Electricity (Kilowatt-Hours)	
75,988	
Natural Gas (Thousands British Thermal Units)	
222,137	
Petroleum (Gasoline) Consumption	
Annual VMT	Gallons of Gasoline Fuel
340,868	11,813

Source: Site 1 Malaga Cove CalEEMod Output Sheets (see Attachment A).

Further, seen in EPD Solution's *Palos Verdes Estates (PVE) Housing Element Vehicle Miles Traveled (VMT) Screening Analysis*, Site 1 would include housing in close proximity to employment opportunity land uses, and result in a less than significant VMT impact.

Future Renewable Energy

Project Site 1 would be required to meet the CCR Title 24 energy efficiency standards in effect during permitting of proposed Project and comply with all applicable City energy codes. The City's administration

of the CCR Title 24 requirements includes review of design components and energy conservation measures that occurs during the permitting process, which ensures that all requirements are met. Project Site 1's residential building would require solar installation in compliance with the current Title 24 requirements for multi-family housing. In addition, Project Site 1 design and operation would comply with State Building Energy Efficiency Standards, appliance efficiency regulations, and green building standards. As such, Project Site 1 would not inhibit the use of and would allow for future flexibility relating to renewable energy.

Conclusion

Project Site 1's energy consumption for construction activities related to redevelopment of the site with mixed-use residential and commercial uses would be required to comply with existing fuel standards, machinery efficiency standards, and CARB requirements that limit idling of trucks. The Project would comply with the State CEQA Guidelines for energy consumption thresholds (a), concerning wasteful, inefficient and overconsumption of energy in project: Construction activities related to the Project Site 1 and the associated infrastructure are not expected to result in demand for fuel greater on a per-unit-of-development basis than any other development projects in Southern California. Also, CCR Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than 5 minutes, thereby precluding unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment.

Through compliance with existing standards, Project Site 1 would not result in a demand for fuel greater on a per-development basis than other development projects in Southern California. There are no unusual site characteristics that would cause the use of construction equipment that would be less energy efficient compared with other similar construction sites in the state. The energy consumption for construction would also be temporary and localized. Energy consumption from the operation of the proposed Project is also similar to that of other mixed-use projects, and Project Site 1 would comply with Title 24 as well as all applicable City business and energy codes and ordinances. Further, seen in EPD Solution's Palos Verdes Estates (PVE) Housing Element Vehicle Miles Traveled (VMT) Screening Analysis, Site 1 would include housing in close proximity to employment opportunity land uses, and result in a less than significant VMT impact. Additionally, the development of the proposed project would comply with the Title 24 residential solar requirements and would also not interfere with the growth of future renewable energy infrastructure. Therefore, the construction and operation of Project Site 1 would result in a less-than-significant impact related to energy and no mitigation would be required.

Greenhouse Gas Emissions

Regulatory Background and Thresholds

California State Executive Order S-3-05, issued by Governor Arnold Schwarzenegger in June 2005, established comprehensive GHG reduction targets for the State.[7] It mandated reducing GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. This Executive Order laid the foundation for subsequent climate change mitigation efforts in California, including the development of various policies and programs aimed at reducing emissions across sectors such as transportation, energy, and industry. The objective of the Executive Order is to contribute to capping worldwide carbon dioxide (CO_2) concentrations at 450 ppm, stabilizing global climate change.

SCAQMD convened a GHG Emissions CEQA Significance Threshold Working Group to help lead agencies determine significance thresholds for GHG emissions when SCAQMD is not the lead agency. The last working group was held in September 2010 (Meeting No. 15) and proposed a tiered approach (Tier 1 to Tier 5), equivalent to the existing consistency determination requirements in CEQA Guidelines Sections 15064(h)(3), 15125(d), or 15152(a).[8] This assessment will apply the Tier 3 (Numerical Screening Thresholds) approach. Tier 3 consists of screening values which the lead agency can choose from, but it must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to the project's operational emissions. If a project's emissions are below one of the following screening thresholds, then the project impact would be less than significant:

- Option 1, all land use types: 3,000 $MTCO_2e$ per year
- Option 2, based on land use type:
    - Residential: 3,500 $MTCO_2e$ per year
    - Commercial: 1,400 $MTCO_2e$ per year
    - Mixed-use: 3,000 $MTCO_2e$ per year

The City has not adopted an option for GHG emission thresholds. Therefore, the recommended SCAQMD threshold of 3,000 $MTCO_2e$ per year seen in Option 1, for all land use types, is used in this analysis for all three Project sites as a more conservative threshold compared to Option 2's residential threshold.

Project GHG Emissions

Project Site 1's construction GHG emissions are shown in Table 10, *Project Site 1 Construction GHG Emissions*, and the site's overall construction and operational emissions are shown in Table 11, *Project Site 1 Total GHG Emissions*, below. These emissions were calculated using the CalEEMod model. The construction emissions are amortized over 30 years and added to the operational GHG emissions.[9] As shown in Table 11, Project Site 1's construction and operation GHG emissions would total 155 $MTCO_2e$ per year, which is below the SCAQMD significance threshold of 3,000 $MTCO_2e$ per year.

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[7] Executive Department State of California Executive Order S-3-05 https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/5129-5130.pdf

[8] SCAQMD. (2010). *Minutes of the GHG CEQA Significance Threshold Stakeholder Working Group #15*. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf.

[9] SCAQMD. (2008). *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf.

Table 10: Project Site 1 Construction GHG Emissions

Activity	Annual GHG Emissions ($MTCO_2e$)
2025	42
2026	97
Total Emissions	139
Total Emissions Amortized Over 30 Years	5

Source: Site 1 Malaga Cove CalEEMod Output Sheets (see Attachment A).

Table 11: Project Site 1 Total GHG Emissions

Activity	Annual GHG Emissions ($MTCO_2e$)
Mobile	119
Area	1
Energy	24
Water	2
Waste	5
Refrigerant	0
Total Project Site 1 Gross Operational Emissions	**150**
Project Site 1 Construction Emissions	5
Total Project Site 1 Emissions	**155**
Significance Threshold	3,000
Threshold Exceeded?	**No**

Source: Site 1 Malaga Cove CalEEMod Output Sheets (see Attachment A).

Conclusion

Project Site 1's construction and operational GHG emissions would total 155 $MTCO_2e$ per year, below the SCAQMD significance threshold of 3,000 $MTCO_2e$ per year. Therefore, Project Site 1 would have a less-than-significant impact on GHG emissions.

Project Site 2: Lunada Bay Patio

Project Site 2, the Lunada Bay Patio, is located at 2325 Palos Verdes Drive West within Palos Verdes Estates and consists of a single parcel, identified as APN 7542-015-025, totaling 0.68 acres. The site contains one building consisting of one story over one level of at-grade parking in a "podium" condition and two-story liner shops/offices. The building area is 36,478 square feet, which was analyzed to be demolished for a conservative analysis. Table 12, *Project Site 2 Construction Schedule*, shows an estimated construction schedule, assuming a Project specific development would be ready for construction by the fourth quarter of 2025. Construction would be expected to last approximately 6 months.

Table 12: Project Site 2 Construction Schedule

Activity	Start Date	End Date	Total Working Days
Demolition	12/1/2025	12/19/2025	15
Site Preparation	12/120/2025	12/22/2025	1
Grading	12/23/2025	12/24/2025	2
Building Construction	12/25/2025	5/13/2026	100
Paving	5/14/2026	5/20/2026	5
Architectural Coating	5/21/2026	5/27/2026	5

Source: Site 2 Lunada Bay CalEEMod Output Sheets (see Attachment B).

Air Quality

Methodology and Model Inputs

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 Project site acreage.
- Construction: Demolition was changed from 10 days to 15 days based on amount of debris anticipated.
- Construction: It was assumed that all equipment would be used for 8 hours per workday. Tractors/loaders/backhoes were replaced with crawler tractors in the site preparation and grading phases.
- Demolition: The demolition of the existing buildings and hardscape is anticipated to amount to 3,447 tons of debris. See Attachment E for demolition calculations.
- Operations: Adjusted trip rate for Apartments Mid Rise to match ITE 11th edition trip rate to match ITE 11th Edition rates for Affordable Housing and Multifamily Housing (Mid-Rise).
- 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 VOCs. Removed gas and propane fireplaces as neither are anticipated for the future residential developments.

The passenger vehicles were analyzed using the CalEEMod default trip distance information.

Regional Emissions

As mentioned previously, the SCAQMD has set maximum daily emission thresholds (pounds/day) for criteria pollutants during construction and operation phases of projects.[10] The Project's estimated emissions were calculated by using CalEEMod, and no credit was taken for the existing office or commercial buildings on the site. As shown in Table 13 and Table 14, Project Site 2 of the Project would generate emissions below the SCAQMD construction and operational regional thresholds, and therefore would result in less-than-significant regional construction and operational air quality impacts.

Table 13: Project Site 2 Regional Construction Emission Estimates

Construction Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2025						
Demolition	1.5	18.0	15.7	<0.1	5.1	1.4
Site Preparation	0.7	5.6	6.4	<0.1	0.7	0.4
Grading	1.6	14.7	14.1	<0.1	2.8	1.6
Building Construction	0.8	7.0	9.9	<0.1	0.5	0.3
Maximum Daily Emissions	1.6	18.0	15.7	<0.1	5.1	1.6
2026						
Building Construction	0.8	7.0	9.9	<0.1	0.5	0.3
Paving	0.7	5.2	7.4	<0.1	0.4	0.3
Architectural Coating	24.4	1.2	1.7	<0.1	0.1	<0.1
Maximum Daily Emissions	24.4	7.0	9.9	<0.1	0.5	0.3
Maximum Daily Emission 2025-2026	**24.4**	**18.0**	**15.7**	**<0.1**	**5.1**	**1.6**
SCAQMD Significance 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, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter, PM2.5 = particulate matter 2.5 microns in diameter
Source: Site 2 Lunada Bay CalEEMod Output Sheets (see Attachment B).

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

Table 14: Project Site 2 Regional Operational Emission Estimates

Operational Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Mobile	0.3	0.3	3.0	<0.1	0.7	0.2
Area	0.5	<0.1	1.1	<0.1	<0.1	<0.1
Energy	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Total Project Operational Emissions	**0.9**	**0.3**	**4.1**	**<0.1**	**0.7**	**0.2**
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, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter, PM2.5 = particulate matter 2.5 microns in diameter
Source: Site 2 Lunada Bay CalEEMod Output Sheets (see Attachment B).

Local Emissions

As explained previously in Project Site 1's analysis, the SCAQMD has established localized significance thresholds (LSTs). Emissions for CalEEMod Project Site 2 were evaluated, accounting for both on-site and off-site sources, and compared with the LSTs.

Table 15 shows the amount of ground disturbance that would occur during the demolition, site preparation, and grading phases for the construction of Project Site 2. Table 16 shows the estimated maximum daily construction emissions and thresholds for Project Site 2.

Similar to Project Site 1, the phase with the most ground disturbance for Project Site 2 would be the grading phase, with a maximum of 1.5 acres of ground disturbance per day. However, as the site is confined to 0.68 acres, no more than 1 acre would be disturbed on any one day during construction. Thus, the 1-acre LSTs have been used for construction emissions as the lowest threshold provided by SCAQMD for the size of Project Site 2.[11] Distance to the nearest sensitive receptor also determines the emission thresholds. The sensitive receptors closest to Project Site 2 includes residential homes about 7.8 meters (29 feet) south of the site's boundary; therefore, the construction emission threshold for 25 meters was used, as the lowest threshold provided. As shown in Table 16, Project Site 2 would not exceed the SCAQMD LST construction emission thresholds and would therefore have a less-than-significant localized construction air quality impact.

[11] SCAQMD. (2011) *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. https://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf*

Table 15: Construction Equipment Acres Disturbed per Day for Project Site 2

Activity	Equipment Type	Equipment Quantity	Operating Hours per Day	Acres Disturbed per piece of Equipment per Day	Acres Disturbed per Day
Demolition	Rubber Tired Dozers	1	8	0.5	0.5
	Concrete/Industrial Saws	1	8	0	0
	Tractors/Loaders/Backhoes	2	8	0	0
				Total Acres Disturbed Per Day	0.5
Site Preparation	Graders	1	8	0.5	0.5
	Tractors/Loaders/Backhoes	0	8	0	0
	Crawler Tractors	1	8	0.5	0.5
				Total Acres Disturbed Per Day	1.0
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
	Tractors/Loaders/Backhoes	0	8	0	0
				Total Acres Disturbed Per Day	1.5
				Maximum Acres Disturbed Per Day	**1.5**

Source: Site 2 Lunada Bay CalEEMod Output Sheets (see Attachment B).

Table 16: Localized Construction Emission Estimates for Project Site 2

Construction Activity	Maximum Daily Localized Emissions (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
2025				
Demolition	12.8	13.2	3.8	1.0
Site Preparation	5.6	6.1	0.6	0.4
Grading	14.7	13.6	2.7	1.6
Building Construction	6.9	17.9	0.6	0.5
Maximum Daily Emissions	14.7	17.9	3.8	1.6
2026				
Building Construction	6.9	9.0	<0.1	0.3
Paving	5.1	6.2	0.2	0.2
Architectural Coating	1.1	1.5	<0.1	<0.1
Maximum Daily Emissions	6.9	9.0	0.2	0.3
Maximum Daily Emission 2025-2026	14.7	17.9	3.8	1.6
SCAQMD Significance Thresholds	91	664	5	3
Threshold Exceeded?	**No**	**No**	**No**	**No**

Notes: NO_X = nitrogen oxides, CO = carbon monoxide, PM_{10} = particulate matter 10 microns in diameter, $PM_{2.5}$ = particulate matter 2.5 microns in diameter.
Source: Site 2 Lunada Bay CalEEMod Output Sheets (see Attachment B).

As described previously, LSTs apply to project stationary sources and onsite mobile emissions per SCAQMD LST methodology. 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 potential land use at Project Site 2 is anticipated to not involve vehicles idling or queueing for long periods of time. Therefore, due to the lack of significant stationary source emissions, impacts related to operational localized significance thresholds are presumed to be less than significant and an operational LST analysis was dismissed for the site.

Energy

Energy Consumption

Construction

Electricity and Natural Gas Usage

Due to Project Site 2's size and the fact that construction is temporary, the electricity used during construction of Project Site 2 would be substantially less than that required for its operation and would have a negligible contribution to the Project's overall energy consumption. The electric power used would be for as-necessary lighting and electronic equipment such as computers inside temporary construction trailers. Natural gas is not anticipated to be needed for construction activities. Any consumption of natural gas would be minor and negligible in comparison to the usage during the operation of the site.

Petroleum Fuel Usage

The equipment associated with construction activities (off-road/heavy duty vehicles) would rely on diesel fuel as would vendor and haul trucks involved in delivering building materials and removing the demolition debris from Project Site 2. Construction workers would travel to and from the site throughout the duration of construction, and for a conservative analysis, it is assumed that construction workers would travel in gasoline-powered passenger vehicles. Table 17 lists the total fuel consumption and horsepower-hour data contained within the CARB OffRoad2021 emission model for specific types of diesel construction equipment during the construction phase total. It should be noted that the total fuel consumption is a conservative analysis and would likely overstate the amount of fuel usage, as specific construction equipment is not expected to operate during the entire duration of the construction activity (i.e., crane). Table 18 summarizes Project Site 2's construction vehicle fuel usage based on vehicle miles traveled and fuel usage factors contained in the CARB EMFAC2021. The trips included are worker vehicles, vendor vehicles, and haul vehicles. Table 19, *Project Site 2 Construction Fuel Usage,* shows the overall fuel consumption for Project construction.

Table 17: Construction Equipment Fuel Usage for Project Site 2

Activity	Equipment	Number of Equipment Per Day	Hours per day	Horse-power	Load Factor	Days of Construction	Total Horsepower-hours	Fuel Rate (gal/hp-hr)	Fuel Use (gallons)
Demolition	Concrete/Industrial Saws	1	8	33	0.73	15	2,891	0.04200992	121
	Rubber Tired Dozers	1	8	367	0.4	15	17,616	0.04745478	836
	Tractors/Loaders/Backhoes	2	8	84	0.37	15	7,459	0.05312078	396
Site Preparation	Graders	1	8	367	0.4	1	1,174	0.051539291	61
	Crawler Tractors	1	8	84	0.37	1	249	0.05048826	13
Grading	Graders	1	8	148	0.41	2	971	0.05153929	50
	Rubber Tired Dozers	1	8	367	0.4	2	2,349	0.04745478	111
	Crawler Tractors	1	8	87	0.43	2	599	0.05048826	30
Building Construction	Cranes	1	8	367	0.29	100	26,240	0.05301236	1,397
	Forklifts	2	8	82	0.2	100	49,728	0.05325396	2,642
	Tractors/Loaders/Backhoes	2	8	84	0.37	100	1,361	0.05312078	70
Paving	Pavers	1	8	81	0.42	5	1,361	0.05151654	70
	Cement and Mortar Mixers	4	8	10	0.56	5	896	0.05312078	48
	Rollers	1	8	36	0.38	5	547	0.05259167	29
	Tractors/Loaders/Backhoes	1	8	84	0.37	5	1,243	0.05312078	66
Architectural Coating	Air Compressors	1	8	37	0.48	5	710	0.030007254	21
								Total	**10,405**

Source: Site 2 Lunada Bay CalEEMod Output Sheets , Fuel Calculation Sheets(see Attachment B,D).

Table 18: Project Site 2 Estimated Construction Vehicle Fuel Usage

Construction Source	Total Number of Trips	VMT	Fuel Rate	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
Haul Trucks	154	6,155	6.21	992	0
Vendor Trucks	300	6,120	8.98	681	0
Worker Vehicles	1,726	63,862	28.86	0	2,213
			Total	**1,673**	**2,213**

Source: Site 2 Lunada Bay CalEEMod Output Sheets , Fuel Calculation Sheets (see Attachment B,D).

Table 19: Project Site 2 Total Construction Fuel Usage

Construction Source	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
Construction Vehicles	1,673	2,213
Off-Road Construction Equipment	10,405	0
Total	**12,078**	**2,213**

Source: Site 2 Lunada Bay CalEEMod Output Sheets , Fuel Calculation Sheets(see Attachment B,D).

Operation

The operation of the proposed Project would consume electricity, natural gas, and petroleum. The energy consumption can be found in Table 20, *Project Site 2 Annual Operational Energy Requirements*, below. Electricity and natural gas consumption can be found in the CalEEMod Output Sheets attached (Attachment B). The gasoline consumption rates utilize the same assumptions that were used for the worker vehicles. The potential land use at Project Site 2 is anticipated to utilize energy consistent with other similarly sized projects and would thus not constitute an inefficient use of energy. Therefore, the proposed Project would result in less-than-significant energy impacts without requiring mitigation.

Table 20: Project Site 2 Annual Operational Energy Requirements

Electricity (Kilowatt-Hours)	
75,988	
Natural Gas (Thousands British Thermal Units)	
222,137	
Petroleum (Gasoline) Consumption	
Annual VMT	Gallons of Gasoline Fuel
340,868	11,813

Source: Site 2 Lunada Bay CalEEMod Output Sheets , Fuel Calculation Sheets(see Attachment B,D).

Further, seen in EPD Solution's Palos Verdes Estates (PVE) Housing Element Vehicle Miles Traveled (VMT) Screening Analysis, Site 2 would include housing in close proximity to employment opportunity land uses, and result in a less than significant VMT impact.

Future Renewable Energy

Similarly to Project Site 1, Project Site 2 would be required to meet the CCR Title 24 energy efficiency standards in effect during permitting of proposed Project and comply with all applicable City energy codes. The City's administration of the CCR Title 24 requirements includes review of design components and energy conservation measures that occurs during the permitting process, which ensures that all requirements are met. Project Site 2's residential building would require solar installation in compliance with the current Title 24 requirements for multi-family housing. In addition, Project Site 2 design and operation would comply with State Building Energy Efficiency Standards, appliance efficiency regulations, and green building standards. As such, Project Site 2 would not inhibit the use of and would allow for future flexibility relating to renewable energy.

Conclusion

Project Site 2's energy consumption for construction activities related to redevelopment of the site with mixed-use residential and commercial uses would be required to comply with existing fuel standards, machinery efficiency standards, and CARB requirements that limit idling of trucks. The Project would comply with the State CEQA Guidelines for energy consumption thresholds (a), concerning wasteful, inefficient and overconsumption of energy in project: Construction activities related to the Project Site 2 and the associated infrastructure are not expected to result in demand for fuel greater on a per-unit-of-development basis than any other development projects in Southern California. Also, CCR Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than 5 minutes, thereby precluding unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment.

Through compliance with existing standards, Project Site 2 would not result in a demand for fuel greater on a per-development basis than other development projects in Southern California. There are no unusual site characteristics that would cause the use of construction equipment that would be less energy efficient compared with other similar construction sites in the state. The energy consumption for construction would also be temporary and localized.. Energy consumption from the operation of the proposed Project is also similar to that of other mixed-use projects, and Project Site 2 would comply with Title 24 as well as all applicable City business and energy codes and ordinances. Further, seen in EPD Solution's *Palos Verdes Estates (PVE) Housing Element Vehicle Miles Traveled (VMT) Screening Analysis*, Site 2 would include housing in close proximity to employment opportunity land uses, and result in a less than significant VMT impact. Additionally, the development of the proposed project would comply with the Title 24 residential solar requirements by installing rooftop solar panels and would also not interfere with the growth of future renewable energy infrastructure. Therefore, the construction and operation of Project Site 2 would result in a less-than-significant impact related to energy and no mitigation would be required.

Greenhouse Gas Emissions

Project GHG Emissions

Project Site 2 construction GHG emissions are shown in Table 21, *Project Site 2 Construction GHG Emissions*, and the overall construction and operational emissions are shown in Table 22, *Project Site 2 Total GHG Emissions*, below. These emissions were calculated using the CalEEMod model. The construction emissions are amortized over 30 years and added to the operational GHG emissions.[12] As shown in Table 22, Project Site 2's construction and operation GHG emissions would total 155 $MTCO_2e$ per year, which is below the SCAQMD significance threshold of 3,000 $MTCO_2e$ per year.

Table 21: Project Site 2 Construction GHG Emissions

Activity	Annual GHG Emissions ($MTCO_2e$)
2025	49
2026	94
Total Emissions	143
Total Emissions Amortized Over 30 Years	5

Source: Site 2 Lunada Bay CalEEMod Output Sheets (see Attachment B).

Table 22: Project Site 2 Total GHG Emissions

Activity	Annual GHG Emissions ($MTCO_2e$)
Mobile	119
Area	0
Energy	24
Water	2
Waste	5
Refrigerant	0
Total Project Site 2 Gross Operation Emissions	**150**
Project Site 2 Construction Emissions	5
Total Project Site 2 Emissions	**155**
Significance Threshold	3,000
Threshold Exceeded?	**No**

Source: Site 2 Lunada Bay CalEEMod Output Sheets (see Attachment B)

Conclusion

Project Site 2's construction and operational GHG emissions would total 155 $MTCO_2e$ per year, below the SCAQMD significance threshold of 3,000 $MTCO_2e$ per year. Therefore, Project Site 2 of the Project would have a less-than-significant impact on GHG emissions.

[12] SCAQMD. (2008). *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans.* http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf.

Project Site 3: First Church of Christ, Scientist

Project Site 3, First Church of Christ, Scientist, is located at 4010 Palos Verdes Drive North, within Palos Verdes Estates. The site is 4.63 acres and is comprised of 2 parcels, identified as APN 7538-027-010 (3.56 acres) and APN 7538-027-009 (1.07 acres). The site includes a 12,082 square foot church building with ample open parking, open areas, and landscaping, that would remain on-site during construction. Thus, a demolition phase is not included in the construction schedule seen in the table below. Table 23, *Project Site 3 Construction Schedule*, shows an estimated construction schedule, assuming a Project specific development would be ready for construction by the fourth quarter of 2025. Construction would be expected to last approximately 13 months.

Table 23: Project Site 3 Construction Schedule

Activity	Start Date	End Date	Total Working Days
Site Preparation	12/1/2025	12/5/2025	5
Grading	12/9/2024	12/18/2024	8
Building Construction	12/19/2024	11/5/2025	230
Paving	11/9/2026	12/2/2026	18
Architectural Coating	12/3/2026	12/28/2026	18

Source: Site 3 First Church of Christ CalEEMod Output Sheets (see Attachment C).

Air Quality

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 Project site acreage provided by the client.
- Construction: It was assumed that all equipment would be used for 8 hours per workday. Tractors/loaders/backhoes were replaced with crawler tractors in the site preparation and grading phases.
- Demolition: The demolition phase for Project Site 3 was removed, as the on-site Church would remain on the site during redevelopment.
- Operations: Adjusted trip rate for Apartments Mid Rise to match ITE 11th edition trip rate to match ITE 11th Edition rates for Affordable Housing and Multifamily Housing (Mid-Rise).
- 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 VOCs. Removed gas and propane fireplaces as neither are anticipated for the future residential developments.

Regional Emissions

The SCAQMD has adopted maximum daily emission thresholds (pounds/day) for the criteria pollutants during construction and operation of a project.[13] 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

[13] 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.

standards. The regional thresholds apply to the criteria pollutants mentioned in Tables 24 through 27, along with the CalEEMod Project emissions. These emission thresholds include the 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). To calculate the operational impacts, the air quality emissions for the land use were estimated using CalEEMod. No credit was taken from the on-site church as it would remain on-site during redevelopment and operation of Project Site 3. As shown in Table 24 and Table 25, Project Site 3 would generate emissions below the SCAQMD construction and operational thresholds, and therefore result in less-than-significant regional construction and operational air quality impacts.

Table 24: Project Site 3 Regional Construction Emission Estimates

Construction Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2025						
Site Preparation	4.1	37.5	33.5	<0.1	7.8	4.5
Grading	2.4	20.7	20.5	<0.1	3.6	2.0
Building Construction	1.6	12.2	19.3	<0.1	1.7	0.7
Maximum Daily Emissions	4.1	37.5	33.5	<0.1	7.8	4.5
2026						
Building Construction	1.5	11.6	19.7	<0.1	1.6	0.7
Paving	1.1	7.5	11.5	<0.1	0.6	0.3
Architectural Coating	39.7	1.2	2.4	<0.1	0.2	<0.1
Maximum Daily Emissions	39.7	11.6	19.7	<0.1	1.6	0.7
Maximum Daily Emission 2025-2026	**39.7**	**37.5**	**33.5**	**<0.1**	**7.8**	**4.5**
SCAQMD Significance 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, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter, PM2.5 = particulate matter 2.5 microns in diameter
Source: Site 3 First Church of Christ CalEEMod Output Sheets (see Attachment C).

Table 25: Project Site 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	3.1	2.5	26.0	<0.1	5.6	1.5
Area	3.2	0.1	6.6	<0.1	<0.1	<0.1
Energy	<0.1	0.3	0.1	<0.1	<0.1	<0.1
Total Project Operational Emissions	6.3	2.9	32.7	<0.1	5.7	1.5
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, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter, PM2.5 = particulate matter 2.5 microns in diameter
Source: Site 3 First Church of Christ CalEEMod Output Sheets (see Attachment C).

Local Emissions

As explained previously in Project Site 1 and 2's analyses, the SCAQMD has established localized significance thresholds (LSTs). Emissions for CalEEMod Project Site 3 were evaluated, accounting for both on-site and off-site sources, and compared with the LSTs.

Table 26 shows the amount of ground disturbance that would occur during the demolition, site preparation, and grading phases for the construction of Project Site 3. Table 27 shows the estimated maximum daily construction emissions and thresholds for the proposed Project Site 3.

As shown in Table 26, the phase with the most ground disturbance for Project Site 3 would be the grading phase, with a maximum of 3.5 acres of ground disturbance per day. Thus, the localized construction threshold for Project Site 3 was interpolated between 2 acres and 5 acres, for 3.5 maximum acres disturbed per day during construction. Distance to the nearest sensitive receptor also determines the emission thresholds. The sensitive receptors closest to Project Site 3 includes residential homes about 15.9 meters (52 feet) south of the Project's boundary; therefore, the construction emission threshold for 25 meters was used, as the lowest threshold provided.

As shown in Table 27, Project Site 3 would not exceed the SCAQMD LST construction emission thresholds and would therefore have a less-than-significant localized construction air quality impact.

Table 26: Construction Equipment and Acres Disturbed per Day for Project Site 3

Activity	Equipment Type	Equipment Quantity	Operating Hours per Day	Acres Disturbed per piece of Equipment per Day	Acres Disturbed per Day
Site Preparation	Rubber Tired Dozers	3	8	0.5	1.5
	Crawler Tractors	4	8	0.5	2.0
				Total Acres Disturbed Per Day	3.5
Grading	Excavators	1	8	0	0
	Graders	1	8	0.5	0.5
	Rubber Tired Dozers	1	8	0.5	0.5
	Crawler Tractors	3	8	0.5	1.5
				Total Acres Disturbed Per Day	2.5
				Maximum Acres Disturbed Per Day	**3.5**

Source: Site 3 First Church of Christ CalEEMod Output Sheets (see Attachment C).

Table 27: Localized Construction Emission Estimates for Project Site 3

Construction Activity	Maximum Daily Regional Emissions (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
2025				
Demolition	4.0	4.9	8.3	1.4
Site Preparation	37.5	32.4	7.6	4.5
Grading	20.6	19.6	3.4	2.0
Building Construction	11.3	14.1	0.5	0.4
Maximum Daily Emissions	37.5	32.4	8.3	4.5
2026				
Building Construction	10.7	14.1	0.4	0.4
Paving	7.1	9.9	0.3	0.3
Architectural Coating	1.1	1.5	<0.1	<0.1
Maximum Daily Emissions	10.7	14.1	0.4	0.4
Maximum Daily Emission 2025-2026	**37.5**	**32.4**	**8.3**	**4.5**
SCAQMD Significance Thresholds	164	1,381.5	11.5	6.5
Threshold Exceeded?	**No**	**No**	**No**	**No**

Notes: NO_X = nitrogen oxides, CO = carbon monoxide, PM_{10} = particulate matter 10 microns in diameter, $PM_{2.5}$ = particulate matter 2.5 microns in diameter.
Source: Site 3 First Church of Christ CalEEMod Output Sheets (see Attachment C).

As described previously, LSTs apply to project stationary sources and onsite mobile emissions per SCAQMD LST methodology. 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 potential land use at Project Site 3 is anticipated to not involve vehicles idling or queueing for long periods of time. Therefore, due to the lack of significant stationary

source emissions, impacts related to operational localized significance thresholds are presumed to be less than significant and an operational LST analysis was dismissed for the site.

Energy

Energy Consumption

Construction

Electricity and Natural Gas Usage

Due to Project Site 3's size and the fact that construction is temporary, the electricity used during construction of Project Site 3 would be substantially less than that required for its operation and would have a negligible contribution to the Project's overall energy consumption. The electric power used would be for as-necessary lighting and electronic equipment such as computers inside temporary construction trailers. Natural gas is not anticipated to be needed for construction activities. Any consumption of natural gas would be minor and negligible in comparison to the usage during the operation of the site.

Petroleum Fuel Usage

The equipment associated with construction activities (off-road/heavy duty vehicles) would rely on diesel fuel as would vendor and haul trucks involved in delivering building materials and removing the demolition debris from Project Site 3. Construction workers would travel to and from Project Site 3 throughout the duration of construction, and for a conservative analysis, it is assumed that construction workers would travel in gasoline-powered passenger vehicles. Table 28 lists the total fuel consumption, and horsepower-hour data contained within the CARB OffRoad2021 emission model for specific types of diesel construction equipment during the construction phase total. It should be noted that the total fuel consumption is a conservative analysis and would likely overstate the amount of fuel usage, as specific construction equipment is not expected to operate during the entire duration of the construction activity (i.e., crane). Table 29 summarizes Project Site 3's construction vehicle fuel usage based on vehicle miles traveled and fuel usage factors contained in the CARB EMFAC2021. The trips included are worker vehicles, vendor vehicles, and haul vehicles. Table 30, *Project Site 3 Construction Fuel Usage,* shows the overall fuel consumption for Project construction.

Table 28: Construction Equipment Fuel Usage for Project Site 3

Activity	Equipment	Number of Equipment Per Day	Hours per day	Horse-power	Load Factor	Days of Construction	Total Horsepower-hours	Fuel Rate (gal/hp-hr)	Fuel Use (gallons)
Site Preparation	Rubber Tired Dozers	3	8	367	0.4	5	17,616	0.051539291	908
	Tractors/Loaders/Backhoes	0	8	84	0.37	5	0	0.053120784	0
	Crawler Tractors	4	8	87	0.43	5	5,986	0.05048826	302
Grading	Excavators	1	8	36	0.38	8	876	0.05153929	45
	Graders	1	8	148	0.41	8	3,884	0.05153929	200
	Rubber Tired Dozers	1	8	367	0.4	8	9,395	0.04745478	446
	Crawler Tractors	3	8	87	0.43	8	7,183	0.05048826	363
Building Construction	Cranes	1	8	367	0.29	230	195,831	0.05301236	10,381
	Forklifts	3	8	82	0.2	230	90,528	0.05325396	4,821
	Generator Sets	1	8	14	0.74	230	19,062	0.07797542	1,486
	Tractors/Loaders/Backhoes	3	8	84	0.37	230	171,562	0.05312078	9,114
	Welders	1	8	46	0.45	230	38,088	0.05312078	2,023
Paving	Pavers	1	8	81	0.42	18	4,899	0.05151654	252
	Paving Equipment	2	8	89	0.36	18	9,228	0.05116533	472
	Rollers	2	8	36	0.38	18	3,940	0.05312078	209
	Cement and Mortar Mixers	2	8	10	0.56	18	1,613	0.05259167	85
	Tractors/Loaders/Backhoes	1	8	84	0.37	18	4,476	0.05312078	238
Architectural Coating	Air Compressors	1	8	37	0.48	18	2557	0.030007254	77
								Total	**31,422**

Source: Site 3 First Church of Christ CalEEMod Output Sheets, Fuel Calculation Sheets (see Attachment C,D).

Table 29: Project Site 3 Estimated Construction Vehicle Fuel Usage

Construction Source	Total Number of Trips	VMT	Fuel Rate	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
Vendor Trucks	2,990	60,996	8.98	6,792	0
Worker Vehicles	20,196	747,252	28.86	0	25,896
			Total	**6,792**	**25,896**

Source: Site 3 First Church of Christ CalEEMod Output Sheets, Fuel Calculation Sheets (see Attachment C,D).

Table 30: Project Site 3 Total Construction Fuel Usage

Construction Source	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
Construction Vehicles	6,792	25,896
Off-Road Construction Equipment	31,422	0
Total	**38,214**	**25,896**

Source: Site 3 First Church of Christ CalEEMod Output Sheets, Fuel Calculation Sheets (see Attachment C,D).

Operation

The operation of the proposed Project would consume electricity, natural gas, and petroleum. The energy consumption can be found in Table 31, *Project Site 3 Annual Operational Energy Requirements*, below. Electricity and natural gas consumption can be found in the CalEEMod Output Sheets attached (Attachment C). The gasoline consumption rates utilize the same assumptions that were used for the worker vehicles. The potential land use at Project Site 3 is anticipated to utilize energy consistent with other similarly sized projects and would thus not constitute an inefficient use of energy. Therefore, the proposed Project would result in less-than-significant energy impacts without requiring mitigation.

Table 31: Project Site 3 Annual Operational Energy Requirements

Electricity (Kilowatt-Hours)	
467,974	
Natural Gas (Thousands British Thermal Units)	
1,288,394	
Petroleum (Gasoline) Consumption	
Annual VMT	Gallons of Gasoline Fuel
1,882,414	65,236

Source: Site 3 First Church of Christ CalEEMod Output Sheets, Fuel Calculation Sheets (see Attachment C,D).

Further, seen in EPD Solution's PVE Housing Element VMT Screening Analysis, Site 3 would include housing in close proximity to employment opportunity land uses, resulting in a VMT/capita 9.37%, below the City's surrounding land uses.

Future Renewable Energy

Similarly to Project Site 1 and 2, Project Site 3 would be required to meet the CCR Title 24 energy efficiency standards in effect during permitting of proposed Project and comply with all applicable City energy codes. The City's administration of the CCR Title 24 requirements includes review of design components and energy conservation measures that occurs during the permitting process, which ensures that all requirements are met. Project Site 3's residential building would require solar installation in compliance with the current Title 24

requirements for multi-family housing. In addition, Project Site 3 design and operation would comply with State Building Energy Efficiency Standards, appliance efficiency regulations, and green building standards. As such, Project Site 3 would not inhibit the use of and would allow for future flexibility relating to renewable energy.

Conclusion

Project Site 3's energy consumption for construction activities related to redevelopment of the site with mixed-use residential and commercial uses would be required to comply with existing fuel standards, machinery efficiency standards, and CARB requirements that limit idling of trucks. The Project would comply with the State CEQA Guidelines for energy consumption thresholds (a), concerning wasteful, inefficient and overconsumption of energy in project: Construction activities related to the Project Site 3 and the associated infrastructure are not expected to result in demand for fuel greater on a per-unit-of-development basis than any other development projects in Southern California. Also, CCR Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than 5 minutes, thereby precluding unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment.

Through compliance with existing standards, Project Site 3 would not result in a demand for fuel greater on a per-development basis than other development projects in Southern California. There are no unusual site characteristics that would cause the use of construction equipment that would be less energy efficient compared with other similar construction sites in the state. The energy consumption for construction would also be temporary and localized. Energy consumption from the operation of the proposed Project is also similar to that of other mixed-use projects, and Project Site 3 would comply with Title 24 as well as all applicable City business and energy codes and ordinances. Further, seen in EPD Solution's PVE Housing Element VMT Screening Analysis, Site 3 would include housing in close proximity to employment opportunity land uses, resulting in a VMT/capita 9.37%, below the City's surrounding land uses. Additionally, the development of the proposed project would comply with the Title 24 residential solar requirements by installing rooftop solar panels and would also not interfere with the growth of future renewable energy infrastructure. Therefore, the construction and operation of Project Site 3 would result in a less-than-significant impact related to energy and no mitigation would be required.

Greenhouse Gas Emissions

Project GHG Emissions

Project Site 3's construction GHG emissions are shown in Table 32, *Project Site 3 Construction GHG Emissions*, and the overall construction and operational emissions are shown in Table 33, *Project Site 3 Total GHG Emissions*, below. These emissions were calculated using the CalEEMod model. The construction emissions are amortized over 30 years and added to the operational GHG emissions.[14] As shown in Table 33, Project Site 3's construction and operation GHG emissions would total 861 $MTCO_2e$ per year, which is below the SCAQMD significance threshold of 3,000 $MTCO_2e$ per year.

Table 32: Project Site 3 Construction GHG Emissions

Activity	Annual GHG Emissions ($MTCO_2e$)
2025	43
2026	434
Total Emissions	476
Total Emissions Amortized Over 30 Years	16

Source: Site 3 First Church of Christ CalEEMod Output Sheets (see Attachment C).

Table 33: Project Site 3 Total GHG Emissions

Activity	Annual GHG Emissions ($MTCO_2e$)
Mobile	663
Area	2
Energy	142
Water	11
Waste	27
Refrigerant	0
Total Project Site 3 Operational Emissions	**846**
Project Site 3 Construction Emissions	16
Total Project Site 3 Emissions	**861**
Significance Threshold	3,000
Threshold Exceeded?	**No**

Source: Site 3 First Church of Christ CalEEMod Output Sheets (see Attachment C).

Conclusion

Project Site 3's construction and operational GHG emissions would total 861 $MTCO_2e$ per year, below the SCAQMD significance threshold of 3,000 $MTCO_2e$ per year. Therefore, Site 3 of the Project would have a less-than-significant impact on GHG emissions.

[14] SCAQMD. (2008). *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf.

Project Sites Total

This section summarizes the total regional air quality, energy consumption, and GHG emission inventory impacts from all three Project sites combined. As stated in the previous three sections, all three project sites would have a less than significant air quality, energy, and GHG impact for construction and operation. As the three sites are not anticipated to be constructed concurrently and would not have the same construction schedules, a combined analysis would not be appropriate and would remain less than signficant.

Air Quality

Regional Emissions

The SCAQMD daily regional emission thresholds mentioned in the previous site assessments were utilized to evaluate the maximum criteria pollutant concentration for the total operation across all three sites. As seen in Table 34, the Project Sites' total operational daily emissions for pollutants would be below the SCAQMD regional thresholds, and therefore result in less-than-significant regional air quality impacts.

Table 34: Total Project Regional Operational Emission Estimates

Operational Emissions	Maximum Daily Regional Emissions (pounds/day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Project Site 1	0.9	0.3	4.5	<0.1	0.7	0.2
Project Site 2	0.9	0.3	4.1	<0.1	0.7	0.2
Project Site 3	6.3	2.9	32.7	<0.1	5.7	1.5
Total Project Operational Emissions	**8.1**	**3.5**	**41.3**	**<0.1**	**7.1**	**1.9**
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, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter, PM2.5 = particulate matter 2.5 microns in diameter
Source: CalEEMod Output Sheets (see Attachment A, B, C).

Air Quality Management Plan Consistency

SCAQMD's CEQA Handbook provides the following two criteria to determine whether a project would be consistent or in conflict with the AQMP:

1. The Project would not generate population and employment growth that would be inconsistent with Southern California Association of Governments (SCAG)'s growth forecasts.
2. The Project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

Consistency Criterion No. 1 refers to the SCAG's growth forecasts, and associated assumptions included in the AQMP. The future air quality levels projected in the AQMP are based on SCAG's growth projections, which are based, in part, on the general plans of cities located within the SCAG region. Therefore, if the level of housing and employment growth related to the proposed Project is consistent with the applicable assumptions used in the development of the AQMP, the Project would not jeopardize attainment of the air quality levels identified in the AQMP.

Project Site 1 and Project Site 2 of the Project both have a General Plan land use designation of Commercial Centers (C) and are zoned as Commercial (C), which allows residential development at a density of up to 34.0 dwelling units per acre. The Project proposes a zoning change from Commercial to Commercial/Mixed-Use Overlay zoning for Project Sites 1 and 2. This would allow for the existing uses to continue operating on the ground floor of any future development in a vertically mixed configuration. The *Palos Verdes Estates 2021-2029 Housing Element* identifies Project Site 1 and Project Site 2 would each have a capacity of 20 housing units, including 11 L/VL units and 9 M/AM income units each.

Project Site 3 of the Project currently has a General Plan land use designation of Residential Single Family (R-1) and is zoned as Residential Single Family (R-1), which would allow residential development at a density of up to 34.0 dwelling units per acre. The Project proposes a zoning change from Residential Single Family to Residential Multiple-Family with Housing Opportunity Overlay zoning for Project Site 3; this would allow for the existing uses to continue operating on the ground floor of any future development in a vertically mixed configuration. Project Site 3 would have a capacity for up to 116 housing units, including 60 L/VL units and 56 M/AM income units each.

These housing units would contribute to fulfilling the City's housing needs established by SCAG in the Regional Housing Needs Assessment (RHNA). The RHNA is based on the growth forecasts as prepared in the Connect SoCal which is based on local input. Any indirect population growth associated with the proposed Project (i.e. jobs associated with the construction of the housing) is already assumed and consistent with the growth projected in Connect SoCal. Therefore, implementation of the Project would not exceed the growth assumptions for the Project site. As a result, the proposed Project Sites 1, 2, and 3 would all be consistent with Criterion 1.

Consistency Criterion No. 2 refers to the California Ambient Air Quality Standards. An impact would occur if the long-term emissions associated with the proposed Project sites would exceed SCAQMD's regional significance thresholds for operation-phase emissions. As presented in Table 34, operation of the proposed Project, inclusive of all three sites, would result in emissions that do not exceed any SCAQMD thresholds. Therefore, the proposed Project would be consistent with Criterion No. 2.

Odors

Odors would be produced during the construction of the proposed Project due to the operation of heavy-duty off-road equipment. The primary odor emitted would be diesel particulate matter (DPM) from the vendor trucks and heavy-duty off-road equipment. This odor may be noticeable by nearby residents; however, these odors would be expected and not necessarily objectionable. These odors would also dissipate quickly and would be temporary. Therefore, due to the nature of the odor produced during construction as temporary and non-objectionable to a substantial number of people, the odor impact from construction of the proposed Project would be less than significant.

For operational odor emissions, SCAQMD's *CEQA Air Quality Handbook* describes odor complaints associated with the following land uses:

- Agricultural uses
- Chemical plants
- Composting activities
- Dairies
- Fiberglass molding
- Food processing plants
- Landfills
- Refineries

- Wastewater treatment plants

The Project does not propose any of the above land uses and is required to comply with SCAQMD Rule 402, *Nuisance*, which states:

> *A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.*

Thus, impacts associated with odor produced by operation of the proposed Project would be less than significant.

Conclusion

The operational activities of the proposed development would also comply with applicable SCAQMD rules and regulations and not exceed any criteria pollutant thresholds. Additionally, all three of the proposed Project sites would be consistent with SCAQMD'S 2022 AQMP, reflecting adherence to regional air quality management goals and standards. Finally, the operation of the proposed Project involves land uses that typically do not generate significant odor complaints and would comply with SCAQMD Rule 402. Therefore, the proposed Project would result in less-than-significant air quality impacts without the implementation of mitigation.

Energy

Operation

The operation of the proposed Project would consume electricity, natural gas, and petroleum. The energy consumption of each individual site, as well as all three sites combined, can be found in Table 35, *Total Project Annual Operational Energy Requirements*, below. Electricity and natural gas consumption for the sites can be found in the CalEEMod Output Sheets attached (Attachment A, B, and C). The gasoline consumption rates utilize the same assumptions that were used for the worker vehicles. All three Project sites would utilize energy consistent with that of similar sized projects and would thus not constitute an inefficient use of energy. Therefore, with respect to CEQA Guidelines thresholds (a), the proposed Project would result in less-than-significant energy impacts without requiring mitigation.

Table 35: Total Project Annual Operational Energy Requirements

Electricity (Kilowatt-Hours)		
Project Site 1	75,988	
Project Site 2	75,988	
Project Site 3	467,974	
Project Total	619,950	
Natural Gas (Thousands British Thermal Units)		
Project Site 1	222,137	
Project Site 2	222,137	
Project Site 3	1,288,394	
Project Total	1,732,668	
Petroleum (Gasoline) Consumption		
	Annual VMT	Gallons of Gasoline Fuel
Project Site 1	340,868	11,813
Project Site 2	340,868	11,813
Project Site 3	1,882,414	65,236
Project Total	2,564,150	88,862

Source: CalEEMod Output Sheets (see Attachment A, B, C)

Future Renewable Energy Developments

As mentioned in the previous Project sites' analyses, all Project sites would be required to meet the CCR Title 24 energy efficiency standards in effect during permitting of proposed Project and comply with all applicable City energy codes. The City's administration of the CCR Title 24 requirements includes review of design components and energy conservation measures that occurs during the permitting process, which ensures that all requirements are met. In addition, design and operation of the Project sites would comply with State Building Energy Efficiency Standards, appliance efficiency regulations, and green building standards. The Project buildings would require installation of rooftop solar panels in compliance with current

Title 24 requirements. As such, the Project would not inhibit the use of and would allow for future flexibility relating to renewable energy.

Conclusion

The Project would comply with the State CEQA Guidelines for energy consumption thresholds (a), concerning wasteful, inefficient and overconsumption of energy in projects, and (b), project design impeding renewable energy development growth, respectively:

(a) Operation would comply with Title 24 and all applicable City business and energy codes and ordinances. Through compliance with existing standards, the Project would not result in a fuel demand on a per-development basis that is greater than other development projects in Southern California. Therefore, the operation of the Project sites would result in a less-than-significant impact related to inefficient, wasteful, or unnecessary energy use, and no mitigation would be required.
(b) The proposed Project sites would be required to meet the CCR Title 24 energy efficiency standards, comply with all applicable City energy codes and the Project buildings would be solar compliant with current Title 24 requirements. Therefore, the Project would not impede the growth of future renewable energy developments and would allow for future flexibility relating to renewable energy on-site.

Greenhouse Gas Emissions

Project Total GHG Emissions

The Project's total operational GHG emissions for all three sites are shown in Table 36, *Total Project GHG Emissions*. As shown below in Table 36, the Project's operational GHG emissions for all three sites would total 1,146 $MTCO_2e$. The Project site's total GHG emission results are below the SCAQMD significance threshold of 3,000 $MTCO_2e$ per year. Therefore, the Project would have a less-than-significant impact on GHG emissions.

Table 36: Total Project GHG Emissions

Activity	Annual GHG Emissions ($MTCO_2e$)
Operational	
Project Site 1	150
Project Site 2	150
Project Site 3	846
Project Operational Total	**1,146**
Significance Threshold	3,000
Threshold Exceeded?	**No**

Source: CalEEMod Output Sheets (see Attachment A, B, C).

Project Consistency with the 2022 CARB Scoping Plan

The 2022 CARB Scoping Plan Update sets the GHG emission reduction target for 2045 at 85% below 1990 levels, which was codified by SB 32. Table 37 shows consistency with CARB's 2022 Scoping Plan. As seen in Table 37, the Project would be consistent with the 2022 Scoping Plan. The proposed Project would not conflict with any plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs within the 2022 CARB Scoping Plan.

Table 37: 2022 Scoping Plan Consistency Summary

Action	Consistency
GHG Emissions Reductions Relative to the SB 32 Target	
40% Below 1990 levels by 2030.	**Consistent.** The 2022 Title 24 Building Codes, Part 6 Energy and Part 11 CalGreen sets requirements to meet the goal of 40% below 1990 levels by 2023. Additionally, the State Senate past Senate Bill (SB) 743 to achieve GHG goals by reducing VMT. Project would comply with the 2022 Title 24, Part 6 and Part 11 along with reducing VMT in the City. Therefore, the Project is consistent with the programs created to meet the 40% below 1990 levels by 2030 goal.
Smart Growth/Vehicle Miles Traveled VMT	
VMT per capita reduced 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045.	**Consistent.** The proposed Project reduces VMT by proposing residential and potential mixed-use

Action	Consistency
	development in close proximity to each other, as well as proposing residential development in a Low VMT area in the city. Additionally, the Project is consistent with the growth and land use assumptions in the 2022 Connect SoCal (SCAG, 2020), which creates policies that aim to reduce VMT to meet State reduction goals. Therefore, the Project would be consistent with contributing to the states goals of VMT reduction targets and measures.
Light-Duty Vehicle (LDV) Zero-Emission Vehicles (ZEVs)	
100% of LDV sales are ZEV by 2035.	**Consistent.** The proposed Project would be designed and constructed in accordance with the 2022 Title 24 Part 6 and Part 11 requirements, which includes constructing homes to allow for electric vehicle charging.
Truck ZEVs	
100% of medium-duty (MDV)/HDC sales are ZEV by 2040 (AB 74 University of California Institute of Transportation Studies [ITS] report).	**Not Applicable.** The Project proposes residential or potential commercial use that would not be associated with significant truck sales or use.
Aviation	
20% of aviation fuel demand is met by electricity (batteries) or hydrogen (fuel cells) in 2045. Sustainable aviation fuel meets most or the rest of the aviation fuel demand that has not already transitioned to hydrogen or batteries.	**Not Applicable.** The proposed Project would not utilize aviation fuel.
Ocean-Going Vessels (OGV)	
2020 OGV At-Berth regulation fully implemented, with most OGVs utilizing shore power by 2027. 25% of OGVs utilize hydrogen fuel cell electric technology by 2045.	**Not Applicable.** The proposed Project would not utilize any OGVs.
Port Operations	
100% of cargo handling equipment is zero-emission by 2037. 100% of drayage trucks are zero emission by 2035.	**Not Applicable.** The proposed Project would not impact any operations at any ports.
Freight and Passenger Rail	
100% of passenger and other locomotive sales are ZEV by 2030. 100% of line haul locomotive sales are ZEV by 2035. Line haul and passenger rail rely primarily on hydrogen fuel cell technology, and others primarily utilize electricity.	**Not Applicable.** The proposed Project would not involve any freight or passenger rail operations.
Oil and Gas Extraction	
Reduce oil and gas extraction operations in line with petroleum demand by 2045.	**Not Applicable.** The proposed Project would not involve oil or gas extraction operations.

Action	Consistency
Petroleum Refining	
CCS on majority of operations by 2030, beginning in 2028. Production reduced in line with petroleum demand.	**Not Applicable.** The proposed Project would not involve any petroleum refining.
Electricity Generation	
Sector GHG target of 38 million metric tons of carbon dioxide equivalent (MMTCO2e) in 2030 and 30 MMTCO2e in 2035. Retail sales load coverage13420 gigawatts (GW) of offshore wind by 2045. Meet increased demand for electrification without new fossil gas-fired resources.	**Consistent.** The Project would be required to provide PV solar panels on the rooftops of the multi-family residence building(s) and meet all other requirements related to energy efficiency standards, as well as improved insulation reducing energy consumption, in compliance with the 2022 Title 24, Part 6 energy code.
New Residential and Commercial Buildings	
All electric appliances beginning 2026 (residential) and 2029 (commercial), contributing to 6 million heat pumps installed statewide by 2030.	**Consistent.** The Project would comply with the 2022 Title 24, Part 6 building energy requirements, which would require all in-unit appliances for residential projects to be all-electric and Energy Star certified.
Existing Residential Buildings	
80% of appliance sales are electric by 2030 and 100% of appliance sales are electric by 2035. Appliances are replaced at end of life such that by 2030 there are 3 million all-electric and electric-ready homes—and by 2035, 7 million homes—as well as contributing to 6 million heat pumps installed statewide by 2030.	**Not Applicable.** The proposed Project would not involve any existing residential buildings.
Existing Commercial Buildings	
80% of appliance sales are electric by 2030, and 100% of appliance sales are electric by 2045. Appliances are replaced at end of life, contributing to 6 million heat pumps installed statewide by 2030.	**Consistent.** The three Project Sites have existing commercial/public facility buildings currently active. The redevelopment of these sites could involve appliance sales that would require consistency with the Title 24 Part 6 and Part 11 requirements for proposed development as well as upgrading existing facilities. Therefore, the proposed Project would be consistent with the goal of 80% of appliance sales being electric and 100% of appliance sales being electric by 2045.
Food Products	
7.5% of energy demand electrified directly and/or indirectly by 2030; 75% by 2045.	**Not Applicable.** The Project does not propose cold storage and would not involve mass food production.
Construction Equipment	
25% of energy demand electrified by 2030 and 75% electrified by 2045.	**Consistent.** The proposed Project would be required to use construction equipment that is registered by CARB and meet CARB's standards. CARB sets its standards to be in line with the goal of reducing energy demand by 25% in 2030 and 75% in 2045.

Action	Consistency
Chemicals and Allied Products; Pulp and Paper	
Electrify 0% of boilers by 2030 and 100% of boilers by 2045. Hydrogen for 25% of process heat by 2035 and 100% by 2045. Electrify 100% of other energy demand by 2045.	**Not Applicable.** The proposed Project would not be utilized for pulp and/or paper products.
Stone, Clay, Glass, and Cement	
CCS on 40% of operations by 2035 and on all facilities by 2045. Process emissions reduced through alternative materials and CCS.	**Not Applicable.** The proposed Project would not be utilized for stone, clay, glass, and/or cement storage.
Other Industrial Manufacturing	
0% energy demand electrified by 2030 and 50% by 2045.	**Not Applicable.** The Project site does not involve manufacturing operations.
Combined Heat and Power	
Facilities retire by 2040.	**Not Applicable.** The proposed Project would not involve any existing combined heat and power facilities.
Agriculture Energy Use	
25% energy demand electrified by 2030 and 75% by 2045.	**Not Applicable.** The proposed Project would not involve any agricultural uses.
Low Carbon Fuels for Transportation	
Biomass supply is used to produce conventional and advanced biofuels, as well as hydrogen.	**Not Applicable.** The proposed Project would not involve any production of biofuels.
Low Carbon Fuels for Buildings and Industry	
In 2030s, biomethane135 blended in pipeline Renewable hydrogen blended in fossil gas pipeline at 7% energy (~20% by volume), ramping up between 2030 and 2040. In 2030s, dedicated hydrogen pipelines constructed to serve certain industrial clusters	**Not Applicable.** The proposed Project would not involve any production of fuels for buildings and industry.
Non-Combustion Methane Emissions	
Increase landfill and dairy digester methane capture. Some alternative manure management deployed for smaller dairies. Moderate adoption of enteric strategies by 2030. Divert 75% of organic waste from landfills by 2025. Oil and gas fugitive methane emissions reduced 50% by 2030 and further reductions as infrastructure components retire in line with reduced fossil gas demand	**Not Applicable.** The proposed Project would not involve any landfill and/or dairy uses.

Action	Consistency
High GWP Potential Emissions	
Low GWP refrigerants introduced as building electrification increases, mitigating HFC emissions.	**Not Applicable.** The proposed Project does not include large-scale refrigeration uses nor would the proposed operation include any manufacturing.
Transportation Electrification	
Convert local government fleets to ZEV	**Not Applicable.** The proposed Project would not involve government offices; therefore, this measure would not apply.
Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as permit streamlining, infrastructure siting, consumer education, or preferential parking policies)	**Consistent.** The proposed Project would be designed and constructed in accordance with the 2022 Title 24 Part 6 and Part 11 requirements, which includes constructing homes to allow for electric vehicle charging. Therefore, the proposed Project would be consistent with the implementation of a ZEV ecosystem within the City.
VMT Reduction	
Reduce or eliminate minimum parking standards in new developments	**Consistent**. The proposed Project includes affordable housing incentives as well as flexible development standards to allow for reduced parking requirements. Therefore, the Project is consistent with this policy.
Adopt and implement Complete Streets policies and investments, consistent with general plan circulation element requirements	**Not Applicable**. The adoption and implementation of Complete Streets policies and investments are outside the scope of the proposed Project.
Increase public access to shared clean mobility options (such as planning for and investing in electric shuttles, bike share, car share, transit)	**Not Applicable.** The increase in public access to shared clean mobility options are outside the scope of the proposed Project. The proposed Project would not impede the City with achieving this goal.
Implement parking pricing or transportation demand management pricing strategies	**Not Applicable**. The implementation of parking pricing or transportation demand management pricing strategies are outside the scope of the proposed Project.
Amend zoning or development codes to enable mixed-use, walkable, and compact infill development (such as increasing allowable density of the neighborhood)	**Consistent.** The Project proposes a housing overlay to allow for the development of both commercial and residential development. Therefore, the proposed project would be consistent with the goal of encouraging mixed-use development.
Preserve natural and working lands	**Consistent.** The Project would not convert any natural and working lands to urban uses. The Project site is located within a predominantly residential area that is either being developed or being planned for development.
Building Decarbonization	
Adopt all-electric new construction reach codes	**Consistent**. The proposed Project would comply with 2022 Title 24 Parts 6 and 11, which includes electric heat pumps installed during construction and electric hookups for all appliances.
Adopt policies and incentive programs to implement energy efficiency retrofits (such as weatherization, lighting upgrades, replacing energy intensive	**Consistent**. The proposed Project would be required to comply with the Title 24 Part 6 and Part 11 requirements for any future retrofits proposed for the existing

Action	Consistency
appliances and equipment with more efficient systems, etc.)	commercial buildings on all three Project sites. Therefore, the Project would be consistent with this policy.
Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings	**Not Applicable.** The adoption of policies and incentive programs are outside the scope of the proposed Project and would be done through the City's process of updating their municipal code and City lead programs.
Adopt policies and incentive programs to reduce electrical loads from equipment plugged into outlets (such as purchasing Energy Star equipment for municipal buildings, occupancy sensors, smart power strips, equipment controllers, etc.)	**Consistent.** The proposed Project would be constructed in accordance with Title 24 "CALGreen" requirements, which includes installation of Energy Star equipment and appliances in new residential construction.
Facilitate deployment of renewable energy production and distribution and energy storage	**Consistent.** In compliance with the CALGreen Building Energy Efficiency Standards Title 24 Part 6 for new residential dwelling units, the Project would include photovoltaic (PV) solar panels on the rooftops of each residence and meet all other requirements related to energy efficiency standards.

Source: California's 2022 Climate Change Scoping Plan Table 2-1: Actions for the Scoping Plan Scenario: AB 32 GHG Inventory Sectors

Conclusion

All three Project site would be consistent with the 2022 CARB Scoping Plan and would not interfere with the policies and goals set within those plans. The proposed Project's total GHG emissions of 1,146 $MTCO_2e$ per year for all three sites is below the SCAQMD significance threshold of 3,000 $MTCO_2e$ per year. Therefore, the Project would have a less-than-significant impact related to GHG emissions.

ATTACHMENT A: SITE 1 MALAGA COVE CALEEMOD OUTPUT SHEETS

24-103 PVE Site 1 Malaga Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	24-103 PVE Site 1 Malaga
Construction Start Date	12/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	20.4
Location	33.78896150162436, -118.40474052320977
County	Los Angeles-South Coast
City	Palos Verdes Estates
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4652
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.28

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	20.0	Dwelling Unit	0.60	19,200	3,437	—	59.0	—

Parking Lot	20.0	Space	0.07	8,000	0.00	—	—	—

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.	24.4	7.06	10.2	0.02	0.54	0.32	2,239
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	1.65	18.5	15.9	0.05	5.54	1.62	6,985
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	0.54	1.89	2.68	< 0.005	0.18	0.08	587
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.10	0.34	0.49	< 0.005	0.03	0.02	97.1
Exceeds (Daily Max)	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—
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)	—	—	—	—	—	—	—
2026	24.4	7.06	10.2	0.02	0.54	0.32	2,239
Daily - Winter (Max)	—	—	—	—	—	—	—
2025	1.65	18.5	15.9	0.05	5.54	1.62	6,985
2026	0.78	7.07	10.00	0.02	0.54	0.32	2,225
Average Daily	—	—	—	—	—	—	—
2025	0.07	0.77	0.75	< 0.005	0.18	0.06	256
2026	0.54	1.89	2.68	< 0.005	0.14	0.08	587
Annual	—	—	—	—	—	—	—
2025	0.01	0.14	0.14	< 0.005	0.03	0.01	42.3
2026	0.10	0.34	0.49	< 0.005	0.03	0.02	97.1

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.	0.92	0.32	4.47	0.01	0.67	0.18	932
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	0.76	0.33	2.73	0.01	0.67	0.18	895
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	0.87	0.35	3.82	0.01	0.66	0.18	907
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.16	0.06	0.70	< 0.005	0.12	0.03	150
Exceeds (Daily Max)	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—

Threshold	55.0	55.0	550	150	150	55.0	—
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	0.32	0.25	2.96	0.01	0.67	0.17	745
Area	0.60	0.01	1.48	< 0.005	< 0.005	< 0.005	4.48
Energy	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	144
Water	—	—	—	—	—	—	11.3
Waste	—	—	—	—	—	—	27.8
Refrig.	—	—	—	—	—	—	0.14
Total	0.92	0.32	4.47	0.01	0.67	0.18	932
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	0.31	0.28	2.71	0.01	0.67	0.17	712
Area	0.44	0.00	0.00	0.00	0.00	0.00	0.00
Energy	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	144
Water	—	—	—	—	—	—	11.3
Waste	—	—	—	—	—	—	27.8
Refrig.	—	—	—	—	—	—	0.14
Total	0.76	0.33	2.73	0.01	0.67	0.18	895
Average Daily	—	—	—	—	—	—	—
Mobile	0.31	0.28	2.79	0.01	0.66	0.17	721
Area	0.55	0.01	1.02	< 0.005	< 0.005	< 0.005	3.07

Energy	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	144
Water	—	—	—	—	—	—	11.3
Waste	—	—	—	—	—	—	27.8
Refrig.	—	—	—	—	—	—	0.14
Total	0.87	0.35	3.82	0.01	0.66	0.18	907
Annual	—	—	—	—	—	—	—
Mobile	0.06	0.05	0.51	< 0.005	0.12	0.03	119
Area	0.10	< 0.005	0.19	< 0.005	< 0.005	< 0.005	0.51
Energy	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	23.8
Water	—	—	—	—	—	—	1.87
Waste	—	—	—	—	—	—	4.60
Refrig.	—	—	—	—	—	—	0.02
Total	0.16	0.06	0.70	< 0.005	0.12	0.03	150

3. Construction Emissions Details

3.1. Demolition (2025) - 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	1.36	12.8	13.2	0.02	0.53	0.48	2,211
Demolition	—	—	—	—	3.65	0.55	—
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	0.36	< 0.005	0.01	0.01	60.6
Demolition	—	—	—	—	0.10	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	0.07	< 0.005	< 0.005	< 0.005	10.0
Demolition	—	—	—	—	0.02	< 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	0.04	0.05	0.59	0.00	0.13	0.03	133
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	5.64	2.14	0.03	1.24	0.38	4,642
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	< 0.005	< 0.005	3.69
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.16	0.06	< 0.005	0.03	0.01	127
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.61
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	0.01	< 0.005	0.01	< 0.005	21.1

3.3. Site Preparation (2025) - 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	0.66	5.62	6.13	0.01	0.35	0.33	920

Dust From Material Movement	—	—	—	—	0.28	0.03	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	2.52
Dust From Material Movement	—	—	—	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.42
Dust From Material Movement	—	—	—	—	< 0.005	< 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	0.29	0.00	0.07	0.02	66.4
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	0.18
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	0.03
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. Grading (2025) - 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	1.62	14.7	13.6	0.02	0.75	0.69	2,303
Dust From Material Movement	—	—	—	—	1.98	0.91	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.07	< 0.005	< 0.005	< 0.005	12.6
Dust From Material Movement	—	—	—	—	0.01	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	2.09
Dust From Material Movement	—	—	—	—	< 0.005	< 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	0.03	0.04	0.44	0.00	0.10	0.02	99.5
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	0.55
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	0.09
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

3.7. Building Construction (2025) - 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	0.75	7.34	9.02	0.02	0.31	0.29	1,883
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.16	0.19	< 0.005	0.01	0.01	40.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	< 0.005	6.71
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.08	0.09	1.05	0.00	0.23	0.05	236
Vendor	< 0.005	0.13	0.06	< 0.005	0.03	0.01	114
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	< 0.005	< 0.005	5.15
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.46
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	0.85
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.41
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - 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	0.71	6.87	8.96	0.02	0.28	0.25	1,882
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.71	6.87	8.96	0.02	0.28	0.25	1,882
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.18	1.75	2.28	< 0.005	0.07	0.06	479
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.32	0.42	< 0.005	0.01	0.01	79.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.07	0.07	1.15	0.00	0.23	0.05	244
Vendor	< 0.005	0.12	0.06	< 0.005	0.03	0.01	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.06	0.08	0.98	0.00	0.23	0.05	231

Vendor	< 0.005	0.12	0.06	< 0.005	0.03	0.01	112
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	0.02	0.02	0.26	0.00	0.06	0.01	59.7
Vendor	< 0.005	0.03	0.01	< 0.005	0.01	< 0.005	28.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.01	< 0.005	9.88
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	4.73
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - 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	0.59	5.08	6.24	0.01	0.21	0.20	976
Paving	0.04	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.09	< 0.005	< 0.005	< 0.005	13.4
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	0.01	0.02	< 0.005	< 0.005	< 0.005	2.21
Paving	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.06	0.07	1.13	0.00	0.23	0.05	241
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
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	3.17
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	0.52
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

3.13. Architectural Coating (2026) - 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	0.16	1.14	1.51	< 0.005	0.03	0.03	179
Architectural Coatings	24.2	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	2.45
Architectural Coatings	0.33	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.41
Architectural Coatings	0.06	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.01	0.01	0.23	0.00	0.05	0.01	48.8
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
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.64
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	0.11
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)	—	—	—	—	—	—	—
Apartments Mid Rise	0.32	0.25	2.96	0.01	0.67	0.17	745

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.32	0.25	2.96	0.01	0.67	0.17	745
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	0.31	0.28	2.71	0.01	0.67	0.17	712
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.31	0.28	2.71	0.01	0.67	0.17	712
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	0.06	0.05	0.51	< 0.005	0.12	0.03	119
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.06	0.05	0.51	< 0.005	0.12	0.03	119

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	69.9
Parking Lot	—	—	—	—	—	—	2.55
Total	—	—	—	—	—	—	72.5
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	69.9
Parking Lot	—	—	—	—	—	—	2.55
Total	—	—	—	—	—	—	72.5
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	11.6
Parking Lot	—	—	—	—	—	—	0.42
Total	—	—	—	—	—	—	12.0

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)	—	—	—	—	—	—	—
Apartments Mid Rise	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	71.4
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	71.4
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	71.4
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	71.4
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	11.8
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	11.8

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	0.41	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—
Landscape Equipment	0.16	0.01	1.48	< 0.005	< 0.005	< 0.005	4.48
Total	0.60	0.01	1.48	< 0.005	< 0.005	< 0.005	4.48
Daily, Winter (Max)	—	—	—	—	—	—	—

Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.41	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—
Total	0.44	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	0.08	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—
Landscape Equipment	0.02	< 0.005	0.19	< 0.005	< 0.005	< 0.005	0.51
Total	0.10	< 0.005	0.19	< 0.005	< 0.005	< 0.005	0.51

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	11.3
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	11.3
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	11.3
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	11.3
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	1.87
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	1.87

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	27.8
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	27.8
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	27.8
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	27.8
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	4.60
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	4.60

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.14
Total	—	—	—	—	—	—	0.14
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.14

Total	—	—	—	—	—	—	0.14
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.02
Total	—	—	—	—	—	—	0.02

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
Demolition	Demolition	12/1/2025	12/15/2025	5.00	10.0	—
Site Preparation	Site Preparation	12/16/2025	12/17/2025	5.00	1.00	—
Grading	Grading	12/18/2025	12/20/2025	5.00	2.00	—
Building Construction	Building Construction	12/21/2025	5/10/2026	5.00	100	—
Paving	Paving	5/11/2026	5/18/2026	5.00	5.00	—
Architectural Coating	Architectural Coating	5/19/2026	5/26/2026	5.00	5.00	—

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
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37

Site Preparation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Grading	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	63.9	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	17.8	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	3.45	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	3.55	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	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	38,880	12,960	0.00	0.00	183

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	2,554	—
Site Preparation	—	—	1.00	0.00	—
Grading	—	—	3.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.07

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%
Parking Lot	0.07	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005

2026	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
Apartments Mid Rise	94.0	94.0	94.0	34,310	934	934	934	340,868
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	20
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	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)
38880	12,960	0.00	0.00	183

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	73,317	346	0.0330	0.0040	222,137
Parking Lot	2,671	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)
Apartments Mid Rise	745,476	58,914
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)

Apartments Mid Rise	14.7	—
Parking Lot	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	5.08	annual days of extreme heat
Extreme Precipitation	3.85	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 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 (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	0	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	0	0	0	N/A
Wildfire	0	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	26.7
AQ-PM	62.0
AQ-DPM	6.50
Drinking Water	11.3
Lead Risk Housing	30.8
Pesticides	0.00
Toxic Releases	90.5
Traffic	54.4
Effect Indicators	—
CleanUp Sites	37.6
Groundwater	0.00

Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	72.2
Solid Waste	23.0
Sensitive Population	—
Asthma	1.92
Cardio-vascular	6.75
Low Birth Weights	29.5
Socioeconomic Factor Indicators	—
Education	1.77
Housing	9.53
Linguistic	52.5
Poverty	12.8
Unemployment	7.77

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	99.8203516
Employed	62.37649172
Median HI	99.1530861
Education	—
Bachelor's or higher	97.99820352
High school enrollment	100
Preschool enrollment	70.80713461
Transportation	—
Auto Access	94.58488387
Active commuting	6.775311177

Social	—
2-parent households	87.15513923
Voting	80.17451559
Neighborhood	—
Alcohol availability	87.501604
Park access	81.35506224
Retail density	41.6527653
Supermarket access	19.45335558
Tree canopy	49.05684589
Housing	—
Homeownership	99.44822276
Housing habitability	98.65263698
Low-inc homeowner severe housing cost burden	90.11933787
Low-inc renter severe housing cost burden	99.08892596
Uncrowded housing	81.14974978
Health Outcomes	—
Insured adults	99.75619145
Arthritis	0.0
Asthma ER Admissions	90.5
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	90.6
Cognitively Disabled	90.0
Physically Disabled	80.2

Heart Attack ER Admissions	73.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	100.0
SLR Inundation Area	0.0
Children	92.8
Elderly	2.9
English Speaking	70.6
Foreign-born	39.3
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	91.8
Traffic Density	12.7
Traffic Access	23.0
Other Indices	—
Hardship	1.1
Other Decision Support	—
2016 Voting	62.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	5.00
Healthy Places Index Score for Project Location (b)	98.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	The lot acreage was adjusted to match the site plan provided by the client.
Construction: Off-Road Equipment	Assumed all construction equipment will be utilized 8 hours per work day. Replaced Tractors/Loaders/Backhoes with Crawler Tractors in the Site Preparation and Grading Phases.
Operations: Vehicle Data	Adjusted trip rate for Apartments Mid Rise to match ITE 11th edition trip rate to match ITE 11th Edition rates for Affordable Housing and Multifamily Housing (Mid-Rise) as a conservative analysis.
Operations: Hearths	Removed wood burning stoves and fireplaces in accordance with SCAQMD Rule 445. Removed gas and propane fireplaces as neither are proposed for the Project.

ATTACHMENT B: SITE 2 LUNADA BAY CALEEMOD OUTPUT SHEETS

24-103 PVE Site 2 Lunada Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	24-103 PVE Site 2 Lunada
Construction Start Date	12/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	20.4
Location	2325 Palos Verdes Dr W, Palos Verdes Estates, CA 90274, USA
County	Los Angeles-South Coast
City	Palos Verdes Estates
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4646
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

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	20.0	Dwelling Unit	0.60	19,200	3,437	—	59.0	—

Parking Lot	20.0	Space	0.07	0.00	0.00	—	—	—

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.	24.4	7.00	9.93	0.02	0.48	0.30	2,150
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	1.65	18.0	15.7	0.05	5.05	1.62	6,518
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	0.54	1.91	2.68	< 0.005	0.23	0.08	577
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.10	0.35	0.49	< 0.005	0.04	0.02	95.5
Exceeds (Daily Max)	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—
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)	—	—	—	—	—	—	—
2026	24.4	7.00	9.93	0.02	0.48	0.30	2,150
Daily - Winter (Max)	—	—	—	—	—	—	—
2025	1.65	18.0	15.7	0.05	5.05	1.62	6,518
2026	0.77	7.01	9.79	0.02	0.48	0.30	2,139
Average Daily	—	—	—	—	—	—	—
2025	0.08	0.94	0.88	< 0.005	0.23	0.07	313
2026	0.54	1.91	2.68	< 0.005	0.13	0.08	577
Annual	—	—	—	—	—	—	—
2025	0.01	0.17	0.16	< 0.005	0.04	0.01	51.9
2026	0.10	0.35	0.49	< 0.005	0.02	0.02	95.5

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.	1.14	0.54	6.64	0.01	1.24	0.32	1,565
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	1.03	0.57	5.04	0.01	1.24	0.32	1,501
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	0.89	0.40	4.11	0.01	0.79	0.21	1,042
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.16	0.07	0.75	< 0.005	0.14	0.04	173
Exceeds (Daily Max)	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—

Threshold	55.0	55.0	550	150	150	55.0	—
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	0.59	0.47	5.49	0.01	1.23	0.32	1,379
Area	0.54	0.01	1.13	< 0.005	< 0.005	< 0.005	3.04
Energy	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	144
Water	—	—	—	—	—	—	11.3
Waste	—	—	—	—	—	—	27.8
Refrig.	—	—	—	—	—	—	0.14
Total	1.14	0.54	6.64	0.01	1.24	0.32	1,565
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	0.58	0.51	5.01	0.01	1.23	0.32	1,318
Area	0.44	0.00	0.00	0.00	0.00	0.00	0.00
Energy	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	144
Water	—	—	—	—	—	—	11.3
Waste	—	—	—	—	—	—	27.8
Refrig.	—	—	—	—	—	—	0.14
Total	1.03	0.57	5.04	0.01	1.24	0.32	1,501
Average Daily	—	—	—	—	—	—	—
Mobile	0.37	0.33	3.31	0.01	0.78	0.20	857
Area	0.51	0.01	0.78	< 0.005	< 0.005	< 0.005	2.09

Energy	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	144
Water	—	—	—	—	—	—	11.3
Waste	—	—	—	—	—	—	27.8
Refrig.	—	—	—	—	—	—	0.14
Total	0.89	0.40	4.11	0.01	0.79	0.21	1,042
Annual	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.60	< 0.005	0.14	0.04	142
Area	0.09	< 0.005	0.14	< 0.005	< 0.005	< 0.005	0.35
Energy	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	23.8
Water	—	—	—	—	—	—	1.87
Waste	—	—	—	—	—	—	4.60
Refrig.	—	—	—	—	—	—	0.02
Total	0.16	0.07	0.75	< 0.005	0.14	0.04	173

3. Construction Emissions Details

3.1. Demolition (2025) - 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	1.36	12.8	13.2	0.02	0.53	0.48	2,211
Demolition	—	—	—	—	3.28	0.50	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.53	0.54	< 0.005	0.02	0.02	90.8
Demolition	—	—	—	—	0.13	0.02	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.10	0.10	< 0.005	< 0.005	< 0.005	15.0
Demolition	—	—	—	—	0.02	< 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	0.04	0.05	0.59	0.00	0.13	0.03	133
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	5.08	1.92	0.03	1.12	0.34	4,174
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.01	< 0.005	5.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.21	0.08	< 0.005	0.05	0.01	172
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.04	0.01	< 0.005	0.01	< 0.005	28.4

3.3. Site Preparation (2025) - 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	0.66	5.62	6.13	0.01	0.35	0.33	920

Dust From Material Movement	—	—	—	—	0.28	0.03	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	2.52
Dust From Material Movement	—	—	—	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.42
Dust From Material Movement	—	—	—	—	< 0.005	< 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	0.29	0.00	0.07	0.02	66.4
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	0.18
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	0.03
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. Grading (2025) - 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	1.62	14.7	13.6	0.02	0.75	0.69	2,303
Dust From Material Movement	—	—	—	—	1.98	0.91	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.07	< 0.005	< 0.005	< 0.005	12.6
Dust From Material Movement	—	—	—	—	0.01	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	2.09
Dust From Material Movement	—	—	—	—	< 0.005	< 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	0.03	0.04	0.44	0.00	0.10	0.02	99.5
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	0.55
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	0.09
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

3.7. Building Construction (2025) - 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	0.75	7.34	9.02	0.02	0.31	0.29	1,883
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.10	0.12	< 0.005	< 0.005	< 0.005	25.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	4.27
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.06	0.07	0.85	0.00	0.19	0.04	191
Vendor	< 0.005	0.08	0.04	< 0.005	0.02	0.01	70.8
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	2.66
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.97
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	0.44
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.16
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - 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	0.71	6.87	8.96	0.02	0.28	0.25	1,882
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.71	6.87	8.96	0.02	0.28	0.25	1,882
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.19	1.79	2.33	< 0.005	0.07	0.07	490
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.33	0.43	< 0.005	0.01	0.01	81.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.05	0.06	0.93	0.00	0.19	0.04	198
Vendor	< 0.005	0.07	0.04	< 0.005	0.02	0.01	69.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.05	0.06	0.79	0.00	0.19	0.04	187

Vendor	< 0.005	0.08	0.04	< 0.005	0.02	0.01	69.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	0.01	0.02	0.22	0.00	0.05	0.01	49.5
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	18.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.01	< 0.005	8.20
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - 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	0.59	5.08	6.24	0.01	0.21	0.20	976
Paving	0.04	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.09	< 0.005	< 0.005	< 0.005	13.4
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	0.01	0.02	< 0.005	< 0.005	< 0.005	2.21
Paving	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.06	0.07	1.13	0.00	0.23	0.05	241
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
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	3.17
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	0.52
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

3.13. Architectural Coating (2026) - 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	0.16	1.14	1.51	< 0.005	0.03	0.03	179
Architectural Coatings	24.2	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	2.45
Architectural Coatings	0.33	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.41
Architectural Coatings	0.06	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.01	0.01	0.19	0.00	0.04	0.01	39.6
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
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.52
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	0.09
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)	—	—	—	—	—	—	—
Apartments Mid Rise	0.59	0.47	5.49	0.01	1.23	0.32	1,379

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.59	0.47	5.49	0.01	1.23	0.32	1,379
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	0.58	0.51	5.01	0.01	1.23	0.32	1,318
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.58	0.51	5.01	0.01	1.23	0.32	1,318
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	0.07	0.06	0.60	< 0.005	0.14	0.04	142
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.07	0.06	0.60	< 0.005	0.14	0.04	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	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	69.9
Parking Lot	—	—	—	—	—	—	2.55
Total	—	—	—	—	—	—	72.5
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	69.9
Parking Lot	—	—	—	—	—	—	2.55
Total	—	—	—	—	—	—	72.5
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	11.6
Parking Lot	—	—	—	—	—	—	0.42
Total	—	—	—	—	—	—	12.0

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)	—	—	—	—	—	—	—
Apartments Mid Rise	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	71.4
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	71.4
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	71.4
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.06	0.02	< 0.005	< 0.005	< 0.005	71.4
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	11.8
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	11.8

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	0.41	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—
Landscape Equipment	0.10	0.01	1.13	< 0.005	< 0.005	< 0.005	3.04
Total	0.54	0.01	1.13	< 0.005	< 0.005	< 0.005	3.04
Daily, Winter (Max)	—	—	—	—	—	—	—

Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.41	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—
Total	0.44	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	0.08	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—
Landscape Equipment	0.01	< 0.005	0.14	< 0.005	< 0.005	< 0.005	0.35
Total	0.09	< 0.005	0.14	< 0.005	< 0.005	< 0.005	0.35

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	11.3
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	11.3
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	11.3
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	11.3
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	1.87
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	1.87

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	27.8
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	27.8
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	27.8
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	27.8
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	4.60
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	4.60

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.14
Total	—	—	—	—	—	—	0.14
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.14

Total	—	—	—	—	—	—	0.14
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.02
Total	—	—	—	—	—	—	0.02

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
Demolition	Demolition	12/1/2025	12/19/2025	5.00	15.0	—
Site Preparation	Site Preparation	12/20/2025	12/22/2025	5.00	1.00	—
Grading	Grading	12/23/2025	12/24/2025	5.00	2.00	—
Building Construction	Building Construction	12/25/2025	5/13/2026	5.00	100	—
Paving	Paving	5/14/2026	5/20/2026	5.00	5.00	—
Architectural Coating	Architectural Coating	5/21/2026	5/27/2026	5.00	5.00	—

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
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37

Site Preparation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Grading	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	57.5	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	14.4	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	2.14	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.88	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	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	38,880	12,960	0.00	0.00	183

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	3,447	—
Site Preparation	—	—	1.00	0.00	—
Grading	—	—	3.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.07

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%
Parking Lot	0.07	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005

2026	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
Apartments Mid Rise	94.0	174	138	40,776	934	1,729	1,371	405,105
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	20
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	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)
38880	12,960	0.00	0.00	183

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	73,317	346	0.0330	0.0040	222,137
Parking Lot	2,671	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)
Apartments Mid Rise	745,476	58,914
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)

Apartments Mid Rise	14.7	—
Parking Lot	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	5.08	annual days of extreme heat
Extreme Precipitation	3.85	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 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 (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	0	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	0	0	0	N/A
Wildfire	0	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	26.7
AQ-PM	61.3
AQ-DPM	4.94
Drinking Water	11.3
Lead Risk Housing	33.5
Pesticides	0.00
Toxic Releases	87.8
Traffic	43.6
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00

Haz Waste Facilities/Generators	1.80
Impaired Water Bodies	58.7
Solid Waste	35.7
Sensitive Population	—
Asthma	1.50
Cardio-vascular	5.21
Low Birth Weights	65.8
Socioeconomic Factor Indicators	—
Education	0.42
Housing	6.10
Linguistic	42.8
Poverty	4.91
Unemployment	1.90

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	96.13755935
Employed	48.77454125
Median HI	99.61503914
Education	—
Bachelor's or higher	97.27960991
High school enrollment	15.50109072
Preschool enrollment	90.23482613
Transportation	—
Auto Access	73.42486847
Active commuting	9.046580264

Social	—
2-parent households	97.12562556
Voting	80.40549211
Neighborhood	—
Alcohol availability	60.87514436
Park access	38.29077377
Retail density	89.0157834
Supermarket access	58.7963557
Tree canopy	81.63736687
Housing	—
Homeownership	87.93789298
Housing habitability	97.39509817
Low-inc homeowner severe housing cost burden	82.77941743
Low-inc renter severe housing cost burden	93.77646606
Uncrowded housing	91.95431798
Health Outcomes	—
Insured adults	88.86179905
Arthritis	0.0
Asthma ER Admissions	92.9
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	90.1
Cognitively Disabled	92.5
Physically Disabled	84.3

Heart Attack ER Admissions	80.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	99.9
SLR Inundation Area	78.1
Children	86.0
Elderly	7.1
English Speaking	75.5
Foreign-born	34.8
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	88.6
Traffic Density	7.4
Traffic Access	23.0
Other Indices	—
Hardship	1.6
Other Decision Support	—
2016 Voting	71.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	6.00
Healthy Places Index Score for Project Location (b)	98.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	The lot acreage was adjusted to match the site plan provided by the client.
Construction: Off-Road Equipment	Assumed all construction equipment will be utilized 8 hours per work day. Replaced Tractors/Loaders/Backhoes with Crawler Tractors in the Site Preparation and Grading Phases.
Operations: Vehicle Data	Adjusted trip rate for Apartments Mid Rise to match ITE 11th edition trip rate to match ITE 11th Edition rates for Affordable Housing and Multifamily Housing (Mid-Rise) as a conservative analysis.
Operations: Hearths	Removed wood burning stoves and fireplaces in accordance with SCAQMD Rule 445. Removed gas and propane fireplaces as neither are proposed for the Project.
Construction: Construction Phases	Demolition timeframe adjusted from 10 days to 15 days to account for the amount of demolition onsite.

ATTACHMENT C: SITE 3 FIRST CHURCH OF CHRIST CALEEMOD OUTPUT SHEETS

24-103 PVE Site 3 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	24-103 PVE Site 3
Construction Start Date	12/2/2024
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	20.4
Location	33.79502756086427, -118.36863821152097
County	Los Angeles-South Coast
City	Palos Verdes Estates
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4652
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.28

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	116	Dwelling Unit	3.51	111,360	19,928	—	343	—

Parking Lot	116	Space	1.12	0.00	0.00	—	—	—

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.	1.47	11.4	19.7	0.03	1.61	0.66	4,192
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	39.7	37.5	33.5	0.05	7.82	4.52	5,779
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	2.90	7.40	12.2	0.02	1.01	0.42	2,619
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.53	1.35	2.23	< 0.005	0.18	0.08	434
Exceeds (Daily Max)	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—
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)	—	—	—	—	—	—	—
2026	1.47	11.4	19.7	0.03	1.61	0.66	4,192
Daily - Winter (Max)	—	—	—	—	—	—	—
2025	4.12	37.5	33.5	0.05	7.82	4.52	5,779
2026	39.7	11.5	18.9	0.03	1.61	0.66	4,128
Average Daily	—	—	—	—	—	—	—
2025	0.15	1.28	1.41	< 0.005	0.23	0.12	259
2026	2.90	7.40	12.2	0.02	1.01	0.42	2,619
Annual	—	—	—	—	—	—	—
2025	0.03	0.23	0.26	< 0.005	0.04	0.02	42.9
2026	0.53	1.35	2.23	< 0.005	0.18	0.08	434

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.	6.33	2.66	32.7	0.06	5.65	1.48	7,423
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	5.71	2.81	24.2	0.06	5.65	1.48	7,130
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	5.02	2.01	20.8	0.04	3.66	0.97	5,107
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.92	0.37	3.79	0.01	0.67	0.18	846
Exceeds (Daily Max)	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—

Threshold	55.0	55.0	550	150	150	55.0	—
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	3.15	2.27	26.0	0.06	5.62	1.46	6,317
Area	3.16	0.06	6.58	< 0.005	< 0.005	< 0.005	17.7
Energy	0.02	0.33	0.14	< 0.005	0.03	0.03	861
Water	—	—	—	—	—	—	65.3
Waste	—	—	—	—	—	—	162
Refrig.	—	—	—	—	—	—	0.80
Total	6.33	2.66	32.7	0.06	5.65	1.48	7,423
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	3.11	2.48	24.1	0.06	5.62	1.46	6,042
Area	2.58	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.02	0.33	0.14	< 0.005	0.03	0.03	861
Water	—	—	—	—	—	—	65.3
Waste	—	—	—	—	—	—	162
Refrig.	—	—	—	—	—	—	0.80
Total	5.71	2.81	24.2	0.06	5.65	1.48	7,130
Average Daily	—	—	—	—	—	—	—
Mobile	2.02	1.64	16.1	0.04	3.63	0.94	4,007
Area	2.98	0.04	4.50	< 0.005	< 0.005	< 0.005	12.1

Energy	0.02	0.33	0.14	< 0.005	0.03	0.03	861
Water	—	—	—	—	—	—	65.3
Waste	—	—	—	—	—	—	162
Refrig.	—	—	—	—	—	—	0.80
Total	5.02	2.01	20.8	0.04	3.66	0.97	5,107
Annual	—	—	—	—	—	—	—
Mobile	0.37	0.30	2.95	0.01	0.66	0.17	663
Area	0.54	0.01	0.82	< 0.005	< 0.005	< 0.005	2.00
Energy	< 0.005	0.06	0.03	< 0.005	< 0.005	< 0.005	142
Water	—	—	—	—	—	—	10.8
Waste	—	—	—	—	—	—	26.7
Refrig.	—	—	—	—	—	—	0.13
Total	0.92	0.37	3.79	0.01	0.67	0.18	846

3. Construction Emissions Details

3.1. Site Preparation (2025) - 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	4.05	37.5	32.4	0.05	1.93	1.78	5,547
Dust From Material Movement	—	—	—	—	5.66	2.69	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.51	0.44	< 0.005	0.03	0.02	76.0

Dust From Material Movement	—	—	—	—	0.08	0.04	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.08	< 0.005	< 0.005	< 0.005	12.6
Dust From Material Movement	—	—	—	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.07	0.08	1.03	0.00	0.23	0.05	232
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	3.23
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	0.53
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 (2025) - 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	2.30	20.6	19.6	0.03	1.15	1.05	3,145
Dust From Material Movement	—	—	—	—	2.26	0.94	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.45	0.43	< 0.005	0.03	0.02	68.9
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	0.08	0.08	< 0.005	< 0.005	< 0.005	11.4
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	0.06	0.07	0.88	0.00	0.20	0.05	199
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	< 0.005	< 0.005	4.43
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
Annual	—	—	—	—	—	—	—
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

3.5. Building Construction (2025) - 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	1.21	11.3	14.1	0.03	0.47	0.43	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.29	0.36	< 0.005	0.01	0.01	67.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	0.07	< 0.005	< 0.005	< 0.005	11.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.35	0.40	4.93	0.00	1.09	0.26	1,108
Vendor	0.01	0.47	0.22	< 0.005	0.11	0.03	410
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	0.03	0.01	28.6
Vendor	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	10.5
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	4.74
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.73
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2026) - 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	1.16	10.7	14.1	0.03	0.41	0.38	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	1.16	10.7	14.1	0.03	0.41	0.38	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.70	6.45	8.51	0.02	0.25	0.23	1,596
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.18	1.55	< 0.005	0.05	0.04	264
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.31	0.32	5.39	0.00	1.09	0.26	1,148
Vendor	0.01	0.43	0.21	< 0.005	0.11	0.03	404
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.31	0.36	4.60	0.00	1.09	0.26	1,086
Vendor	0.01	0.45	0.21	< 0.005	0.11	0.03	404
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	0.18	0.24	2.91	0.00	0.65	0.15	667
Vendor	0.01	0.27	0.13	< 0.005	0.07	0.02	244

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	0.03	0.04	0.53	0.00	0.12	0.03	110
Vendor	< 0.005	0.05	0.02	< 0.005	0.01	< 0.005	40.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2026) - 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	0.83	7.46	10.4	0.02	0.31	0.28	1,604
Paving	0.16	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.37	0.51	< 0.005	0.02	0.01	79.1
Paving	0.01	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.09	< 0.005	< 0.005	< 0.005	13.1
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	0.07	0.09	1.10	0.00	0.26	0.06	260
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	0.06	0.00	0.01	< 0.005	13.0
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	0.01	0.00	< 0.005	< 0.005	2.16
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 (2026) - 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	0.16	1.14	1.51	< 0.005	0.03	0.03	179
Architectural Coatings	39.5	—	—	—	—	—	—
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	0.07	< 0.005	< 0.005	< 0.005	8.81
Architectural Coatings	1.95	—	—	—	—	—	—
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	1.46
Architectural Coatings	0.36	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.06	0.07	0.92	0.00	0.22	0.05	217
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	0.05	0.00	0.01	< 0.005	10.9
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	0.01	0.00	< 0.005	< 0.005	1.80
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)	—	—	—	—	—	—	—
Apartments Mid Rise	3.15	2.27	26.0	0.06	5.62	1.46	6,317
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	3.15	2.27	26.0	0.06	5.62	1.46	6,317
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	3.11	2.48	24.1	0.06	5.62	1.46	6,042
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total	3.11	2.48	24.1	0.06	5.62	1.46	6,042
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	0.37	0.30	2.95	0.01	0.66	0.17	663
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.37	0.30	2.95	0.01	0.66	0.17	663

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	406
Parking Lot	—	—	—	—	—	—	40.8
Total	—	—	—	—	—	—	446
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	406
Parking Lot	—	—	—	—	—	—	40.8
Total	—	—	—	—	—	—	446
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	67.2
Parking Lot	—	—	—	—	—	—	6.75
Total	—	—	—	—	—	—	73.9

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)	—	—	—	—	—	—	—

Apartments Mid Rise	0.02	0.33	0.14	< 0.005	0.03	0.03	414
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.33	0.14	< 0.005	0.03	0.03	414
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	0.02	0.33	0.14	< 0.005	0.03	0.03	414
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.33	0.14	< 0.005	0.03	0.03	414
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	< 0.005	0.06	0.03	< 0.005	< 0.005	< 0.005	68.6
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.06	0.03	< 0.005	< 0.005	< 0.005	68.6

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	2.39	—	—	—	—	—	—
Architectural Coatings	0.19	—	—	—	—	—	—
Landscape Equipment	0.58	0.06	6.58	< 0.005	< 0.005	< 0.005	17.7
Total	3.16	0.06	6.58	< 0.005	< 0.005	< 0.005	17.7
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	2.39	—	—	—	—	—	—
Architectural Coatings	0.19	—	—	—	—	—	—
Total	2.58	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	0.44	—	—	—	—	—	—
Architectural Coatings	0.04	—	—	—	—	—	—
Landscape Equipment	0.07	0.01	0.82	< 0.005	< 0.005	< 0.005	2.00
Total	0.54	0.01	0.82	< 0.005	< 0.005	< 0.005	2.00

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	65.3
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	65.3
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	65.3
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	65.3
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	10.8
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	10.8

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	162
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	162
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	162
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	162
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	26.7
Parking Lot	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	26.7

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)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.80
Total	—	—	—	—	—	—	0.80
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.80
Total	—	—	—	—	—	—	0.80
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.13

Total	—	—	—	—	—	—	0.13

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	12/1/2025	12/5/2025	5.00	5.00	—
Grading	Grading	12/9/2025	12/18/2025	5.00	8.00	—
Building Construction	Building Construction	12/19/2025	11/5/2026	5.00	230	—
Paving	Paving	11/9/2026	12/2/2026	5.00	18.0	—
Architectural Coating	Architectural Coating	12/3/2026	12/28/2026	5.00	18.0	—

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	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Site Preparation	Crawler Tractors	Diesel	Average	4.00	8.00	87.0	0.43
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Grading	Crawler Tractors	Diesel	Average	3.00	8.00	87.0	0.43

Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	2.00	8.00	10.0	0.56
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	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	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT

Building Construction	—	—	—	—
Building Construction	Worker	83.5	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	12.4	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	16.7	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	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	225,504	75,168	0.00	0.00	2,927

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	17.5	0.00	—
Grading	—	—	20.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.12

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%
Parking Lot	1.12	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005
2026	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
Apartments Mid Rise	543	974	777	232,870	4,388	7,877	6,283	1,882,414
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	116
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	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)
225504	75,168	0.00	0.00	2,927

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	425,237	346	0.0330	0.0040	1,288,394
Parking Lot	42,738	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)
Apartments Mid Rise	4,323,761	341,589
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	85.7	—
Parking Lot	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	5.15	annual days of extreme heat
Extreme Precipitation	4.70	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 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 (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	26.7
AQ-PM	61.9
AQ-DPM	11.9
Drinking Water	10.7
Lead Risk Housing	68.3
Pesticides	51.3
Toxic Releases	92.8
Traffic	47.8
Effect Indicators	—
CleanUp Sites	63.7
Groundwater	0.00
Haz Waste Facilities/Generators	40.9
Impaired Water Bodies	72.2
Solid Waste	70.4
Sensitive Population	—
Asthma	1.69
Cardio-vascular	5.50
Low Birth Weights	18.8

Socioeconomic Factor Indicators	—
Education	1.15
Housing	36.7
Linguistic	16.4
Poverty	13.7
Unemployment	22.6

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	89.73437701
Employed	27.51186963
Median HI	98.06236366
Education	—
Bachelor's or higher	96.25304761
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	92.6344155
Active commuting	6.03105351
Social	—
2-parent households	73.42486847
Voting	81.71435904
Neighborhood	—
Alcohol availability	86.21840113
Park access	81.35506224
Retail density	18.54228153

Supermarket access	21.68612858
Tree canopy	72.74477095
Housing	—
Homeownership	94.45656358
Housing habitability	91.49236494
Low-inc homeowner severe housing cost burden	41.7425895
Low-inc renter severe housing cost burden	86.71885025
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	93.18619274
Arthritis	0.0
Asthma ER Admissions	93.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	94.9
Cognitively Disabled	98.4
Physically Disabled	71.5
Heart Attack ER Admissions	82.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	48.6
Physical Health Not Good	0.0
Stroke	0.0

Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	100.0
SLR Inundation Area	88.7
Children	55.0
Elderly	5.7
English Speaking	93.1
Foreign-born	19.6
Outdoor Workers	87.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	91.9
Traffic Density	16.9
Traffic Access	23.0
Other Indices	—
Hardship	3.2
Other Decision Support	—
2016 Voting	75.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	9.00
Healthy Places Index Score for Project Location (b)	95.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Adjusted lot acreage to match site plan provided by the client
Construction: Construction Phases	Removed demolition phase as the onsite Church will remain during development.
Construction: Off-Road Equipment	Assumed all construction equipment will be utilized 8 hours per work day. Replaced Tractors/Loaders/Backhoes with Crawler Tractors in the Site Preparation and Grading Phases.
Operations: Vehicle Data	Adjusted trip rate for Apartments Mid Rise to match ITE 11th edition trip rate to match ITE 11th Edition rates for Affordable Housing and Multifamily Housing (Mid-Rise) as a conservative analysis

ATTACHMENT D: FUEL CALCULATIONS

Model Output: OFFROAD2021 (v1.0.7) Emissions Inventory
Region Type: Sub-Area
Region: Los Angeles (SC)
Calendar Year: 2025 <- Construction Start Year
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	Calendar Year	VehClass	MdlYr	HP_Bin	Fuel	Fuel Consumption	Horsepower Hours	Fuel Rate
Los Angeles (SC)	2025	Construction and Mining - Rubber Tired Dozers	Aggregate	Aggregate	Diesel	200236.1302	4219514.168	0.047454783
Los Angeles (SC)	2025	Construction and Mining - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Diesel	5359588.934	100894387	0.053120784
Los Angeles (SC)	2025	Construction and Mining - Graders	Aggregate	Aggregate	Diesel	801808.3578	15557225.2	0.051539291
Los Angeles (SC)	2025	Construction and Mining - Excavators	Aggregate	Aggregate	Diesel	5479149.856	106983113.7	0.051215091
Los Angeles (SC)	2025	Construction and Mining - Scrapers	Aggregate	Aggregate	Diesel	2065209.339	42944091.37	0.048090652
Los Angeles (SC)	2025	Industrial - Forklifts	Aggregate	Aggregate	Diesel	3109302.057	58386309.29	0.053253958
Los Angeles (SC)	2025	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Diesel	1151795.618	14771265.3	0.07797542
Los Angeles (SC)	2025	Construction and Mining - Cranes	Aggregate	Aggregate	Diesel	611697.4797	11538770.14	0.053012364
Los Angeles (SC)	2025	Light Commercial - Misc - Welders	Aggregate	Aggregate	Diesel	1279243.051	40333273.8	0.031716817
Los Angeles (SC)	2025	Construction and Mining - Pavers	Aggregate	Aggregate	Diesel	352726.9244	6846867.962	0.051516537
Los Angeles (SC)	2025	Construction and Mining - Paving Equipment	Aggregate	Aggregate	Diesel	391254.724	7646871.175	0.051165335
Los Angeles (SC)	2025	Construction and Mining - Rollers	Aggregate	Aggregate	Diesel	932502.9469	17731002.5	0.052591665
Los Angeles (SC)	2025	Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Diesel	246897.3259	8227921.25	0.030007254
Los Angeles (SC)	2025	Construction and Mining - Misc - Concrete/Industrial Saws	Aggregate	Aggregate	Diesel	9290.335209	221146.2	0.042009925
Los Angeles (SC)	2025	Construction and Mining - Crawler Tractors	Aggregate	Aggregate	Diesel	1719958.979	34066510.68	0.050488264
Los Angeles (SC)	2025	Construction and Mining - Off-Highway Trucks	Aggregate	Aggregate	Diesel	2281997.015	46637030.7	0.04893101

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Los Angeles (SC)
Season: Annual 2026 Construction start year
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	VMT	Fuel Consumption	Fuel Rate
Los Angeles (SC)	2026	MHDT	Aggregate	Aggregate	Diesel	2536950.689	282.4978542	8.98
Los Angeles (SC)	2026	HHDT	Aggregate	Aggregate	Diesel	6819808.694	1098.590287	6.21
Los Angeles (SC)	2026	LHDT1	Aggregate	Aggregate	Diesel	2704306.099	130.8276817	20.67
Los Angeles (SC)	2026	LHDT2	Aggregate	Aggregate	Diesel	1209848.539	69.10133677	17.51
						Average MGP From Vehicle Splits		7.555146625

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Los Angeles (SC)
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	VMT	Fuel Consumption

Los Angeles (SC)	2026	LDA	Aggregate	Aggregate	Gasoline	125598332.2	4156.999113	30.21
Los Angeles (SC)	2026	LDT1	Aggregate	Aggregate	Gasoline	10988219.26	436.9194811	25.15
Los Angeles (SC)	2026	LDT2	Aggregate	Aggregate	Gasoline	66847121.76	2677.276355	24.97
Los Angeles (SC)	2026	MCY	Aggregate	Aggregate	Gasoline	1005181.469	24.23505076	41.48

ATTACHMENT E: DEMO CALCULATIONS

Palos Verdes Estates

Estimates of Demolition Debris

SITE 1

Building Demolition 2 two story buildings

Building	Height(ft)	Area (ft2)	Volume (ft3)	Demo Building Volume (cy)
1	20	15450	309000	3777
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
			0	0
Total		15450	309000	3777

Weight of the Building Demolition Debris (ton/cy): 0.5

Total Weight of Building Debris **1888** **tons**

Note 1: Total square footage of existing school buildings contained in the project description
Note 2: FEMA Debris Estimating Field Guide, FEMA 329. September 2010
Note 3: CalEEMod User Guide 21.63
Note 4: 0.5 ft for default hardscape height

22.25 acres

Hardscape Demolition

Weight of Hardscape 144 lb/ft3

Area	Height (ft)	Area (ft2)	Volume (cf)	Weight (lbs)	Weight (tons)
1	0.5	18485	9243	1330920	665
2	0	0	0	0	0
3	0	0	0	0	0
Total		**18485**	**9243**	**1330920**	**665** **tons**

Total Demolition Weight **2554 tons**

SITE 2

Building Demolition

Building	Height(ft)	Area (ft2)	Volume (f	Demo Building Volume (cy)
1	20	27609	552180	6749
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
			0	0
Total		27609	552180	6749

Weight of the Building Demolition Debris (ton/cy): 0.5

Total Weight of Building Debris **3374** **tons**

Note 1: Total square footage of existing school buildings contained in the p
Note 2: FEMA Debris Estimating Field Guide, FEMA 329. September 2010
Note 3: CalEEMod User Guide
Note 4: 0.5 ft for default hardscape height

0.68

Hardscape Demolition

Weight of Hardscape 144 lb/ft3

Area	Height (ft)	Area (ft2)	olume (cf	Weight (lbs	eight (tons)
1	0.5	2011.918	1006	144858	72
2	0	0	0	0	0
3	0	0	0	0	0
Total		**2011.918**	**1006**	**144858**	**72** **tons**

Total Demolition Weight **3447 tons**