

To: City of Orange Planning Department

Drafted by: Tiffany Dang, EPD Solutions, Inc.

Reviewed by: Tina Yuan, Alex J. Garber, EPD Solutions, Inc.

Date: 10/3/2025

Re: Air Quality, Energy, and Greenhouse Gas Impact Analysis for the North Tustin Street Project, EPD Project Number 25-032

PROJECT OVERVIEW

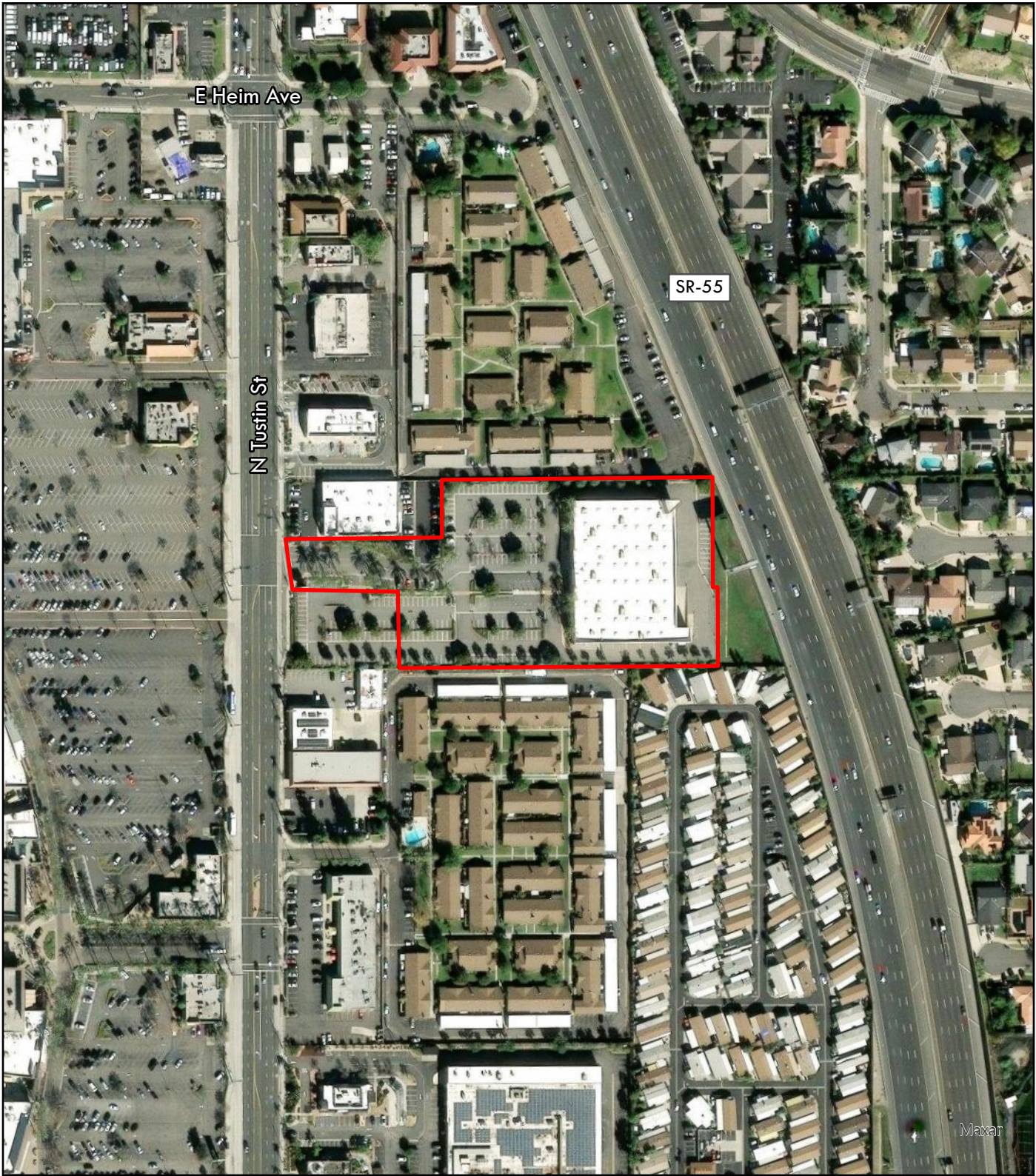
This technical memorandum presents an analysis of the air quality, energy, and greenhouse gas (GHG) impacts for the North Tustin Street Project (proposed Project) in the city of Orange. The Project site is located at 2375 North Tustin Street in the northern portion of the city of Orange. Regional access to the Project site is provided by SR-55, from either the Katella Avenue interchange to the south or the Lincoln Avenue interchange to the north, which both intersect with North Tustin Street, a primary arterial.

The Project site comprises one parcel encompassing approximately 4.235 gross acres. The parcel is identified by Orange County Assessor's Parcel Number (APN) 372-642-31. The Project site is fully developed and currently contains a vacant 45,676-square-foot (SF) Best Buy retail store building that is approximately 30 feet in height, along with a surface parking lot and landscaping.

The applicant for the Project is requesting approval from the City of Orange to demolish the existing structure and improvements on the Project site and construct 71 paired and detached residences, along with open space/recreation and parking. The residential structures would be three stories high. Each residential unit would have three or four bedrooms, ranging in size from approximately 2,008 to 2,117 SF, and would be developed above two-car garages. The 71 residences on the 4.235-acre site would result in a density of 16.76 units per acre. The Project would include parking, open space, ornamental landscaping, and associated infrastructure. The aerial of the Project site and the conceptual site plan are shown in Figure 1, *Project Aerial*, and Figure 2, *Conceptual Site Plan*.

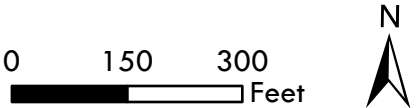
The Project requests the approval of a General Plan Amendment to change the land use from General Commercial (GC) to Medium Density Residential (MDR), which allows residential densities between 15 and 24 dwelling units per acre. The Project also includes a zone change to change the site zoning from Limited Business Tustin Redevelopment Project Area (C-TR) to Multiple-Family Residential (R3).

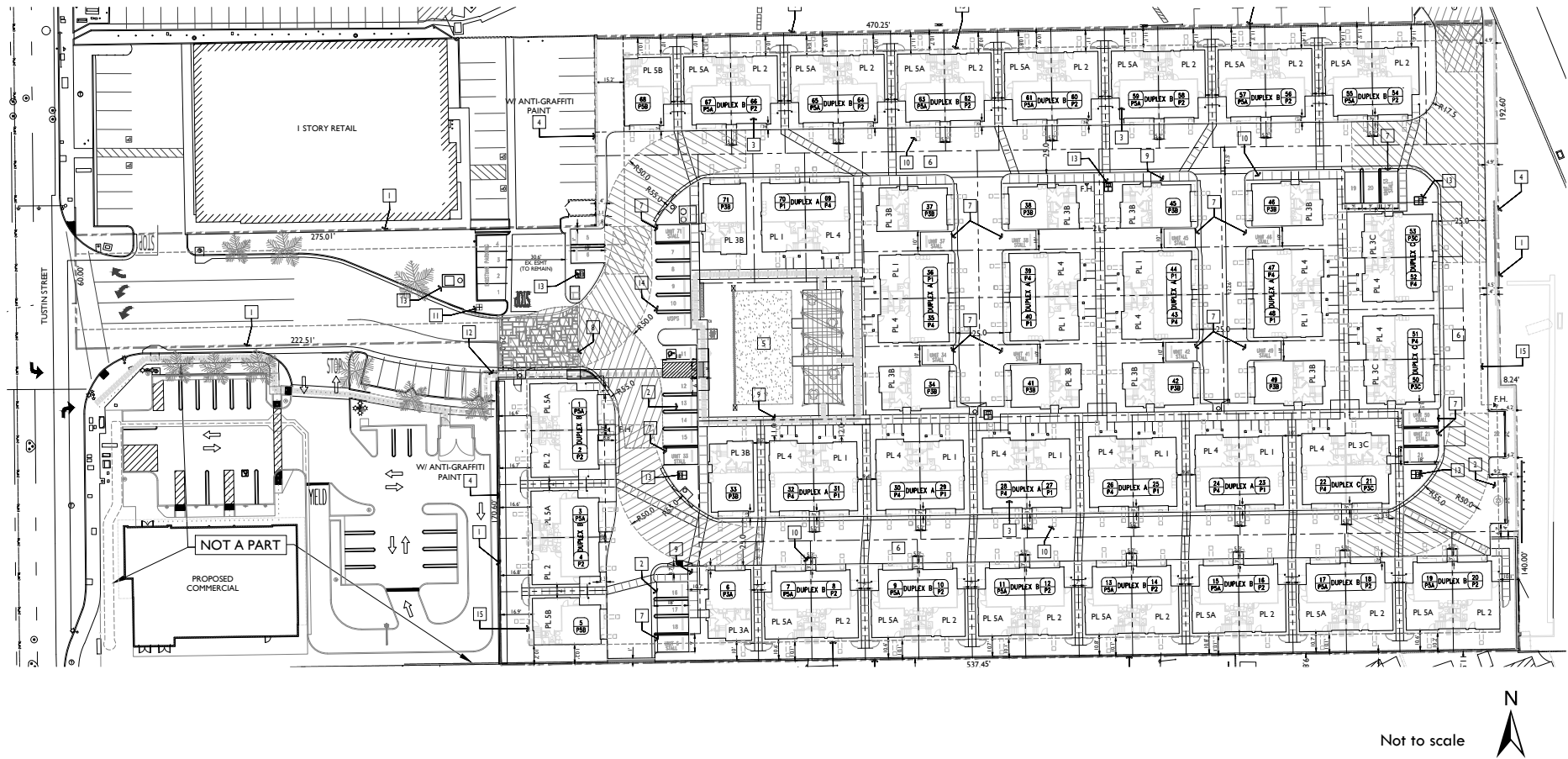
To support the California Environmental Quality Act (CEQA) document, this report analyzes the proposed Project's construction and operational impacts to air quality (emission of criteria pollutants), energy usage, and GHG emissions using the California Emissions Estimator Model (CalEEMod Version 2022.1) land use emission model and Emission Factor (EMFAC Version 2021) model. The Project site is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). Therefore, significance thresholds from SCAQMD are used.



Legend

 Project Site





SUMMARY OF AIR QUALITY, ENERGY, AND GHG IMPACTS

Air Quality

The proposed Project's maximum daily emissions for construction would not exceed SCAQMD's regional or local thresholds of significance for any criteria pollutants. Operation of the Project would not exceed SCAQMD's regional thresholds of significance. Projects that do not exceed regional thresholds are assumed not to have a significant impact on both a project level and a cumulative level. The proposed Project also aligns with SCAQMD'S 2022 Air Quality Management Plan (AQMP), reflecting adherence to regional air quality management goals and standards. Furthermore, odors produced by the construction and operation of the proposed Project would be minimal. Additionally, all construction activities would comply with applicable SCAQMD rules and regulations, including Rule 402, Rule 403, and Rule 1113 as further described in the air quality analysis section. Impacts on air quality would therefore be less than significant and no mitigation would be required.

Energy

The proposed Project's energy consumption for construction activities would be conditioned to require compliance with existing fuel standards, machinery efficiency standards, and California Air Resources Board (CARB) requirements that limit idling of construction trucks and equipment. 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. Additionally, through compliance with existing standards, operation of the Project would not result in an energy demand on a per-development basis that is greater than other development projects in Southern California. Furthermore, the proposed Project would be required to meet the California Code of Regulations (CCR) Title 24 energy efficiency standards and comply with all applicable City energy codes. The Project buildings would install solar panels in compliance with current Title 24 requirements. Therefore, the Project would not inhibit the use of, and would instead allow for, future flexibility relating to renewable energy. Overall, the Project would therefore result in less-than-significant impacts related to inefficient, wasteful, or unnecessary consumption of energy and future growth of renewable energy, and no mitigation would be required.

GHG Emissions

The proposed Project's construction and operational GHG emissions would total 896 metric tons of carbon dioxide equivalent (MTCO_{2e}). The Project's total GHG emissions would not exceed SCAQMD's Tier III significance threshold of 3,000 MTCO_{2e} per year. Additionally, the proposed Project is consistent with the actions and measures of the City's General Plan, CARB's 2022 Scoping Plan, and SCAG's 2024 Connect SoCal and would not interfere with the policies and goals set within those plans. Therefore, the Project would have a less-than-significant impact on GHG emissions and no mitigation would be required.

METHODOLOGY

To calculate the construction and operational impacts, air quality emissions, energy consumption, and GHG emissions were estimated using CalEEMod v. 2022.1 and EMFAC v. 2021. The passenger vehicles were analyzed using the CalEEMod default trip distance information.¹ Table 1, *Construction Schedule*, shows the construction schedule modeled. Following CalEEMod's default schedule, construction would last approximately 14 months.

Table 1: Construction Schedule

Activity	Start Date	End Date	Total Working Days
Demolition	9/1/2026	9/29/2026	20
Site Preparation	9/30/2026	10/7/2026	5
Grading	10/8/2026	10/19/2026	8
Building Construction	10/20/2026	9/7/2027	230
Paving	9/8/2027	10/3/2027	18
Architectural Coating	10/4/2027	10/29/2027	18

Source: CalEEMod Output Sheets (see Appendix A).

To provide a Project specific analysis of potential impacts, the following non-default assumptions and adjustments were used in the CalEEMod emission model for this analysis:

- **Land Use:** The lot acreage and building square footage was adjusted to match the site plan.
- **Construction, Off-Road Equipment:** It was conservatively 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 to accurately measure acres disturbed. One diesel-powered crushing/processing equipment was added to the demolition phase to account for the crushing of demolition material.
- **Construction, Off-Road Equipment Emission Factors:** Emissions factors for diesel crushing equipment were input using EMFAC OFFROAD2021 values for the Orange County sub-area, 2026. Due to a bug in CalEEMod, emissions resulting from the crushing equipment were manually calculated (included as Appendix B) and added to the total grading phase emissions.
- **Construction, Dust from Material Movement:** Based on the Project's grading plan, the grading phase is expected to result in a net export of approximately 7,350 cubic yards of soil.
- **Construction, Demolition:** The Project proposes demolition of the existing retail building, parking lot, and hardscape. Demolition tonnage was provided by the Project Applicant.
- **Operations, Vehicle Data:** Weekday, Saturday, and Sunday trip rates were adjusted to match the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*, auto trip rates for single family attached housing (ITE Land Use Code 215).
- **Operations, Hearths:** Wood burning fireplaces and stoves were removed as they are prohibited by SCAQMD Rule 445.

¹ EPD utilized the Metropolitan Planning Organization (MPO) default data provided in CalEEMod, as it provides more accurate trip length data than the region-wide CSTDM trip length data.

Rock Crushing

In addition to PM₁₀ and PM_{2.5} derived from exhaust, emissions resulting from crushing asphalt hardscape had been calculated and added to CalEEMod's emissions outputs. This analysis assumes all crushing would occur during the demolition phase. Fugitive dust emissions comprised of PM₁₀ and PM_{2.5} were calculated using emission factors provided by AP-42, Section 11.19, *Crushed Stone Processing and Pulverized Mineral Processing* (United States Environmental Protection Agency, 2005). Pursuant to SCAQMD Rule 403, *Fugitive Dust*, it was assumed that crushing operations would utilize watering for dust suppression. Thus, controlled rates were used to estimate emissions for the proposed Project. The estimated emissions were added to the demolition phase. Calculations are included in Appendix B.

AIR QUALITY

Regional Emissions

The SCAQMD has adopted maximum daily emission thresholds (pounds/day) for the criteria pollutants during construction and operation of a project (South Coast Air Quality Management District, 2023). While incremental regional air quality impacts of an individual project are generally very small and difficult to measure, SCAQMD's regional maximum emission thresholds set standards to reduce the burden of SCAQMD to attain and maintain ambient air quality standards. The CalEEMod Project emissions along with regional construction and operational thresholds for each of the criteria pollutants are listed in Table 2, *Regional Construction Emission Estimates*, and Table 3, *Regional Operational Emission Estimates*, respectively. These emission thresholds apply to Project emissions generated both from on-site sources (such as off-road construction equipment and fugitive dust) and off-site sources (vehicle travel arriving to and leaving from the site).

Project construction would be required to comply with several SCAQMD rules and regulations which would further reduce impacts to air quality emissions. These rules include Rule 402, *Public Nuisance*, which prohibits the discharge of air contaminants that cause injury, nuisance, or annoyance to the public or damage to property; Rule 403, *Fugitive Dust*, which aims to minimize fugitive particulate matter dust from construction activities; and Rule 1113, *Architectural Coatings*, which only allows low VOC paints to be used. Compliance with Rules 403 and 1113 have been accounted for in the CalEEMod modeling. Project construction is assumed to water exposed areas to reduce fugitive dust. In addition, CalEEMod's default VOC content for residential architectural coatings is 50 grams per liter (g/L).

The CalEEMod output sheets for the proposed Project can be found in Appendix A, *CalEEMod Output Sheets*. Detailed tables showing the emissions from each construction phase can be found in Appendix C. As noted in Table 2, construction of the proposed lots would not exceed any of SCAQMD's regional construction thresholds. Therefore, the proposed Project would result in less-than-significant regional construction impacts.

Table 2: Regional Construction Emission Estimates

Construction Year	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Year 1 (2026)	3.9	34.7	32.1	0.1	7.7	4.4
Year 2 (2027)	66.9	10.5	15.4	<0.01	0.8	0.4
Maximum Daily Emissions 2026-2027	66.9	34.7	32.1	0.1	7.7	4.4
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, SO₂ = sulfur dioxide, PM₁₀ = particulate matter 10 microns in diameter, PM_{2.5} = particulate matter 2.5 microns in diameter

Source: CalEEMod Output Sheets (see Appendix A and Appendix C).

Operation of the Project would generate emissions of criteria pollutants from vehicle trips, residential equipment, and energy consumption. The Project's estimated maximum daily regional operational emissions estimates are provided in Table 3, *Regional Operational Emission Estimates*, would not exceed any of SCAQMD's regional operational thresholds. No mitigation would be required. Therefore, the Project would result in less-than-significant regional operational impacts.

Table 3: Regional Operational Emission Estimates

Operational Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Mobile	1.9	1.5	16.6	<0.1	4.3	1.1
Area	4.7	<0.1	4.0	<0.1	<0.1	<0.1
Energy	<0.1	0.7	0.3	<0.1	0.1	0.1
Operational Emissions	6.7	2.3	21.0	<0.1	4.4	1.2
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, SO₂ = sulfur dioxide, PM₁₀ = particulate matter 10 microns in diameter, PM_{2.5} = particulate matter 2.5 microns in diameter

Source: CalEEMod Output Sheets (see Appendix A).

Local Emissions

Localized significance thresholds (LSTs) were also adopted by the SCAQMD to evaluate projects which would not exceed the regional emission significance thresholds but may have the potential to exceed State and national air quality standards within a project's vicinity. 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 (South Coast Air Quality Management District, 2008a). 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 (PM₁₀ and PM_{2.5}), while regional thresholds include both reactive organic gases (ROG) and sulfur dioxide (SO₂).
3. Regional thresholds apply to emission sources located anywhere within the SCAQMD whereas the LSTs are location dependent and rely on the size of the project and emission location relative to the nearest sensitive receptor. A sensitive receptor 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 sensitive receptors include residences, schools, elderly care centers, and hospitals.

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

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

Using the SCAQMD's methodology to estimate acres of ground disturbance, the site preparation phase was determined to result in a maximum of 3.5 acres of ground disturbance per day. Therefore, the SCAQMD thresholds for a 2-acre and 5-acre site were interpolated to calculate thresholds for a 3.5-acre site, as

recommended in their methodology. Calculations for site disturbance can be found in Appendix C. Distance to the nearest sensitive receptor also determines the emission thresholds. There are existing residential communities to the north and south of the Project site, with the closest sensitive receptor approximately 5 meters (16 feet) south of the Project site. Therefore, the construction emission thresholds for 25 meters were used, since it is the closest receptor distance for thresholds provided by the LST mass look-up tables.

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

Table 4: Localized Construction Emission Estimates

Construction Year	Maximum Daily Regional Emissions (pounds/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Year 1 (2026)	34.6	31.0	7.4	4.3
Year 2 (2027)	10.2	14.0	0.4	0.3
Maximum Daily Emission 2026-2027	34.6	31.0	7.4	4.3
SCAQMD LST Screening Thresholds ¹	149	984	9.5	5.5
Threshold Exceeded?	No	No	No	No

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

¹Significance thresholds obtained by interpolating values for 2 acres and 5 acres at a receptor distance of 25 meters.

Source: CalEEMod Output Sheets (see Appendix A).

According to the SCAQMD LST methodology, LSTs apply to project-related stationary and mobile sources. Projects that involve mobile sources that spend long periods queuing and idling at a site, such as transfer facilities or warehousing and distribution buildings, have the potential to exceed the operational LSTs. The Project would operate as a residential community, which does not typically involve diesel vehicles regularly idling or queuing for long periods. Therefore, due to the lack of significant stationary source emissions or idling diesel-powered vehicles, impacts related to operational LSTs are presumed to be less than significant.

Air Quality Management Plan Consistency

The Project site is located in the South Coast Air Basin, which is within the jurisdictional boundaries of the SCAQMD. The SCAQMD and Southern California Association of Governments (SCAG) are responsible for preparing the Air Quality Management Plan (AQMP), which addresses federal and State Clean Air Act (CAA) requirements. The 2022 AQMP details goals, policies, and programs for improving air quality in the South Coast Air Basin. The 2022 AQMP is based on regional growth projections developed by SCAG.

As described in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook (1993), for purposes of analyzing consistency with the AQMP, if a proposed project would result in growth that is substantially greater than what was anticipated, then the proposed project would conflict with the AQMP. On the other hand, if a project's density is within the anticipated growth of a jurisdiction, its emissions would be consistent with the assumptions in the AQMP, and the project would not conflict with SCAQMD's attainment plans. In addition, the SCAQMD considers a project consistent with the AQMP if the project would not result in an increase in the frequency or severity of existing air quality violations or cause a new violation.

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. While SCAG has

updated the RTP/SCS to the Connect SoCal 2024, which provides growth and forecasting estimates for 2019 through 2050, this update was adopted after the 2022 AQMP. Therefore, the analysis below uses assumptions from the 2020-2045 RTP/SCS for consistency with the most recent AQMP.

The 2022 AQMP was based on the Project site's existing General Plan land use designation of GC that allows a maximum Floor Area Ratio (FAR) of 1.0 and emissions generated by the existing 45,676 square foot retail store building that was constructed in 2007. As detailed in the VMT Screening Analysis prepared for this Project, the former Best Buy store generated approximately 1,875 daily vehicle trips and the proposed 71 residential units under the proposed General Plan land use designation of MDR would generate approximately 511 daily vehicle trips (EPD Solutions, Inc., 2025). Thus, the proposed Project, including General Plan Amendment, would not result in growth in vehicle trips or related emissions and would not conflict with the AQMP attainment plan.

The Orange General Plan and General Plan Program EIR assumed population estimates based on an average of 3.16 persons per single-family dwelling unit and 2.50 persons per multiple-family unit (General Plan EIR Table 3-1, page 3-14). The Project would develop 71 townhome residences, which would generate between 178 and 224 residents. According to the California Department of Finance, the City had a population of 139,724 in 2025 with 48,301 housing units. The increase in 71 housing units would equate to a 0.15 percent increase in housing units within the City; and the increase of 224 residents would equate to a 0.16 percent increase in population, which is a less than significant increase.

Therefore, Project-generated growth and emissions would be consistent with the 2022 AQMP. In addition, presented in Tables 2 through 4, the Project would not generate air quality emissions above SCAQMD significance thresholds during construction or operation. Therefore, impacts related to conflict with the AQMP from the Project would be less than significant.

Since the Project would be consistent with both Consistency Criterion No. 1 and 2, the Project would not conflict with the 2022 AQMP.

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 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 proposed Project's maximum daily regional construction, local construction, and regional operational emissions would not exceed the SCAQMD's thresholds for any criteria pollutants. All construction activities would comply with the applicable SCAQMD rules and regulations. Additionally, the proposed Project is consistent with SCAQMD'S 2022 AQMP, reflecting adherence to regional air quality management goals and standards. Finally, for odors produced during construction, these would be temporary and not significantly objectionable, and for odors produced 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. No mitigation is required.

ENERGY

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?” (California Energy Commission, 2023). 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; or
- (b) The project design impedes the growth of future renewable energy developments.

Southern California Edison and the Southern California Gas Company would provide electricity and natural gas, respectively, for construction and operation of the proposed Project’s vicinity. While natural gas use is not proposed, CalEEMod’s default natural gas consumption was included for a conservative analysis of the Project. The following assumptions were used to calculate the energy (electricity, natural gas, and petroleum) consumption of the proposed Project:

- Construction equipment fuel consumption was derived from CARB OffRoad2025 emission model.
- Fuel Consumption from vehicle travel was derived from CARB EMFAC2025 emission model.
- Electrical and natural gas usage was derived from the CalEEMod model Version 2022.1.

The most recent version of CalEEMod (v 2022.1) for air quality and GHG emissions uses emission rates from EMFAC2021. However, to provide the most updated data for energy consumption, this analysis uses data from EMFAC2025, which was updated in May 2025.

Construction

Electricity and Natural Gas Usage

Due to the Project size and the fact that construction is temporary, the electricity used during construction of the proposed Project would be substantially less than that required for Project operation and would have a negligible contribution to the Project’s overall energy consumption. The electric power used during construction 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 proposed Project. Since operation of the Project would result in a nominal increase in countywide electricity and natural gas consumption, as described below, construction energy consumption would in turn result in a less-than-significant impact to energy.

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 soil material from the Project site. Construction workers would travel to and from the Project site throughout the duration of construction, and for a conservative analysis, it is assumed that construction workers would travel in gasoline-powered passenger vehicles. It should be noted that 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). The trips included worker vehicles, vendor vehicles, and haul vehicles. Table 5, *Total Construction Fuel Usage*, shows the overall fuel consumption for Project construction, obtained from the CARB OffRoad 2025 emission model and the CARB EMFAC2025

model. Detailed tables of fuel consumption by construction equipment and on-road vehicles can be found in Appendix D.

Table 5: Total Construction Fuel Usage

Source	Diesel Fuel (Gallons)	Gasoline Fuel (Gallons)
Proposed Project On-Road Construction Vehicles	20,357	10,431
Proposed Project Off-Road Construction Equipment	28,458	0
Proposed Project Total Consumption	48,815	10,431
Orange County On-Road Vehicles	148,172,563	907,921,969
Orange County Off-Road Construction Equipment	14,253,307	977,564
On-Road Project Percentage (%)	0.014	0.001
Off-Road Project Percentage (%)	0.200	-

Source: Fuel Calculation Sheets (see Appendix D).

As shown in Table 5, the Project is estimated to consume a total of approximately 48,815 gallons of diesel fuel and approximately 10,431 gallons of gasoline fuel during construction. According to the projected 2026 fuel consumption data obtained from EMFAC2025 for Orange County, on-road vehicles would consume approximately 148,172,563 gallons of diesel fuel and 907,921,969 gallons of gasoline. The data for Orange County can be found in Appendix D. On-road construction vehicles from the proposed Project would account for 0.014 percent of diesel fuel consumption and 0.001 percent of gasoline fuel consumption within Orange County in 2026. Off-road consumption within Orange County in 2026 would total approximately 14,253,307 gallons of diesel fuel and 977,564 gallons of gasoline fuel. Off-road construction equipment from the proposed Project would account for 0.2 percent of diesel consumption within Orange County in 2026. As such, Project construction would have a negligible effect on energy supplies within Orange County. Additionally, the Project would be required to comply with regulations implemented to reduce emissions from construction, such as CCR Title 13, Motor Vehicles, Section 2449(d)(3), *Idling*, which limits idling times of construction vehicles to no more than 5 minutes. Thus, the Project would not result in wasteful, inefficient, or unnecessary consumption of energy, and the proposed Project would result in less-than-significant energy impacts during construction. No mitigation would be required.

Operation

The operation of the proposed Project would consume electricity and petroleum. Pursuant to Title 24 Part 6 standards, the Project would be required to be all-electric. Therefore, the Project would not consume natural gas during operation. However, to provide a conservative analysis of energy impacts, default natural gas consumption values from CalEEMod have been included in this report. Electricity and natural gas consumption can be found in the CalEEMod Output Sheets attached (Appendix A). The gasoline consumption rates utilize the same assumptions that were used for the worker vehicles.

As previously mentioned, the Project would be required to install solar panels in accordance with Title 24, Part 6 requirements. The Project's energy consumption, shown below in Table 6, *Annual Project Operational Energy Requirements*, presents a conservative estimate of energy consumption without taking credit for solar use.

Table 6: Annual Project Operational Energy Requirements

Electricity (Kilowatt-Hours)		
Proposed Project	502,606	
Orange County (2023)	18,759,000,000	
Project Percent Increase (%)	0.003	
Natural Gas (Thousands British Thermal Units)		
Proposed Project	2,721,810	
Orange County (2023)	60,825,476,870	
Project Percent Increase (%)	0.004	
Petroleum (Gasoline) Consumption		
	Annual VMT	Gallons of Gasoline Fuel
Proposed Project	1,881,157	77,411
Orange County (2026)	-	907,921,969
Project Percentage (%)	-	0.009

Notes: VMT = vehicle miles traveled

Source: CalEEMod Output Sheets (see Appendix A).

The most recent data available for electricity and natural gas usage from the California Energy Commission is from 2023. In 2023, electricity consumption in Orange County was estimated at 18,759,000,000 kilowatt-hours (California Energy Commission, 2023a) and natural gas consumption was estimated at 60,825,476,870 thousand British thermal units (California Energy Commission, 2023b). As shown in Table 6, *Annual Project Operational Energy Requirements*, the proposed Project would result in a 0.003 percent increase in electricity consumption and a 0.004 percent increase in natural gas consumption within Orange County. As previously shown in Table 5, gasoline consumption in Orange County in 2026 is estimated at 907,921,969 gallons (see Appendix D). Therefore, the proposed Project operations would account for 0.009 percent of gasoline fuel consumption in Orange County. Thus, the Project would not result in wasteful, inefficient, or unnecessary consumption of energy, and the Project would result in less-than-significant energy impacts during operation. No mitigation would be required.

Future Renewable Energy Developments

The proposed Project 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 during the permitting process, which ensures that all requirements are met. In addition, Project design and operation would comply with State Building Energy Efficiency Standards, appliance efficiency regulations, and green building standards. The Project buildings would install solar in compliance with current Title 24 requirements, which would further reduce energy consumption. As such, the Project would not inhibit the use of and would allow for future flexibility relating to renewable energy.

Conclusion

The Project's energy consumption for construction activities related to development of the site for residential uses would be permitted to require compliance with existing fuel standards, machinery efficiency standards, and CARB requirements that limit idling of construction trucks and equipment. 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. 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. 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. Construction and operation of the proposed Project would be required to meet the CCR Title 24 energy efficiency standards and comply with all applicable City energy codes. The Project would also install solar panels in compliance with current Title 24 requirements. Therefore, the construction and operation of the Project would result in a less-than-significant impact related to inefficient, wasteful, or unnecessary consumption of energy, and the Project would not inhibit the use of and would allow for future flexibility relating to renewable energy. 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 (Executive Department State of California, 2005). 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 CO₂ concentrations at 450 parts per million (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 I to Tier V), equivalent to the existing consistency determination requirements in CEQA Guidelines Sections 15064(h)(3) or 15125(d) (South Coast Air Quality Management District, 2010). Tier III, which is applicable to the Project, is described in further detail below.

Tier III – Numerical Screening Thresholds

The SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier III screening level. Tier III 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

Based on the foregoing guidance, the City has elected to rely on compliance with a local air district (SCAQMD) threshold in the determination of significance of Project-related GHG emissions, as stated in the City's Guidance for Greenhouse Gas Emissions Analysis Memo. Specifically, the City has selected the interim 3,000 MTCO_{2e} per year threshold for residential projects, recommended by SCAQMD staff against which to compare Project-related GHG emissions. Projects within the City should use the relevant threshold for its land use type and compare emissions to the City's GHG inventory contained in the 2010 General Plan EIR or other available regional/local inventories (City of Orange, 2020).

The City understands that the 3,000 MTCO_{2e} per year threshold was proposed by the SCAQMD a decade ago and was adopted as an interim policy; however, no permanent, superseding policy or threshold has since been adopted. The 3,000 MTCO_{2e} per year threshold was developed and recommended by the SCAQMD, an expert agency, based on substantial evidence as provided in the *Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold* document and subsequent Working Group meetings (latest of which occurred in 2010) (South Coast Air Quality Management District, 2008c). The SCAQMD has not withdrawn its support of the interim threshold and all documentation supporting the interim threshold remains on the SCAQMD website on a page that provides guidance to CEQA practitioners for air quality analysis (and where all SCAQMD significance thresholds for regional and local criteria pollutants and toxic air contaminants also are listed). Further, as stated by the SCAQMD, this threshold “uses the Executive Order

S-3-05 goal (80 percent below 1990 levels by 2050) as the basis for deriving the screening level” and, thus, remains valid for use in year 2025 and for purposes of this analysis. Lastly, this threshold has been used for hundreds of GHG analyses performed for projects located within the SCAQMD’s jurisdiction.

Project GHG Emissions

The Project’s construction GHG emissions are shown in Table 7, *Project Construction GHG Emissions*, and the overall construction and operational emissions are shown in Table 8, *Total Project 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. As shown in Table 8, the Project’s construction and operation GHG emissions would total 896 MTCO_{2e} per year. As discussed in the Energy section, operation of the Project would not consume natural gas. However, this analysis includes CalEEMod’s default natural gas consumption assumptions. Therefore, GHG emissions resulting from natural gas usage as been included in Table 8.

The GHG emissions inventory in the General Plan is from the year 2004 and totals 2,072,493 MTCO_{2e} per year (City of Orange, 2010, pp. 5.15-21). Buildout of the General Plan (by 2030) was estimated to result in annual emissions of 3,159,568 MTCO_{2e}. The proposed Project would result in a 0.04 percent increase and 0.03 percent increase compared to the 2004 levels and estimated 2030 levels, respectively. In addition, the Project would not exceed SCAQMD’s 3,000 MTCO_{2e} per year threshold. Therefore, impacts related to GHG emissions would be less than significant with no mitigation required.

Table 7: Project Construction GHG Emissions

Construction Year (Phase)	Annual GHG Emissions (MTCO _{2e})
Year 1 (2026)	217
Year 2 (2027)	277
Total Emissions	494
Total Emissions Amortized Over 30 Years	16

Source: CalEEMod Output Sheets (see Appendix A).

Table 8: Total Project GHG Emissions

Activity	Annual GHG Emissions (MTCO_{2e})
Mobile	629
Area	1
Energy	224
Water	7
Waste	18
Refrigeration	<0.1
Gross Project Operation Emissions	879
Project Construction Emissions	16
Total Project Emissions	896
2004 GHG Emissions Inventory	2,072,493
Percent Increase	0.04
Tier III Significance Threshold	3,000
Threshold Exceeded?	No

Note: Numbers have been rounded.

Source: CalEEMod Output Sheets (see Appendix A).

Project Consistency with Plans, Policies, and Regulations

The City of Orange published the Guidance for Greenhouse Gas Emissions Analysis Memo to provide guidance for determining the significance of GHG impacts a project may have. According to this memo, project-specific analysis of GHG impacts must discuss consistency with the City's General Plan Policies related to GHG reduction, the 2022 CARB Scoping Plan, and the most recent version of the SCAG RTP/SCS (City of Orange, 2020). As detailed below, the Project would not conflict with any local or regional GHG reduction plans.

City of Orange General Plan Policies

The City's Guidance for Greenhouse Gas Emissions Analysis Memo states that project-specific analysis should review consistency with related policies within Table NR-1 of the 2010 General Plan. Policies directly related to GHG reduction and energy efficiency for residential developments are discussed below in Table 9, *City of Orange General Plan Consistency Summary*. As shown below, the Project would not conflict with policies of the 2010 General Plan.

Table 9: City of Orange General Plan Consistency Summary

Policy	Consistency
Circulation & Mobility 3.3: Transit-oriented design within commercial, employment, medium density residential, and mixed-use areas.	No Conflict. The Project does not propose any improvements to public streets. However, the Project site is located in a developed urban area with sidewalks available along all nearby roadways. The proposed on-site roadway system includes walkways throughout the Project site that would connect to the off-site sidewalks. In addition, the proposed residential units would allow for charging of electric vehicles. The nearest bus stop is the Tustin-East Village Way Stop (ZONE2), which is approximately 98 feet (30 meters) west of the Project boundary.
Economic Development 3.4: Higher density residential and mixed-use projects to provide community-based workforce and market.	No Conflict. The proposed Project proposes a General Plan Amendment to change the land use designation from GC to MDR, and a zone change to change the designation from C-TR to R3. These changes would allow for the development of a medium density residential community on an underutilized parcel.
Economic Development 5.4: Redevelop and rehabilitate underutilized and vacant lands and public rights-of-way.	
Growth Management 2.4: Infill development and mixed-use opportunities wherever possible as developable space becomes more limited.	
Infrastructure 2.6: Sustainable building and site designs for new construction and renovation projects.	No Conflict. The Project would comply with Title 24, Part 6 building energy requirements along with other local and State initiatives that aim to achieve the 40 percent below 1990 levels by 2030 goal. These requirements include electric heat pumps installed during construction and electric hookups for all appliances.
Infrastructure 4.4: Integrated and cost-effective design and technology features within new development.	
Natural Resources 2.1: Implement and enforce regional air quality management plans.	No Conflict. As discussed above in the air quality section, the Project would not result in substantial unplanned growth nor would it exceed any of SCAQMD's regional or local construction and operational thresholds. Therefore, the Project would be consistent with the 2022 AQMP.
Natural Resources 2.2: Alternative transportation modes, alternative technologies, and bicycle- and pedestrian-friendly neighborhoods.	No Conflict. The proposed Project would be designed and constructed in accordance with Title 24 Part 6 and Part 11 requirements, which includes constructing homes to allow for electric vehicle charging.
Natural Resources 2.3: Native and drought-tolerant plants, proper soil preparation, and efficient irrigation systems for landscaping.	No Conflict. The proposed Project would be planted with drought-tolerant plants.
Natural Resources 3.1: Evaluate the potential effects of climate change on the City's human and natural systems and prepare strategies that allow the City to appropriately respond and adapt.	No Conflict. As shown above in Table 8, the Project would not exceed SCAQMD's Tier III GHG threshold. Therefore, the Project would not impede the City's ability to reduce GHG emissions.

Source: (City of Orange, 2015, pp. 24-30)

2022 CARB Scoping Plan

The 2022 CARB Scoping Plan Update sets the GHG emission reduction target for 2045 at 85 percent below 1990 levels, which was codified by SB 32. Table 10, *2022 Scoping Plan Consistency Summary*, below lists all GHG reduction policies applicable to residential developments. The following table also includes policies from Appendix D of the Scoping Plan, which provide GHG reduction policies for local governments to implement. The local action policies are focused on climate action planning and approval of new land use development projects. As shown below, 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 Scoping Plan.

Table 10: 2022 Scoping Plan Consistency Summary

Action	Consistency
GHG Emissions Reductions Relative to the SB 32 Target	
40% Below 1990 levels by 2030.	No Conflict. The Project would comply with Title 24, Part 6 building energy requirements along with other local and State initiatives that aim to achieve the 40 percent 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.	No Conflict. The Project proposes the development of a medium density residential community. As previously discussed in the air quality section, the Project would be consistent with the growth assumptions in the 2020 Connect SoCal, so the Project would not interfere with the analysis completed for the Connect SoCal report outlining VMT reduction targets and measures.
Light-Duty Vehicle (LDV) Zero-Emission Vehicles (ZEVs)	
100% of LDV sales are ZEV by 2035.	No Conflict. The proposed Project would be designed and constructed in accordance with Title 24 Part 6 and Part 11 requirements, which includes constructing homes to allow for electric vehicle charging.
New Residential and Commercial Buildings	
All electric appliances beginning 2026 (residential) and 2029 (commercial), contributing to 6 million heat pumps installed statewide by 2030.	No Conflict. The Project would comply with 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.
Construction Equipment	
25% of energy demand electrified by 2030 and 75% electrified by 2045.	No Conflict. 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 percent in 2030 and 75 percent in 2045.
Transportation Electrification	
Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as permit streamlining, infrastructure siting, consumer education, or preferential parking policies).	No Conflict. The proposed Project would be designed and constructed in accordance with Title 24 Part 6 and Part 11 requirements, which includes constructing homes to allow for electric vehicle charging. Therefore, the proposed Project would not interfere with the implementation of a ZEV ecosystem within the City.

Action	Consistency
Local Action Policies - VMT Reduction	
Increase public access to shared clean mobility options (such as planning for and investing in electric shuttles, bike share, car share, transit).	No Conflict. The Project does not propose any improvements to public sidewalks or streets. However, the Project site is located in a developed urban area with sidewalks available along all nearby roadways. The proposed on-site roadway system includes walkways throughout the Project site that would connect to the off-site sidewalks. In addition, the proposed residential units would allow for charging of electric vehicles. The nearest bus stop is the Tustin-East Village Way Stop (ZONE2), which is approximately 98 feet (30 meters) west of the Project boundary.
Amend zoning or development codes to enable mixed-use, walkable, and compact infill development (such as increasing allowable density of the neighborhood).	No Conflict. The proposed Project proposes a General Plan Amendment to change the land use designation from GC to MDR, and a zone change to change the designation from C-TR to R3. These changes would allow for the development of a medium density residential community on an underutilized parcel.
Local Action Policies - Building Decarbonization	
Adopt all-electric new construction reach codes.	No Conflict. The proposed Project would comply with 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 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.).	No Conflict. The proposed Project would be constructed in accordance with Title 24 CALGreen requirements, which includes installation of Energy Star equipment and appliances in new buildings.
Facilitate deployment of renewable energy production and distribution and energy storage.	No Conflict. The proposed Project would be constructed in accordance with the CALGreen Building Energy Efficiency Standards (Title 24 Part 6) and meet all other requirements related to energy efficiency standards.

Source: (California Air Resources Board, 2022, pp. 72-79)

SCAG Connect SoCal 2024

In addition, on April 4, 2024, SCAG's Regional Council adopted Connect SoCal 2024, the 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy, which includes long-range regional transportation plans, regional transportation improvement programs, regional housing needs allocations, and other plans for the region. SCAG's Connect SoCal 2024 policies focus largely on regional transportation and the efficiency of transportation, which are implemented by counties and cities within the SCAG region, as part of the overall planning and maintenance of the regional transportation system. These strategies are also intended to reduce GHG emissions from passenger vehicles. As an individual development, the policies are not directly applicable to the Project. However, the proposed Project would not interfere with the implementation of these policies, since the Project would result in a medium density residential community pursuant to the current Title 24 standards.

Conclusion

As described above, the proposed Project's construction and operational GHG emissions would total 896 MTCO_{2e}, which would not exceed the SCAQMD's significance Tier III threshold of 3,000 MTCO_{2e} per year. Additionally, the Project is consistent with the actions and measures of the City's General Plan, CARB's 2022 Scoping Plan, and SCAG Connect SoCal 2024, and would not interfere with the policies and goals in these plans. Therefore, the Project would have a less-than-significant impact related to GHG emissions. No mitigation would be required.

REFERENCES

- California Air Resources Board. (2022). *2022 Scoping Plan for Achieving Carbon Neutrality*. Retrieved from <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf>
- California Energy Commission. (2023). *CEQA Statutes and Guidelines Attachment 10 Appendix : Environmental Checklist Form*. Retrieved from https://www.energy.ca.gov/sites/default/files/2024-01/11_Attachment_10_-_Appendix_G_from_CEQA_Handbook_ada.docx
- California Energy Commission. (2023a). *Electricity Consumption*. Retrieved from <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards-0>
- California Energy Commission. (2023b). *Natural Gas Consumption*. Retrieved from <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards-1>
- City of Orange. (2010, March). *Orange General Plan Program Environmental Impact Report*. Retrieved from <https://www.cityoforange.org/home/showpublisheddocument/240/637698173340500000>
- City of Orange. (2015). *Orange General Plan - Natural Resources*. Retrieved from <https://www.cityoforange.org/home/showpublisheddocument/210/637698172559270000>
- City of Orange. (2020). *Guidance for Greenhouse Gas Emissions Analysis*. Retrieved from <https://www.cityoforange.org/home/showpublisheddocument/5729/638767809268670000>
- Department of Finance. (2025). *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2025*. Retrieved from <https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2025/>
- EPD Solutions, Inc. (2025). *Vehicle Miles Traveled (VMT) Screening Analysis - North Tustin Street Residential Project*.
- Executive Department State of California. (2005). *Executive Order S-3-05*. Retrieved from <https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/5129-5130.pdf>
- South Coast Air Quality Management District. (2008a, July). *Final Localized Significance Threshold Methodology*. Retrieved from <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf>
- South Coast Air Quality Management District. (2008b). *Final Localized Significance Threshold Methodology Appendix C*. Retrieved from <https://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2>.
- South Coast Air Quality Management District. (2008c). *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*. Retrieved from [https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgboardsynopsis.pdf](https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf)

South Coast Air Quality Management District. (2010). *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15*. Retrieved from [https://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](https://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)

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

United States Environmental Protection Agency. (2005). *11.19.2 Crushed Stone Processing and Pulverized Mineral Processing*. Retrieved from <https://www.epa.gov/sites/default/files/2020-10/documents/c11s1902.pdf>

APPENDIX A: CALEEMOD OUTPUT SHEETS

25-032 N Tustin Street Residential Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
 - 2.4. Operations Emissions Compared Against Thresholds
 - 2.5. Operations Emissions by Sector, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Demolition (2026) - Unmitigated
 - 3.3. Site Preparation (2026) - Unmitigated
 - 3.5. Grading (2026) - Unmitigated
 - 3.7. Building Construction (2026) - Unmitigated
 - 3.9. Building Construction (2027) - Unmitigated

3.11. Paving (2027) - Unmitigated

3.13. Architectural Coating (2027) - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	25-032 N Tustin Street Residential
Construction Start Date	9/1/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	21.2
Location	33.827949174634625, -117.83443813400079
County	Orange
City	Orange
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5774
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	71.0	Dwelling Unit	2.30	188,155	38,834	1,835	212	—

Parking Lot	38.0	Space	0.34	0.00	0.00	—	—	—
Other Asphalt Surfaces	1.77	Acre	1.59	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.	3.90	34.7	32.1	0.07	7.69	4.37	9,507
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	66.9	34.7	31.9	0.08	7.69	4.37	11,595
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	3.94	5.56	8.12	0.01	0.73	0.29	1,670
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.72	1.01	1.48	< 0.005	0.13	0.05	277
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	3.90	34.7	32.1	0.07	7.69	4.37	9,507
2027	1.19	10.5	15.4	0.03	0.77	0.43	3,215
Daily - Winter (Max)	—	—	—	—	—	—	—
2026	3.90	34.7	31.9	0.08	7.69	4.37	11,595
2027	66.9	10.5	15.2	0.03	0.77	0.43	3,197
Average Daily	—	—	—	—	—	—	—
2026	0.41	4.20	4.41	0.01	0.73	0.29	1,313
2027	3.94	5.56	8.12	0.01	0.40	0.23	1,670
Annual	—	—	—	—	—	—	—
2026	0.08	0.77	0.80	< 0.005	0.13	0.05	217
2027	0.72	1.01	1.48	< 0.005	0.07	0.04	277

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.	6.67	2.13	21.0	0.05	4.39	1.17	6,134
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	6.30	2.22	15.7	0.05	4.39	1.17	5,937
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	6.24	2.02	16.4	0.04	3.68	0.99	5,310
Annual (Max)	—	—	—	—	—	—	—
Unmit.	1.14	0.37	3.00	0.01	0.67	0.18	879
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	1.91	1.41	16.6	0.04	4.33	1.12	4,619
Area	4.72	0.04	4.03	< 0.005	< 0.005	< 0.005	10.8
Energy	0.04	0.69	0.29	< 0.005	0.06	0.06	1,354
Water	—	—	—	—	—	—	42.4
Waste	—	—	—	—	—	—	106
Refrig.	—	—	—	—	—	—	1.35
Total	6.67	2.13	21.0	0.05	4.39	1.17	6,134
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	1.89	1.53	15.4	0.04	4.33	1.12	4,433
Area	4.36	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.04	0.69	0.29	< 0.005	0.06	0.06	1,354
Water	—	—	—	—	—	—	42.4
Waste	—	—	—	—	—	—	106
Refrig.	—	—	—	—	—	—	1.35
Total	6.30	2.22	15.7	0.05	4.39	1.17	5,937

Average Daily	—	—	—	—	—	—	—
Mobile	1.59	1.31	13.4	0.04	3.62	0.93	3,799
Area	4.60	0.03	2.76	< 0.005	< 0.005	< 0.005	7.40
Energy	0.04	0.69	0.29	< 0.005	0.06	0.06	1,354
Water	—	—	—	—	—	—	42.4
Waste	—	—	—	—	—	—	106
Refrig.	—	—	—	—	—	—	1.35
Total	6.24	2.02	16.4	0.04	3.68	0.99	5,310
Annual	—	—	—	—	—	—	—
Mobile	0.29	0.24	2.44	0.01	0.66	0.17	629
Area	0.84	< 0.005	0.50	< 0.005	< 0.005	< 0.005	1.23
Energy	0.01	0.13	0.05	< 0.005	0.01	0.01	224
Water	—	—	—	—	—	—	7.03
Waste	—	—	—	—	—	—	17.6
Refrig.	—	—	—	—	—	—	0.22
Total	1.14	0.37	3.00	0.01	0.67	0.18	879

3. Construction Emissions Details

3.1. Demolition (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	2.29	20.7	19.0	0.03	0.84	0.78	3,438
Demolition	—	—	—	—	4.41	0.67	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.13	1.04	< 0.005	0.05	0.04	188
Demolition	—	—	—	—	0.24	0.04	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.19	< 0.005	0.01	0.01	31.2
Demolition	—	—	—	—	0.04	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.05	0.05	0.79	0.00	0.20	0.05	198
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	6.67	2.95	0.04	1.55	0.49	5,870
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.01	< 0.005	10.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.38	0.16	< 0.005	0.08	0.03	321
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	1.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.07	0.03	< 0.005	0.02	< 0.005	53.2

3.3. Site Preparation (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	3.83	34.6	31.0	0.05	1.77	1.62	5,551
Dust From Material Movement	—	—	—	—	5.66	2.69	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	3.83	34.6	31.0	0.05	1.77	1.62	5,551
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	0.05	0.47	0.42	< 0.005	0.02	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)	—	—	—	—	—	—	—
Worker	0.07	0.06	1.05	0.00	0.26	0.06	264
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)	—	—	—	—	—	—	—
Worker	0.07	0.07	0.91	0.00	0.26	0.06	251
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	3.49

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	0.58
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 (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	2.16	19.1	19.1	0.03	1.04	0.96	3,146
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	0.42	0.42	< 0.005	0.02	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	0.05	0.05	0.68	0.00	0.20	0.05	188
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.11	9.73	4.19	0.05	2.18	0.68	8,261
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	< 0.005	< 0.005	4.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.22	0.09	< 0.005	0.05	0.01	181
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.69
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.04	0.02	< 0.005	0.01	< 0.005	30.0

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)	—	—	—	—	—	—	—
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	0.17	1.52	2.01	< 0.005	0.06	0.05	377
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.28	0.37	< 0.005	0.01	0.01	62.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.09	0.09	1.16	0.00	0.33	0.08	321
Vendor	< 0.005	0.25	0.12	< 0.005	0.07	0.02	248
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	0.01	0.01	0.17	0.00	0.05	0.01	46.5
Vendor	< 0.005	0.04	0.02	< 0.005	0.01	< 0.005	35.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.01	< 0.005	7.69
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	5.88
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	1.11	10.2	14.0	0.03	0.36	0.34	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	1.11	10.2	14.0	0.03	0.36	0.34	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.54	4.98	6.87	0.01	0.18	0.16	1,291
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—

Off-Road Equipment	0.10	0.91	1.25	< 0.005	0.03	0.03	214
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.07	0.08	1.26	0.00	0.33	0.08	332
Vendor	< 0.005	0.23	0.12	< 0.005	0.07	0.02	244
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.07	0.08	1.09	0.00	0.33	0.08	315
Vendor	< 0.005	0.24	0.12	< 0.005	0.07	0.02	244
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	0.04	0.04	0.55	0.00	0.16	0.04	156
Vendor	< 0.005	0.12	0.06	< 0.005	0.03	0.01	119
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	0.01	0.01	0.10	0.00	0.03	0.01	25.9
Vendor	< 0.005	0.02	0.01	< 0.005	0.01	< 0.005	19.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2027) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.81	7.29	10.4	0.02	0.29	0.27	1,604
Paving	0.28	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.81	7.29	10.4	0.02	0.29	0.27	1,604
Paving	0.28	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.36	0.52	< 0.005	0.01	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)	—	—	—	—	—	—	—
Worker	0.06	0.06	0.99	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
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.06	0.06	0.85	0.00	0.26	0.06	247
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	0.04	0.00	0.01	< 0.005	12.3
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	2.04
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 (2027) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.15	1.11	1.50	< 0.005	0.03	0.02	179
Architectural Coatings	66.7	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	0.07	< 0.005	< 0.005	< 0.005	8.81
Architectural Coatings	3.29	—	—	—	—	—	—
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	0.60	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.01	0.02	0.22	0.00	0.07	0.02	63.0
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
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	3.15
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

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	1.91	1.41	16.6	0.04	4.33	1.12	4,619
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.91	1.41	16.6	0.04	4.33	1.12	4,619
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	1.89	1.53	15.4	0.04	4.33	1.12	4,433
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.89	1.53	15.4	0.04	4.33	1.12	4,433
Annual	—	—	—	—	—	—	—
Single Family Housing	0.29	0.24	2.44	0.01	0.66	0.17	629
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.29	0.24	2.44	0.01	0.66	0.17	629

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	467
Parking Lot	—	—	—	—	—	—	12.5
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	479
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	467
Parking Lot	—	—	—	—	—	—	12.5
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	479
Annual	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	77.3
Parking Lot	—	—	—	—	—	—	2.06
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	79.4

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	0.04	0.69	0.29	< 0.005	0.06	0.06	875
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.69	0.29	< 0.005	0.06	0.06	875
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	0.04	0.69	0.29	< 0.005	0.06	0.06	875
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.69	0.29	< 0.005	0.06	0.06	875
Annual	—	—	—	—	—	—	—
Single Family Housing	0.01	0.13	0.05	< 0.005	0.01	0.01	145
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.13	0.05	< 0.005	0.01	0.01	145

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	4.03	—	—	—	—	—	—
Architectural Coatings	0.33	—	—	—	—	—	—

Landscape Equipment	0.35	0.04	4.03	< 0.005	< 0.005	< 0.005	10.8
Total	4.72	0.04	4.03	< 0.005	< 0.005	< 0.005	10.8
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	4.03	—	—	—	—	—	—
Architectural Coatings	0.33	—	—	—	—	—	—
Total	4.36	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	0.74	—	—	—	—	—	—
Architectural Coatings	0.06	—	—	—	—	—	—
Landscape Equipment	0.04	< 0.005	0.50	< 0.005	< 0.005	< 0.005	1.23
Total	0.84	< 0.005	0.50	< 0.005	< 0.005	< 0.005	1.23

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	42.4
Parking Lot	—	—	—	—	—	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	42.4
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	42.4
Parking Lot	—	—	—	—	—	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	42.4
Annual	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	7.03
Parking Lot	—	—	—	—	—	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	7.03

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	106
Parking Lot	—	—	—	—	—	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	106
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	106
Parking Lot	—	—	—	—	—	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	106
Annual	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	17.6
Parking Lot	—	—	—	—	—	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	17.6

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	1.35
Total	—	—	—	—	—	—	1.35
Daily, Winter (Max)	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	1.35
Total	—	—	—	—	—	—	1.35
Annual	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	0.22
Total	—	—	—	—	—	—	0.22

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	9/1/2026	9/29/2026	5.00	20.0	—
Site Preparation	Site Preparation	9/30/2026	10/7/2026	5.00	5.00	—
Grading	Grading	10/8/2026	10/19/2026	5.00	8.00	—

Building Construction	Building Construction	10/20/2026	9/7/2027	5.00	230	—
Paving	Paving	9/8/2027	10/3/2027	5.00	18.0	—
Architectural Coating	Architectural Coating	10/4/2027	10/29/2027	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
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Crushing/Proc. Equipment	Diesel	Average	1.00	8.00	200	0.60
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Back hoes	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	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/Back hoes	Diesel	Average	0.00	8.00	84.0	0.37
Grading	Crawler Tractors	Diesel	Average	3.00	8.00	87.0	0.43
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
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/Back hoes	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/Back hoes	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	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	81.5	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	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	115	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—

Building Construction	Worker	25.6	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	7.59	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	5.11	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	381,014	127,005	0.00	0.00	5,057

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	6,520	—
Site Preparation	—	—	17.5	0.00	—
Grading	—	7,350	50.0	0.00	—
Paving	0.00	0.00	0.00	0.00	2.72

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
Single Family Housing	0.78	0%
Parking Lot	0.34	100%
Other Asphalt Surfaces	1.59	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	346	0.03	< 0.005
2027	0.00	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	511	622	509	192,252	5,002	6,086	4,981	1,881,157
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	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)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	71
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)
381013.875	127,005	0.00	0.00	5,057

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	489,555	346	0.0330	0.0040	2,721,810
Parking Lot	13,050	346	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	2,664,321	638,931
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	56.2	—

Parking Lot	0.00	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
----------------	-----------

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	13.1	annual days of extreme heat
Extreme Precipitation	4.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2

Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	55.4
AQ-PM	77.1
AQ-DPM	65.0
Drinking Water	54.6
Lead Risk Housing	24.6
Pesticides	46.3
Toxic Releases	95.8
Traffic	83.2
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	14.3

Haz Waste Facilities/Generators	70.9
Impaired Water Bodies	0.00
Solid Waste	9.67
Sensitive Population	—
Asthma	12.9
Cardio-vascular	10.5
Low Birth Weights	32.3
Socioeconomic Factor Indicators	—
Education	37.6
Housing	21.1
Linguistic	49.6
Poverty	5.92
Unemployment	41.8

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	82.93340177
Employed	61.27293725
Median HI	86.71885025
Education	—
Bachelor's or higher	83.65199538
High school enrollment	100
Preschool enrollment	83.44668292
Transportation	—
Auto Access	97.49775439
Active commuting	54.36930579

Social	—
2-parent households	43.48774541
Voting	69.85756448
Neighborhood	—
Alcohol availability	65.1353779
Park access	23.41845246
Retail density	55.74233286
Supermarket access	50.09624022
Tree canopy	63.41588605
Housing	—
Homeownership	88.14320544
Housing habitability	83.54933915
Low-inc homeowner severe housing cost burden	51.27678686
Low-inc renter severe housing cost burden	52.73963814
Uncrowded housing	93.44283331
Health Outcomes	—
Insured adults	74.11779802
Arthritis	14.6
Asthma ER Admissions	90.1
High Blood Pressure	17.2
Cancer (excluding skin)	8.0
Asthma	55.1
Coronary Heart Disease	23.5
Chronic Obstructive Pulmonary Disease	35.3
Diagnosed Diabetes	60.0
Life Expectancy at Birth	68.0
Cognitively Disabled	88.7
Physically Disabled	78.7

Heart Attack ER Admissions	89.9
Mental Health Not Good	73.6
Chronic Kidney Disease	35.4
Obesity	86.4
Pedestrian Injuries	47.9
Physical Health Not Good	65.0
Stroke	39.4
Health Risk Behaviors	—
Binge Drinking	43.3
Current Smoker	73.9
No Leisure Time for Physical Activity	69.0
Climate Change Exposures	—
Wildfire Risk	1.5
SLR Inundation Area	0.0
Children	86.0
Elderly	25.4
English Speaking	77.9
Foreign-born	53.6
Outdoor Workers	45.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	52.6
Traffic Density	89.1
Traffic Access	55.4
Other Indices	—
Hardship	20.8
Other Decision Support	—
2016 Voting	85.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	26.0
Healthy Places Index Score for Project Location (b)	83.0
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 values to match site plan.
Construction: Off-Road Equipment	Conservatively assumed all equipment would run 8 hours a day. Replaced tractors/loaders/backhoes with crawler tractors to accurately assess site disturbance in the site preparation and grading phases. Added 1 crushing equipment for crushing of demolition material during the demolition phase.
Construction: Dust From Material Movement	Assumed 7350 CY of soil export per project grading plan.
Operations: Vehicle Data	Adjusted trip rates to ITE 11th edition, land use code 215
Operations: Hearths	Assumed zero fire places proposed pursuant to SCAQMD Rule 445, which prohibits new wood burning devices.

Construction: Construction Phases

Extended site preparation phase from 5 days to 10 days to account for asphalt crushing of existing material

APPENDIX B: CRUSHING EMISSIONS FACTORS

Unmitigated Construction Emissions

Construction Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NOx	CO	SOx	PM ₁₀	PM _{2.5}
2026 (Year 1)						
Demolition	1.2	17.3	27.0	0.1	11.4	2.1
Off-Road Equipment	0.7	5.3	18.4	0.0	0.2	0.2
Demolition	0.0	0.0	0.0	0.0	6.9	1.1
Off-Site Worker	0.1	0.1	0.9	0.0	0.2	0.1
Off-Site Hauling	0.1	10.3	4.5	0.1	2.4	0.7
Crushing PM	0.0	0.0	0.0	0.0	1.6	0.1
Crushing EM	0.3	1.6	3.2	0.0	0.1	0.1
Site Preparation	1.7	13.3	33.2	0.1	6.8	3.5
Off-Road	1.7	13.3	32.2	0.1	0.8	0.8
Dust from Material Movement	0.0	0.0	0.0	0.0	5.7	2.7
Off-Site (Worker Trip)	0.1	0.1	1.1	0.0	0.3	0.1
Grading	1.4	31.8	29.6	0.2	8.1	3.1
Off-Road	1.1	9.0	19.1	0.0	0.6	0.5
Dust from Material Movement	0.0	0.0	0.0	0.0	2.3	0.9
Off-Site (Worker Trip)	0.1	0.1	0.8	0.0	0.2	0.0
Off-Site (Hauling Trip)	0.3	22.8	9.7	0.1	5.1	1.6
Building Construction	1.0	8.1	17.2	0.0	0.7	0.4
Off-Road	0.9	7.7	15.9	0.0	0.3	0.3
Onsite Truck	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site (Worker Trip)	0.1	0.1	1.2	0.0	0.3	0.1
Vendor	0.0	0.3	0.1	0.0	0.1	0.0
Maximum Year 1	1.7	31.8	33.2	0.2	11.4	3.5
2027 (Year 2)						
Building Construction	1.2	10.5	15.4	0.0	0.8	0.4
Off-Road	1.1	10.2	14.0	0.0	0.4	0.3
Onsite Truck	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site (Worker Trip)	0.1	0.1	1.3	0.0	0.3	0.1
Vendor	0.0	0.2	0.1	0.0	0.1	0.0
Paving	1.1	7.4	11.4	0.0	0.5	0.3
Off-Road	0.8	7.3	10.4	0.0	0.3	0.3
Paving	0.3	0.0	0.0	0.0	0.0	0.0
Off-Site (Worker Trip)	0.1	0.1	1.0	0.0	0.3	0.1
Architectural Coating	66.9	1.1	1.7	0.0	0.1	0.0
Off-Road	0.2	1.1	1.5	0.0	0.0	0.0
Architectural Coating	66.7	0.0	0.0	0.0	0.0	0.0
Off-Site (Worker Trip)	0.0	0.0	0.2	0.0	0.1	0.0
Maximum Year 2	66.9	10.5	15.4	0.0	0.8	0.4
Maximum Construction	66.9	31.8	33.2	0.2	11.4	3.5
SCAQMD Thresholds	75	100	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

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

Source: CalEEMod Output Sheets.

Proposed Operational Emissions

Operational Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Winter						
Mobile	1.9	1.5	15.4	0.0	4.3	1.1
Area	4.4	-	-	-	-	-
Energy	0.0	0.7	0.3	0.0	0.1	0.1
Total Winter Proposed Project Operational Emissions	6.3	2.2	15.7	0.0	4.4	1.2
Summer						
Mobile	1.9	1.4	16.6	0.0	4.3	1.1
Area	4.7	0.0	4.0	0.0	0.0	0.0
Energy	0.0	0.7	0.3	0.0	0.1	0.1
Total Summer Proposed Project Operational Emissions	6.7	2.1	21.0	0.0	4.4	1.2
Maximum						
Mobile	1.9	1.5	16.6	0.0	4.3	1.1
Area	4.7	0.0	4.0	0.0	0.0	0.0
Energy	0.0	0.7	0.3	0.0	0.1	0.1
Maximum Operational Emissions	6.7	2.3	21.0	0.0	4.4	1.2
SCAQMD Significance Thresholds	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

Construction Equipment Modeled in CalEEMod and Acres Disturbed Per Day

Activity	Equipment Type	Equipment Quantity	Operating Hours per Day	Acres Disturbed per Piece of Equipment per Day	Acres Disturbed per Day
Demolition	Rubber Tired Dozers	2	8	0.5	1
Total Acres Disturbed Per Day (Demo)					1
Site Preparation	Crawler Tractors	4	8	0.5	2
	Graders	0	8	0.5	0
	Scrapers	0	8	1	0
	Rubber Tired Dozers	3	8	0.5	1.5
Total Acres Disturbed Per Day (Site Prep)					3.5
Grading	Graders	1	8	0.5	0.5
	Rubber Tired Dozers	1	8	0.5	0.5
	Crawler Tractors	3	8	0.5	1.5
	Scrapers	0	8	1	0
Total Acres Disturbed Per Day (Grading)					2.5
Maximum Acres Disturbed Per Day					3.5

Source: CalEEMod Output Sheets.

Localized Construction Emission Estimates

Construction Activity	Maximum Daily Localized Emissions (pounds/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Year 1				
Demolition	5.3	26.7	8.8	1.3
Site Preparation	13.3	32.2	6.5	3.5
Grading	9.0	19.1	2.8	1.5
Building Construction	7.7	15.9	0.3	0.3
Maximum Year 1	13.3	32.2	8.8	3.5
Year 2				
Building Construction	10.2	14.0	0.4	0.3
Paving	7.3	10.4	0.3	0.3
Architectural Coating	1.1	1.5	0.0	0.0
Maximum Year 2	10.2	14.0	0.4	0.3
Maximum Daily Emissions	13.3	32.2	8.8	3.5
SCAQMD Screening Thresholds	149	984	9.5	5.5
Threshold Exceeded?	No	No	No	No

APPENDIX C: DETAILED AIR QUALITY TABLES

EMISSION FACTORS COUNT

Model Output: Off-Road Web Query (v1.1.2) Emissions Inventory
Region Type: Sub-Area
Region: Orange (SC)
Calendar Year: 2026
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: Off-Road Web Query Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

- Step 1: Convert hph/year to hph/day
- Step 2: Convert tpd to gpd
- Step 3: Divide emissions by hph/day to get grams/hph
- Step 4: Convert hph to bhp-hr

Region	Calendar Yr	Vehicle Cat	Model Year	Horsepower	Fuel	HC_tpd	ROG_tpd	TOG_tpd	CO_tpd	NOx_tpd	CO2_tpd	PM10_tpd	PM2.5_tpd	SOx_tpd	NH3_tpd	Fuel Consum	Total_Activ	Total_Popu	Horsepower_Hours_hhpy	hph/day
Orange (SC)	2026	Constructic	Aggregate	Aggregate	Diesel	0.000133	0.000161	0.000191	0.000605	0.002378	1.31786855	5.83203E-05	5.36547E-05	1.2484E-05	0	41755.251	11251.36	15.53035	823251.1643	2255.483

Conversion factors	HC_gpd	ROG_gpd	TOG_gpd	CO_gpd	NOx_gpd	CO2_gpd	PM10_gpd	PM2.5_gpd	SOx_gpd	NH3_gpd
907185 grams in 1 ton	120.3706	145.6484	173.3336	548.7135	2157.155	1195550.58	52.90730176	48.67471762	11.32529303	0
0.98632 bhp in 1 HP	HC_grams/ROG_gram	TOG_gram	CO_grams	NOx_gram	CO2_grams/hph	PM10_grams/hph	PM2.5_grams/hph	SOx_grams/hph	NH3_grams/hph	
	0.053368	0.064575	0.07685	0.24328	0.956405	530.0641903	0.023457197	0.021580622	0.005021228	0

FINAL VALUES	HC_grams/ROG_gram	TOG_gram	CO_grams	NOx_gram	CO2_grams/bhp	PM10_grams/bhp	PM2.5_grams/bhp	SOx_grams/bhp	NH3_grams/bhp-hr
	0.054108	0.065471	0.077916	0.246654	0.96967	537.4160417	0.023782543	0.021879939	0.005090871

	Equipment	Fuel Type	Number/d	hours/day	hp	LF	
Equipment	crushing/proc	diesel	1	8	367	0.4	

CONVERSION FACTORS

453.592 grams in 1 lb
0.98632 bhp in 1 HP

Emissions Rates (g/bhp-hr)									
TOG	ROG	NOx	CO	SO ₂	PM10E	PM2.5E	CO ₂	CH ₄	N ₂ O
0.077916	0.065471	0.96967	0.246654	0.005091	0.023783	0.02188	537.416	0.022	0.004
0.198973	0.167193	2.476238	0.629879	0.013001	0.060733	0.055875	1372.395	0.056181	0.010215

ROCK CRUSHING CALCULATIONS:

PHASE 1 SITE DATA			
Total Rock Weight (tons)	Demolition	Duration	tons/day
3240		20	162

Source	Total PM-10 Emission Factor	PM-10 Emissions (lbs/day)	Total PM-2.5 Emission Factor	PM-2.5 Emissions (lbs/day)
Tertiary Crushing (controlled)	0.00054	0.08748	0.0001	0.0162
Fines Crushing (controlled)	0.0012	0.1944	0.00007	0.01134
Screening (controlled)	0.00074	0.11988	0.00005	0.0081
Fines Screening (controlled)	0.0022	0.3564	ND	0
Conveyor Transfer Point (control)	4.60E-05	0.007452	1.30E-05	0.002106
Wet Drilling	8.00E-05	0.01296	ND	0
Truck Unloading	1.60E-05	0.002592	ND	0
Truck Loading	1.00E-04	0.0162	ND	0
TOTAL		0.797364		0.037746

WATERING REDUCTION	36% PM10	PM2.5
	0.51031296	0.02415744

AP-42 SOURCES

Section 11.19.2-2: PM10, PM2.5

<https://www.epa.gov/sites/default/files/2020-10/documents/c11s1902.pdf>

Table 11.19.2-2 (English Units). EMISSION FACTORS FOR CRUSHED STONE PROCESSING OPERATIONS (lb/Ton)^a

Source ^b	Total Particulate Matter ^{c,s}	EMISSION FACTOR RATING	Total PM-10	EMISSION FACTOR RATING	Total PM-2.5	EMISSION FACTOR RATING
Primary Crushing (SCC 3-05-020-01)	ND		ND ⁿ		ND ⁿ	
Primary Crushing (controlled) (SCC 3-05-020-01)	ND		ND ⁿ		ND ⁿ	
Secondary Crushing (SCC 3-05-020-02)	ND		ND ⁿ		ND ⁿ	
Secondary Crushing (controlled) (SCC 3-05-020-02)	ND		ND ⁿ		ND ⁿ	
Tertiary Crushing (SCC 3-05030-03)	0.0054 ^d	E	0.0024 ⁿ	C	ND ⁿ	
Tertiary Crushing (controlled) (SCC 3-05-020-03)	0.0012 ^d	E	0.00054 ^p	C	0.00010 ^q	E
Fines Crushing (SCC 3-05-020-05)	0.0390 ^e	E	0.0150 ^e	E	ND	
Fines Crushing (controlled) (SCC 3-05-020-05)	0.0030 ^f	E	0.0012 ^f	E	0.000070 ^q	E
Screening (SCC 3-05-020-02, 03)	0.025 ^e	E	0.0087 ^f	C	ND	
Screening (controlled) (SCC 3-05-020-02, 03)	0.0022 ^d	E	0.00074 ^m	C	0.000050 ^q	E
Fines Screening (SCC 3-05-020-21)	0.30 ^g	E	0.072 ^g	E	ND	
Fines Screening (controlled) (SCC 3-05-020-21)	0.0036 ^g	E	0.0022 ^g	E	ND	
Conveyor Transfer Point (SCC 3-05-020-06)	0.0030 ^h	E	0.00110 ^h	D	ND	
Conveyor Transfer Point (controlled) (SCC 3-05-020-06)	0.00014 ⁱ	E	4.6 x 10 ⁻⁵ⁱ	D	1.3 x 10 ^{-5q}	E
Wet Drilling - Unfragmented Stone (SCC 3-05-020-10)	ND		8.0 x 10 ^{-5j}	E	ND	
Truck Unloading - Fragmented Stone (SCC 3-05-020-31)	ND		1.6 x 10 ^{-5j}	E	ND	
Truck Loading - Conveyor, crushed stone (SCC 3-05-020-32)	ND		0.00010 ^k	E	ND	

a. Emission factors represent uncontrolled emissions unless noted. Emission factors in lb/Ton of material of throughput. SCC = Source Classification Code. ND = No data.

APPENDIX D: FUEL CALCULATIONS

Construction Equipment Fuel Usage (Off-Road)

Activity	Equipment	Number	Hours per day	Horsepower	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	20	3,854	0.041937376	161.64
	Rubber Tired Dozers	2	8	367	0.4	20	46,976	0.050817531	2,387.20
	Excavators	3	8	36	0.38	20	6,566	0.051468449	337.96
Site Preparation	Crawler Tractors	4	8	87	0.43	5	5,986	0.050999088	305.26
	Rubber Tired Dozers	3	8	148	0.41	5	7,282	0.050817531	370.03
	Crushing/Proc.	1	8	200	0.6	5	4,800	0.050719942	243.46
Grading	Graders	1	8	148	0.41	8	3,884	0.050766925	197.15
	Rubber Tired Dozers	1	8	367	0.4	8	9,395	0.050817531	477.44
	Crawler Tractors	3	8	87	0.43	8	7,183	0.050999088	366.31
	Excavators	1	8	36	0.38	8	876	0.051468449	45.06
Building Construction	Cranes	1	8	367	0.29	230	195,831	0.046434547	9,093.33
	Forklifts	3	8	82	0.2	230	90,528	0.052939448	4,792.50
	Tractors/Loaders/Backhoes	3	8	84	0.37	230	171,562	0.05300741	9,094.04
	Generator Sets	1	8	14	0.74	230	19,062	0.069037993	1,316.03
	Welders	1	8	46	0.45	230	38,088	0.030223713	1,151.16
Paving	Pavers	1	8	81	0.42	18	4,899	0.051655802	253.06
	Rollers	2	8	36	0.38	18	3,940	0.052272257	205.94
	Paving Equipment	2	8	89	0.36	18	9,228	0.051186523	472.32
Architectual Coating	Air Compressors	1	8	37	0.48	18	2,557	0.029379007	75.14
Total									28,458.24

Source: Fuel Calculation Sheets (see Attachment C)

Model Output: Off-Road Web Query (v1.1.2) Emissions Inventory

Region Type: Sub-Area

Region: Orange (SC)

Calendar Year: 2026

Scenario: All Adopted Rules - Exhaust

Vehicle Classification: Off-Road Web Query Equipment Types

Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	Calendar Year	Vehicle Category	Model Year	Horsepower Bin	Fuel	Fuel Consumption	Horsepower_Hr	Fuel Rate
Orange (SC)		2026 Construction and Mining - Crawler Tractors	Aggregate	Aggregate	Diesel	784892.2512	15390319.23	0.050999088
Orange (SC)		2026 Construction and Mining - Crushing/Processing Equipment	Aggregate	Aggregate	Diesel	41755.25093	823251.1643	0.050719942
Orange (SC)		2026 Construction and Mining - Excavators	Aggregate	Aggregate	Diesel	2477860.08	48143282.78	0.051468449
Orange (SC)		2026 Construction and Mining - Graders	Aggregate	Aggregate	Diesel	356900.3229	7030174.114	0.050766925
Orange (SC)		2026 Construction and Mining - Misc - Concrete/Industrial Saws	Aggregate	Aggregate	Diesel	4839.2	115391.1	0.041937376
Orange (SC)		2026 Construction and Mining - Off-Highway Trucks	Aggregate	Aggregate	Diesel	1065828.57	21051545.68	0.050629469
Orange (SC)		2026 Construction and Mining - Pavers	Aggregate	Aggregate	Diesel	159410.1796	3086007.282	0.051655802
Orange (SC)		2026 Construction and Mining - Paving Equipment	Aggregate	Aggregate	Diesel	176178.9235	3441900.607	0.051186523
Orange (SC)		2026 Construction and Mining - Rollers	Aggregate	Aggregate	Diesel	418156.5927	7999589.409	0.052272257
Orange (SC)		2026 Construction and Mining - Rubber Tired Dozers	Aggregate	Aggregate	Diesel	97459.83317	1917838.819	0.050817531
Orange (SC)		2026 Construction and Mining - Scrapers	Aggregate	Aggregate	Diesel	992080.6688	19605884.81	0.050601168
Orange (SC)		2026 Construction and Mining - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Diesel	2410382.755	45472562.08	0.05300741
Orange (SC)		2026 Industrial - Forklifts	Aggregate	Aggregate	Diesel	1256468.647	23734071.58	0.052939448
Orange (SC)		2026 Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Diesel	98536.21128	3353966.75	0.029379007
Orange (SC)		2026 Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Diesel	415673.2127	6020934.15	0.069037993
Orange (SC)		2026 Light Commercial - Misc - Welders	Aggregate	Aggregate	Diesel	496890.9077	16440432.2	0.030223713
Orange (SC)		2026 Construction and Mining - Misc - Cranes	Aggregate	Aggregate	Gasoline	10636.1	229055.75	0.046434547

Construction On-Road Fuel Consumption

Construction Source	Total Trips	VMT	Fuel Rate (Gallons/Miles)	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
Haul Trucks	5098.0	101960.0	6.2	16,350	-
Vendor Trucks	3491.4	35611.8	8.9	4,007	-
Worker Vehicles	13701.6	253480.2	24.3	-	10,431
Total				20,357	10,431

Source: CalEEMod Output Sheets (see Attachment B)

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	15	18.5	LDA,LDT1,LDT2
Demolition	Vendor		10.2	HHDT,MHDT
Demolition	Hauling	81.5	20	HHDT
Demolition	Onsite truck			HHDT
Site Preparation				
Site Preparation	Worker	20	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor		10.2	HHDT,MHDT
Site Preparation	Hauling	0	20	HHDT
Site Preparation	Onsite truck			HHDT
Grading				
Grading	Worker	15	18.5	LDA,LDT1,LDT2
Grading	Vendor		10.2	HHDT,MHDT
Grading	Hauling	114.875	20	HHDT
Grading	Onsite truck			HHDT
Building Construction				
Building Construction	Worker	25.56	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	7.5899	10.2	HHDT,MHDT
Building Construction	Hauling	0	20	HHDT
Building Construction	Onsite truck			HHDT
Paving				
Paving	Worker	20	18.5	LDA,LDT1,LDT2
Paving	Vendor		10.2	HHDT,MHDT
Paving	Hauling	0	20	HHDT
Paving	Onsite truck			HHDT
Architectural Coating				
Architectural Coating	Worker	5.112	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor		10.2	HHDT,MHDT
Architectural Coating	Hauling	0	20	HHDT
Architectural Coating	Onsite truck			HHDT

Construction Schedule	Days per phase
Demolition	20
Site Prep	5
Grading	8
Building Construction	230
Paving	18
Coating	18

Source: EMFAC2025 (v2.0.0) Emissions Inventory

Region Type: Sub-Area

Region: Orange (SC)

Calendar Year: 2026

Season: Annual

Units: miles/year for Combustion VMT and Electric VMT, trips/year for Trips, tons/year for Emissions, 1000 gallons/year for Fuel Consumption, kWh/year for Energy Consumption, kg/year for Hydrogen Consumption

Region	Calendar Year Vehicle Category	Model Year	Speed	Fuel	Total VMT	Fuel Consumption	Fuel Rate	Trip %
Orange (SC)	2026 HHDT	Aggregate	Aggregate	Diesel	561441537.2	90029.71103	6.236180598	100%
Orange (SC)	2026 LHDT1	Aggregate	Aggregate	Diesel	202217878.1	9768.386964	20.70125588	
Orange (SC)	2026 LHDT2	Aggregate	Aggregate	Diesel	197754155.7	10798.30689	18.31344097	

Orange (SC)	2026 MHD	Aggregate	Aggregate	Diesel	259735745.3	29225.55792	8.887280986	100%
Orange (SC)	2026 LDA	Aggregate	Aggregate	Gasoline	8044304182	307402.6873	26.16862023	50%
Orange (SC)	2026 LDT1	Aggregate	Aggregate	Gasoline	915988079.6	40634.13976	22.54232734	25%
Orange (SC)	2026 LDT2	Aggregate	Aggregate	Gasoline	6227284368	278942.7636	22.32459551	25%
				50/25/25 Splits	24.30104083			

Construction Fuel Consumption Summary

Construction Source	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
On-road Construction Vehicles	20,357	10,431
Off-Road Construction Equipment	28,458	-
Total	48,815	10,431
On-road Countywide	148,172,563	877,821,674
Off-road Countywide	14,096,267	977,564
onroad percentage	0.014%	0.001%
offroad percentage	0.202%	-

Model Output: Off-Road Web Query (v1.1.2) Emissions Inventory

Region Type: County

Region: Orange

Calendar Year: 2026

Scenario: All Adopted Rules - Exhaust

Vehicle Classification: Off-Road Web Query Equipment Types

Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	Calendar Year	Vehicle Category	Model Year	Horsepower	Fuel	Fuel Consumption
Orange		2026 Construction and Mining - Bore/Drill Rigs	Aggregate	Aggregate	Diesel	305087.6071
Orange		2026 Construction and Mining - Bucket	Aggregate	Aggregate	Diesel	7153.907637
Orange		2026 Construction and Mining - Compactor	Aggregate	Aggregate	Diesel	11642.54923
Orange		2026 Construction and Mining - Concrete Mixer	Aggregate	Aggregate	Diesel	1077.218975
Orange		2026 Construction and Mining - Concrete Pump	Aggregate	Aggregate	Diesel	10931.98532
Orange		2026 Construction and Mining - Crane less than 3	Aggregate	Aggregate	Diesel	5284.01283
Orange		2026 Construction and Mining - Cranes	Aggregate	Aggregate	Diesel	265504.5885
Orange		2026 Construction and Mining - Crawler Tractors	Aggregate	Aggregate	Diesel	784892.2512
Orange		2026 Construction and Mining - Crushing/Process	Aggregate	Aggregate	Diesel	41755.25093
Orange		2026 Construction and Mining - Excavators	Aggregate	Aggregate	Diesel	2477860.08
Orange		2026 Construction and Mining - Graders	Aggregate	Aggregate	Diesel	356900.3229
Orange		2026 Construction and Mining - Hopper Tractor	Aggregate	Aggregate	Diesel	706.2194177
Orange		2026 Construction and Mining - Misc - Bore/Drill	Aggregate	Aggregate	Diesel	85.1
Orange		2026 Construction and Mining - Misc - Cement A	Aggregate	Aggregate	Diesel	124.2
Orange		2026 Construction and Mining - Misc - Concrete/	Aggregate	Aggregate	Diesel	4839.2
Orange		2026 Construction and Mining - Misc - Dumpers/	Aggregate	Aggregate	Diesel	10
Orange		2026 Construction and Mining - Misc - Excavator	Aggregate	Aggregate	Diesel	71.5
Orange		2026 Construction and Mining - Misc - Other	Aggregate	Aggregate	Diesel	266.4
Orange		2026 Construction and Mining - Misc - Pavers	Aggregate	Aggregate	Diesel	18.9

Orange	2026 Construction and Mining - Misc - Paving Eq	Aggregate	Diesel	31.9
Orange	2026 Construction and Mining - Misc - Plate Com	Aggregate	Diesel	89.2
Orange	2026 Construction and Mining - Misc - Rollers	Aggregate	Diesel	548
Orange	2026 Construction and Mining - Misc - Rubber Tir	Aggregate	Diesel	13.1
Orange	2026 Construction and Mining - Misc - Signal Boa	Aggregate	Diesel	3535.25
Orange	2026 Construction and Mining - Misc - Skid Steer	Aggregate	Diesel	3670
Orange	2026 Construction and Mining - Misc - Tractors/L	Aggregate	Diesel	342
Orange	2026 Construction and Mining - Misc - Trenchers	Aggregate	Diesel	461
Orange	2026 Construction and Mining - Nurse Rig Other	Aggregate	Diesel	65.20325114
Orange	2026 Construction and Mining - Off-Highway Trac	Aggregate	Diesel	445252.6358
Orange	2026 Construction and Mining - Off-Highway Tru	Aggregate	Diesel	1065828.57
Orange	2026 Construction and Mining - Other Constructi	Aggregate	Diesel	509387.7034
Orange	2026 Construction and Mining - Pavers	Aggregate	Diesel	159410.1796
Orange	2026 Construction and Mining - Paving Equipmer	Aggregate	Diesel	176178.9235
Orange	2026 Construction and Mining - Rollers	Aggregate	Diesel	418156.5927
Orange	2026 Construction and Mining - Rough Terrain Fc	Aggregate	Diesel	520129.8972
Orange	2026 Construction and Mining - Rubber Tired Do	Aggregate	Diesel	97459.83317
Orange	2026 Construction and Mining - Rubber Tired Loa	Aggregate	Diesel	1816611.083
Orange	2026 Construction and Mining - Scrapers	Aggregate	Diesel	992080.6688
Orange	2026 Construction and Mining - Skid Steer Load	Aggregate	Diesel	851290.483
Orange	2026 Construction and Mining - Spray Truck	Aggregate	Diesel	10441.2567
Orange	2026 Construction and Mining - Spreader Tractor	Aggregate	Diesel	1316.378776
Orange	2026 Construction and Mining - Spreader Truck	Aggregate	Diesel	8176.531814
Orange	2026 Construction and Mining - Surfacing Equipn	Aggregate	Diesel	84219.91477
Orange	2026 Construction and Mining - Tank Truck	Aggregate	Diesel	17845.26527
Orange	2026 Construction and Mining - Tanker Truck Tra	Aggregate	Diesel	1359.898226
Orange	2026 Construction and Mining - Telescopic Handl	Aggregate	Diesel	35626.9539
Orange	2026 Construction and Mining - Tractors/Loaders	Aggregate	Diesel	2410382.755
Orange	2026 Construction and Mining - Trenchers	Aggregate	Diesel	84045.28901
Orange	2026 Construction and Mining - Vacuum Truck	Aggregate	Diesel	27130.65338
Orange	2026 Construction and Mining - Water Truck	Aggregate	Diesel	80968.41256
Orange	2026 Construction and Mining - Misc - Asphalt Pa	Aggregate	Gasoline	19866.7
Orange	2026 Construction and Mining - Misc - Bore/Drill	Aggregate	Gasoline	12864.65
Orange	2026 Construction and Mining - Misc - Cement Ai	Aggregate	Gasoline	74534
Orange	2026 Construction and Mining - Misc - Concrete/	Aggregate	Gasoline	95662.05
Orange	2026 Construction and Mining - Misc - Cranes	Aggregate	Gasoline	10636.1
Orange	2026 Construction and Mining - Misc - Crushing/f	Aggregate	Gasoline	478
Orange	2026 Construction and Mining - Misc - Dumpers/	Aggregate	Gasoline	7755.7
Orange	2026 Construction and Mining - Misc - Other	Aggregate	Gasoline	16206
Orange	2026 Construction and Mining - Misc - Paving Eq	Aggregate	Gasoline	140412.75
Orange	2026 Construction and Mining - Misc - Plate Com	Aggregate	Gasoline	50918
Orange	2026 Construction and Mining - Misc - Rollers	Aggregate	Gasoline	67223.65
Orange	2026 Construction and Mining - Misc - Rough Ter	Aggregate	Gasoline	75044
Orange	2026 Construction and Mining - Misc - Rubber Tir	Aggregate	Gasoline	39785

Orange	2026 Construction and Mining - Misc - Signal Boa Aggregate	Aggregate Gasoline	1441.6
Orange	2026 Construction and Mining - Misc - Skid Steer Aggregate	Aggregate Gasoline	145672.7
Orange	2026 Construction and Mining - Misc - Surfacing I	Aggregate Gasoline	61798
Orange	2026 Construction and Mining - Misc - Tampers/f	Aggregate Gasoline	8510
Orange	2026 Construction and Mining - Misc - Tractors/L	Aggregate Gasoline	25528.1
Orange	2026 Construction and Mining - Misc - Trenchers	Aggregate Gasoline	123226.9

Operational Energy Consumption

Operational Source	Energy Usage	Countywide Energy Consumption	Percentage Increase
Electricity (Kilowatt-Hour)			
Proposed Project	502,605.5	18,759,000,000	0.003%
Natural Gas (Thousands British Thermal Units)			
Proposed Project	2,721,809.6	60,825,476,870	0.004%
Petroleum (Gasoline) Consumption			
	Annual VMT	Gallons of Gasoline Fuel	
Proposed Project	1,881,157.3	77,410.6	877,821,673.9
			0.009%

Source: CalEEMod Output Sheets (see Attachment B)

CalEEMod Output				
Land Use Type	Trips/Weekday	Trips/Saturday	VMT/Year	
Single Family Housing	511.2	621.96	1881157.321	
Parking Lot	0	0	0	0
Other Asphalt Surface	0	0	0	0

5.11. Operational Energy Consumption

5.11.1 Unmitigated

Land Use	Electricity (kWh/yr)	Natural Gas (kBtu/yr)
Single Family Housing	489555.3013	2721809.579
Parking Lot	13050.22752	0
Other Asphalt Surface	0	0

Source: EMFAC2025 (v2.0.0) Emissions Inventory

Region Type: County

Region: Orange

Calendar Year: 2026

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/year for Combustion VMT and Electric VMT, trips/year for Trips, tons/year for Emissions, 1000 gallons/year for Fuel Consumption, kWh/year for Energy Consumption, kg/year for Hydrogen Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Fuel Consumption
Orange		2026 HHDT	Aggregate	Aggregate	Diesel	90029.71103
Orange		2026 LDA	Aggregate	Aggregate	Diesel	531.2474279
Orange		2026 LDT1	Aggregate	Aggregate	Diesel	12.39961316
Orange		2026 LDT2	Aggregate	Aggregate	Diesel	430.4057661
Orange		2026 LHDT1	Aggregate	Aggregate	Diesel	9768.386964
Orange		2026 LHDT2	Aggregate	Aggregate	Diesel	10798.30689
Orange		2026 MDV	Aggregate	Aggregate	Diesel	4900.201638
Orange		2026 MH	Aggregate	Aggregate	Diesel	994.6018995
Orange		2026 MHDT	Aggregate	Aggregate	Diesel	29225.55792
Orange		2026 OBUS	Aggregate	Aggregate	Diesel	921.4344754
Orange		2026 SBUS	Aggregate	Aggregate	Diesel	560.3093819
Orange		2026 HHDT	Aggregate	Aggregate	Gasoline	99.24342338
Orange		2026 LDA	Aggregate	Aggregate	Gasoline	307402.6873
Orange		2026 LDT1	Aggregate	Aggregate	Gasoline	40634.13976
Orange		2026 LDT2	Aggregate	Aggregate	Gasoline	278942.7636
Orange		2026 LHDT2	Aggregate	Aggregate	Gasoline	7316.230399
Orange		2026 MCY	Aggregate	Aggregate	Gasoline	2513.971064
Orange		2026 MDV	Aggregate	Aggregate	Gasoline	207488.0276
Orange		2026 MH	Aggregate	Aggregate	Gasoline	4002.68797
Orange		2026 MHDT	Aggregate	Aggregate	Gasoline	25916.43022

Orange		2026 OBUS	Aggregate	Aggregate	Gasoline	1687.833577
Orange		2026 SBUS	Aggregate	Aggregate	Gasoline	645.3856039
Orange		2026 UBUS	Aggregate	Aggregate	Gasoline	1172.27338
Fuel	Sum	Annual Consumption				
Diesel		148172.563	148,172,563			
Gasoline		877821.6739	877,821,674			