

DATE: November 4, 2022
TO: Eric E. Everhart, Toll Brothers
FROM: Haseeb Qureshi
Ali Dadabhoy
JOB NO: 14919-05 AQ, GHG & EA Assessment

ALTA VISTA RESIDENTIAL - NORTH PARCEL AIR QUALITY, GREENHOUSE GAS & ENERGY ASSESSMENT

Eric E. Everhart,

Urban Crossroads, Inc. is pleased to provide the following Air Quality, Greenhouse Gas & Energy Assessment for the Alta Vista Residential - North Parcel (**Project**), which is located north of Alta Vista Street, east of Rose Drive, and west of Jefferson Drive in the City of Placentia. The proposed Project is located approximately 2.2 miles east of State Route 57, and roughly 7.7 miles east of the Fullerton Municipal Airport.

PROJECT OVERVIEW

Tract #15700 was approved by the City of Placentia and it remains the approved land use entitlement for the property. It authorized 74 single family residences. The City of Placentia previously prepared an initial study/mitigated negative declaration (IS/MND) and approved a vesting tentative subdivision map for 74 single family residences. The prior property owner recorded a final subdivision map for a total of 62 single-family lots with a remainder parcel covering the existing oil operations area.

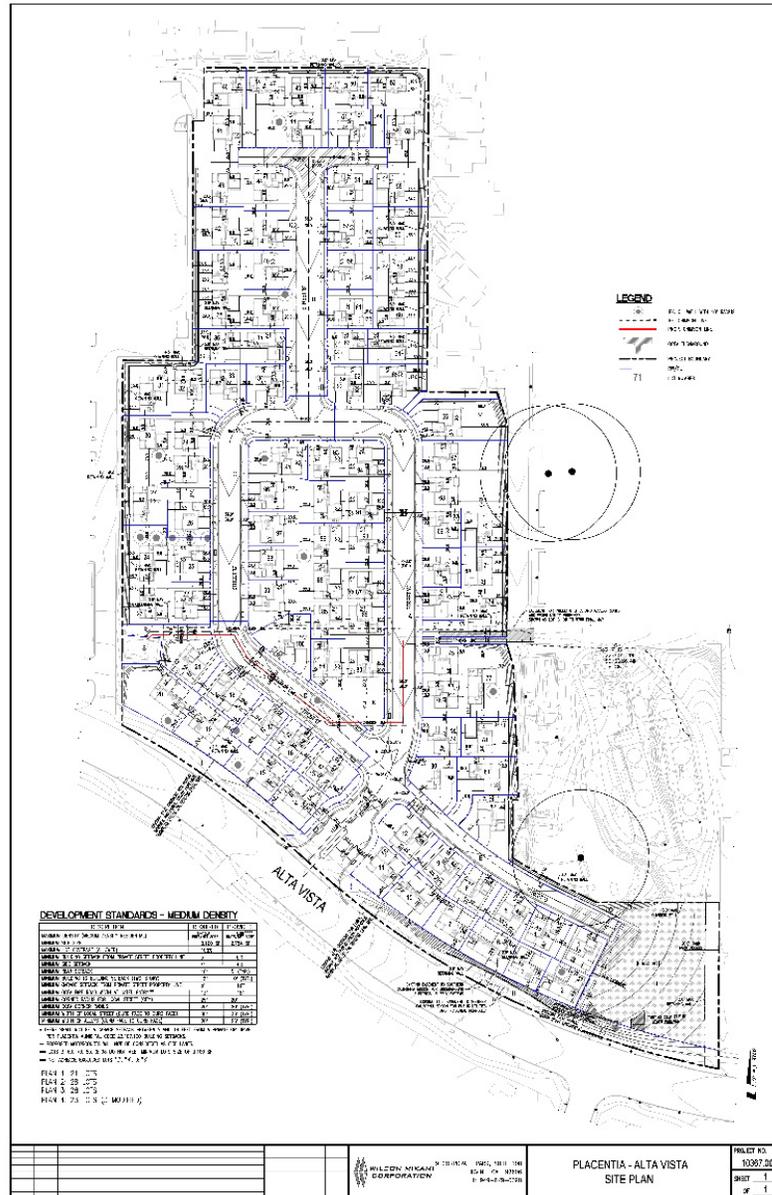
The current Project (Vesting TTM 19250) adds 26 additional residential units, for a total of 100 lots (including the 74 units that previously were approved on the property for which a final subdivision map was recorded for 62 of the lots), as shown on Exhibit 1. Consequently, the purpose of this Air Quality, Greenhouse Gas & Energy Assessment is to evaluate potential impacts associated with the Project's net increase in 26 dwelling units compared to the prior approved residential project and the cumulative impacts of the 100-unit Project.

The Project site is currently vacant. Existing single-family residential uses in the Project study area are located adjacent to the eastern and southern Project site boundaries, and west across Rose Drive. Existing commercial uses and Bridgemark Corporation oil drilling facilities are located east and adjacent to the Project site.

SUMMARY OF FINDINGS

Results of the assessment indicate that the Project would result in a less than significant impact with respect to air quality, greenhouse gases and energy and no mitigation is required.

EXHIBIT 1: PROJECT'S TENTATIVE TRACT MAP



PROJECT AIR QUALITY IMPACTS

AIR QUALITY SETTING

SOUTH COAST AIR BASIN (SCAB)

The Project site is located in the SCAB within the jurisdiction of South Coast Air Quality Management District (SCAQMD) (3). The SCAQMD was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the SCAQMD is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. As previously stated, the Project site is located within the SCAB, a 6,745-square mile subregion of the SCAQMD, which includes portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County.

The SCAB is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Los Angeles County portion of the Mojave Desert Air Basin is bounded by the San Gabriel Mountains to the south and west, the Los Angeles / Kern County border to the north, and the Los Angeles / San Bernardino County border to the east. The Riverside County portion of the Salton Sea Air Basin is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley.

Regional Climate

The regional climate has a substantial influence on air quality in the SCAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality.

The annual average temperatures throughout the SCAB vary from the low to middle 60s degrees Fahrenheit (°F). Due to a decreased marine influence, the eastern portion of the SCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SCAB, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the SCAB have recorded maximum temperatures above 100°F.

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB, and the conversion of sulfur dioxide (SO₂) to sulfates (SO₄) is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the SCAB is 71 percent (%) along the coast and 59% inland. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90% of the SCAB's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the SCAB with frequency being higher near the coast.

Due to its generally clear weather, about three-quarters of available sunshine is received in the SCAB. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and on the longest day of the year there are approximately 14½ hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SCAB is the "Catalina Eddy," a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections.

In the SCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as nitrogen oxides (NOX) and carbon monoxide (CO) from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

Wind Patterns and Project Location

The distinctive climate of the Project area and the SCAB is determined by its terrain and geographical location. The SCAB is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter.

Wind patterns across the south coastal region are characterized by westerly and southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season.

Criteria Pollutants

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called “criteria” pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are ozone (O₃) (precursor emissions include NO_x and reactive organic gases (ROG), CO, particulate matter (PM), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The Riverside County portion of the SCAB is designated as a nonattainment area for the federal O₃ and PM_{2.5} standards and is also a nonattainment area for the state standards for O₃, PM₁₀, and PM_{2.5}.

Sensitive Receptor Locations

Some people are especially sensitive to air pollution and are given special consideration when evaluating air quality impacts from projects. These groups of people include children, the elderly, and individuals with pre-existing respiratory or cardiovascular illness. Structures that house these persons or places where they gather are defined as “sensitive receptors”. These structures typically include uses such as residences, hotels, and hospitals where an individual can remain for 24 hours. Consistent with the LST Methodology, the nearest land use where an individual could remain for 24 hours to the Project site has been used to determine construction and operational air quality impacts for emissions of PM₁₀ and PM_{2.5}, since PM₁₀ and PM_{2.5} thresholds are based on a 24-hour averaging time.

Receptors in the Project study area are described below. All distances are measured from the Project site boundary to the outdoor living areas (e.g., backyards) or at the building façade, whichever is closer to the Project site. Receptors in the Project study area are shown on Exhibit 2 under the Localized Construction Emissions section later in the report.

- Receptor R1 represents the existing outdoor living areas (backyards) of residential homes located roughly 14 feet northwest of the Project site on Antiqua Circle.
- Receptor R2 represents the existing outdoor living areas (backyards) of residential homes located roughly 12 feet northeast of the Project site on Antiqua Circle.
- Receptor R3 represents the existing Placentia Champions Sports Complex and park located approximately 115 feet east of the Project site on Blankenship Circle.
- Receptor R4 represents the existing Placentia Champions Sports Complex and park located approximately 33 feet east of the southern portion of the Project site near Alta Vista Street.
- Receptor R5 represents existing outdoor living areas (backyards) of residential homes located roughly 114 feet south of the Project site on Alta Vista Street.

REGULATORY BACKGROUND

FEDERAL REGULATIONS

The EPA is responsible for setting and enforcing the national ambient air quality standards (NAAQS) for O₃, CO, NO_x, SO₂, PM₁₀, and lead (Pb) (5). The EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of CARB.

The Federal Clean Air Act (CAA) was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance (6). The CAA also mandates that each state submit and implement state implementation plans (SIPs) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions) (7) (8). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O₃, NO₂, SO₂, PM₁₀, CO, PM_{2.5}, and Pb. The NAAQS were amended in July 1997 to include an additional standard for O₃ and to adopt a NAAQS for PM_{2.5}.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and NO_x. NO_x is a collective term that includes all forms of NO_x which are emitted as byproducts of the combustion process.

CALIFORNIA REGULATIONS

CARB

The CARB, which became part of the California EPA (CalEPA) in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. AB 2595 mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. The CARB established the California ambient air quality standards (CAAQS) for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for SO₄, visibility, hydrogen sulfide (H₂S), and vinyl chloride (C₂H₃Cl). However, at this time, H₂S and C₂H₃Cl are not measured at any monitoring stations in the SCAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS (1) (2).

Local air quality management districts, such as the SCAQMD, regulate air emissions from stationary sources such as commercial and industrial facilities. All air pollution control districts have been formally designated as attainment or non-attainment for each CAAQS.

Serious non-attainment areas are required to prepare Air Quality Management Plans (AQMP) that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development);
- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a 5% or more annual reduction in emissions or 15% or more in a period of three years for ROGs, NO_x, CO and PM₁₀. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than 5% per year under certain circumstances.

AQMP

Currently, the NAAQS and CAAQS are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of AQMP to meet the state and federal ambient air quality standards (10). AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

APPLICABLE REGULATORY REQUIREMENTS

SCAQMD Rules that are currently applicable during construction activity for this Project include but are not limited to Rule 403 (Fugitive Dust), Rule 445 (Wood Burning Devices), and Rule 1113 (Architectural Coatings) (3) (4) (5).

SCAQMD Rule 403

This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent and reduce fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust and requires best available control measures to be applied to earth moving and grading activities. This rule is intended to reduce PM₁₀ emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM₁₀ suppression techniques are summarized below.

- Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.
- All onsite roads will be paved as soon as feasible or watered periodically or chemically stabilized.
- All material transported offsite will be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.
- Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the workday to remove soil tracked onto the paved surface.

SCAQMD Rule 445

This rule is intended to reduce the emission of particulate matter from wood-burning devices. The Project is required to comply with SCAQMD Rule 445, which prohibits the use of wood burning stoves and fireplaces in new development.

SCAQMD Rule 1113

This rule serves to limit the volatile organic compound (VOC) content of architectural coatings used on projects in the SCAQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the SCAQMD must comply with the current VOC standards set in this rule.

METHODOLOGY

In May 2022, the California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of the CalEEMod Version 2022.1. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5}) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (6). Accordingly, the latest version of CalEEMod has been used for this Project to determine construction and operational air quality and greenhouse gas emissions.

Standards of Significance

The criteria used to determine the significance of potential Project-related air quality impacts are taken from the California Environmental Quality Act Guidelines (CEQA Guidelines) (14 CCR §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would (7):

- **Threshold 1:** Conflict with or obstruct implementation of the applicable air quality plan.
- **Threshold 2:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.
- **Threshold 3:** Expose sensitive receptors to substantial pollutant concentrations.

- **Threshold 4:** Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

AIR QUALITY REGIONAL EMISSIONS THRESHOLDS

The SCAQMD has developed regional significance thresholds for criteria pollutants, as summarized at Table 1 (8). The SCAQMD’s CEQA Air Quality Significance Thresholds (April 2019) indicate that any projects in the South Coast Air Basin (SCAB) with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

TABLE 1: MAXIMUM DAILY REGIONAL EMISSIONS THRESHOLDS

Pollutant	Construction	Operations
NO _x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM ₁₀	150 lbs/day	150 lbs/day
PM _{2.5}	55 lbs/day	55 lbs/day
SO _x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day

lbs/day – Pounds Per Day

AIR QUALITY LOCALIZED EMISSIONS THRESHOLDS

For this Project, the appropriate SRA for the LST analysis is the SCAQMD North Orange County monitoring station (SRA 16). LSTs apply to CO, NO₂, PM₁₀, and PM_{2.5}. The SCAQMD produced look-up tables for projects less than or equal to 5 acres in size. The SCAQMD’s screening look-up tables are utilized in determining localized impacts. It should be noted that since the look-up tables identify thresholds at only 1 acre, 2 acres, and 5 acres, linear regression has been utilized to determine localized significance thresholds. Consistent with SCAQMD guidance, the thresholds presented in Table 2 were calculated by interpolating the threshold values for the Project’s disturbed acreage.

The acres disturbed is based on the equipment list and days in the site preparation and grading phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday. The equipment-specific grading rates are summarized in the CalEEMod user’s guide, Appendix A: Calculation Details for CalEEMod (9). It should be noted that the disturbed area per day is representative of a piece of equipment making multiple passes over the same land area. In other words, one Rubber Tired Dozer can make multiple passes over the same land area totaling 0.5 acres in a given 8-hour day. Appendix A of the CalEEMod User Manual only identifies equipment-specific grading rates for Crawler Tractors, Graders, Rubber Tired Dozers, and Scrapers; therefore, Tractors/Loaders/Backhoes equipment that was included in the site preparation and grading phase was replaced with crawler tractors. For analytical purposes, emissions associated with peak site preparation and grading activities are considered for purposes of localized significance thresholds (LSTs) since this phase represents the maximum

localized emissions that would occur. The entire 100-unit Project’s construction activities could disturb a maximum of approximately 0.5 acres per day for site preparation and 3.5 acres per day for grading activities. Any other construction phases of development would result in lesser emissions and consequently lesser impacts than what is disclosed herein. As such, Table 2 presents thresholds for localized construction and operational emissions.

TABLE 2: MAXIMUM DAILY LOCALIZED EMISSIONS THRESHOLDS

Source	Activity	Emissions (lbs/day)			
		VOC	NOX	PM ₁₀	PM _{2.5}
Construction	Site Preparation	81 lbs/day	402 lbs/day	3 lbs/day	3 lbs/day
	Grading	184 lbs/day	1,037 lbs/day	9 lbs/day	5 lbs/day

¹Source of localized significance threshold (LSTs) is provided on page 8.

REGIONAL CONSTRUCTION EMISSIONS SUMMARY

The estimated maximum daily construction emissions without mitigation are summarized on Table 3. Detailed construction model outputs are presented in Attachment A. Under the assumed scenarios, emissions resulting from the entire 100-unit Project construction will not exceed thresholds established by the SCAQMD for emissions of any criteria pollutant and no mitigation is required.

In addition, to support the Project development, there may be off-site construction associated with infrastructure improvements. It is expected that the off-site construction activities would not occur at one location for the entire duration of construction. Impacts associated with these activities are not expected to exceed the emissions identified for Project-related construction activities since the off-site construction areas would have physical constraints on the area of work such as, infrastructure across the roadway, and sidewalks, which would limit the amount of daily activity that could occur. The physical constraints would limit the amount of construction equipment that could be used, and any off-site and utility infrastructure construction would not use equipment totals that would exceed the equipment totals required for the Project construction activities. As such, no impacts beyond what has already been identified in this report are expected to occur.

REGIONAL OPERATIONAL EMISSIONS

Operational activities associated with the entire 100-unit Project would result in emissions of CO, VOCs, NO_x, SO_x, PM₁₀, and PM_{2.5}. Operational related emissions are expected from the following primary sources: area source emissions, energy source emissions, and mobile source emissions,

The Project related operational air quality impacts derive primarily from vehicle trips generated by the Project. Trip characteristics available from the *Placentia Alta Vista Traffic Analysis* report were utilized in this analysis (10).

The estimated operation-source emissions from the entire 100-unit Project are summarized on Table 4. Detailed operation model outputs are presented in Attachment A. As shown on Table 4,

operational-source emissions would not exceed the applicable SCAQMD regional thresholds for emissions of any criteria pollutant and no mitigation is required.

TABLE 3: OVERALL REGIONAL CONSTRUCTION EMISSIONS SUMMARY

Source	Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Summer						
2023	6.51	61.50	49.30	0.15	6.74	3.60
2024	2.16	8.60	12.90	0.02	1.18	0.55
2025	1.29	1.87	4.46	< 0.005	0.70	0.20
2026	1.27	1.79	4.31	< 0.005	0.69	0.19
2027	1.24	1.73	4.15	< 0.005	0.68	0.19
2028	1.22	1.66	4.02	< 0.005	0.68	0.18
Winter						
2023	6.32	59.70	49.40	0.15	7.10	3.56
2024	2.16	8.64	12.40	0.02	1.18	0.55
2025	1.29	1.91	4.14	< 0.005	0.70	0.20
2026	1.27	1.83	4.00	< 0.005	0.69	0.19
2027	1.23	1.75	3.86	< 0.005	0.68	0.19
2028	1.22	1.70	3.74	< 0.005	0.68	0.18
Maximum Daily Emissions	6.51	61.50	49.40	0.15	7.10	3.60
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

¹PM₁₀ and PM_{2.5} source emissions reflect 3x daily watering per SCAQMD Rule 403 for fugitive dust.

TABLE 4: TOTAL PROJECT REGIONAL OPERATIONAL EMISSIONS

Source	Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Summer						
Mobile Source	2.74	1.86	22.20	0.06	2.31	0.44
Area Source	5.11	1.55	6.29	0.01	0.12	0.12
Energy Source	0.06	0.97	0.41	0.01	0.08	0.08
Total Maximum Daily Emissions	7.91	4.38	28.90	0.08	2.51	0.64
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO
Winter						
Mobile Source	2.71	2.02	20.70	0.06	2.31	0.44
Area Source	4.59	1.49	0.64	0.01	0.12	0.12
Energy Source	0.06	0.97	0.41	0.01	0.08	0.08
Total Maximum Daily Emissions	7.36	4.48	21.75	0.08	2.51	0.64
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

LOCALIZED CONSTRUCTION EMISSIONS

The analysis uses the methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (LST Methodology) (11). The SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs). The SCAQMD established LSTs in response to the SCAQMD Governing Board's Environmental Justice Initiative I-41. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses. It should be noted that SCAQMD also states that projects that are statutorily or categorically exempt under CEQA would not be subject to LST analyses. Projects exempt from CEQA also include infill projects that meet the H&S Code provisions. As such, although not required for this Project, LST analysis is presented to further underscore that there are in fact no significant impacts associated with the Project.

1 The purpose of SCAQMD's Environmental Justice program is to ensure that everyone has the right to equal protection from air pollution and fair access to the decision-making process that works to improve the quality of air within their communities. Further, the SCAQMD defines Environmental Justice as "...equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution."

The SCAQMD recommends that the nearest sensitive receptor be considered when determining the Project's potential to cause an individual or cumulatively significant impact. The nearest land use where an individual could remain for 24 hours to the Project site has been used to determine localized construction and operational air quality impacts for emissions of PM₁₀ and PM_{2.5} (since PM₁₀ and PM_{2.5} thresholds are based on a 24-hour averaging time). The nearest receptor used for evaluation of localized impacts of PM₁₀ and PM_{2.5} is location R2 represented by the outdoor living areas (backyards) of residential homes located on Antiqua Circle, approximately 12 feet (4 meters) northeast of the Project site. As such, for evaluation of localized PM₁₀ and PM_{2.5}, a 25-meter distance will be used. Receptors in the Project study area shown on Exhibit 2.

As previously stated, and consistent with LST Methodology, the nearest industrial/commercial use to the Project site is used to determine construction and operational LST air impacts for emissions of NO_x and CO as the averaging periods for these pollutants are shorter (8 hours or less) and it is reasonable to assume that an individual could be present at these sites for periods of one to 8 hours. It should be noted that the existing residence (R2) is located at a closer distance than the nearest industrial/commercial use. As such, the same receptor will be used for evaluation of localized NO_x and CO.

EXHIBIT 2: SENSITIVE RECEPTOR LOCATIONS



LOCALIZED OPERATIONAL EMISSIONS

Table 5 identifies the localized impacts at the nearest receptor location in the vicinity of the Project. Outputs from the model runs for construction LSTs are provided in Attachment A. For analytical purposes, emissions associated with peak site preparation and grading activities are considered for purposes of LSTs since these phases represents the maximum localized emissions that would occur. Any other construction phases of development that overlap would result in lesser emissions and consequently lesser impacts than what is disclosed herein. As shown in Table 5, emissions resulting from the entire 100-unit construction will not exceed the numerical thresholds of significance established by the SCAQMD for any criteria pollutant. Thus, a less than significant impact would occur for localized Project-related construction-source emissions and no mitigation is required.

TABLE 5: PROJECT LOCALIZED CONSTRUCTION IMPACTS

On-Site Emissions	Emissions (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Site Preparation				
Maximum Daily Emissions	3.58	3.56	0.20	0.18
SCAQMD Localized Threshold	81	402	3	3
Threshold Exceeded?	NO	NO	NO	NO
Grading				
Maximum Daily Emissions	44.40	34.80	4.43	2.71
SCAQMD Localized Threshold	184	1,037	9	5
Threshold Exceeded?	NO	NO	NO	NO

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 1

Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The Project site is located within the SCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 10,743 square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the Southern California Association of Governments (SCAG), county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards.

Currently, these state and federal air quality standards are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of AQMPs to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

In March 2017, the SCAQMD released the Final 2016 AQMP (2016 AQMP). The 2016 AQMP continues to evaluate current integrated strategies and control measures to meet the NAAQS, as well as explore new and innovative methods to reach its goals. Some of these approaches include utilizing incentive programs, recognizing existing co-benefit programs from other sectors, and developing a strategy with fair-share reductions at the federal, state, and local levels (17). Similar to the 2012 AQMP, the 2016 AQMP incorporates scientific and technological information and planning assumptions, including the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016-2040 RTP/SCS), a planning document that supports the integration of land use and transportation to help the region meet the federal CAA requirements (10). The Project's consistency with the AQMP will be determined using the 2016 AQMP as discussed below.

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the 1993 CEQA Handbook (18). These indicators are discussed below.

The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

The violations under this criterion refer to the CAAQS and NAAQS. CAAQS and NAAQS violations would occur if regional or localized significance thresholds were exceeded.

CAAQS and NAAQS violations would occur if regional or localized significance thresholds were exceeded. As evaluated, the Project's regional and localized construction and operational-source emissions would not exceed applicable regional significance thresholds. Consequently, the Project would result in a less than significant impact based on an increase in 26 units compared to the approved 74-unit project and based on the total 100 dwelling units included in the Project.

On the basis of the preceding discussion, the Project is determined to be consistent with the first criterion.

The Project will not exceed the assumptions in the AQMP based on the years of Project build-out phase.

The 2016 AQMP demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the SCAG, which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections in City of Placentia General Plan is considered to be consistent with the AQMP.

Peak day emissions generated by construction activities are largely independent of land use assignments, but rather are a function of development scope and maximum area of disturbance. Irrespective of the site's land use designation, development of the site to its maximum potential would likely occur, with disturbance of the entire site occurring during construction activities. As such, when considering that no emissions thresholds will be exceeded, a less than significant impact would result.

The City of Placentia General Plan designates the Project site as Medium Density Residential uses. The Medium Density Residential designation allows for up to 15 dwelling units per acre. Medium

density developments provide greater opportunities to reduce environmental effects such as noise and aesthetics from adjacent uses than lower density developments (12).

As the Project includes an additional 26 units compared to the original 74-unit residential development for a total of 100 single-family residential dwelling units or 6.98 dwelling units per acre, the Project's proposed uses are consistent with the site's land use designations, and a general plan amendment will not be required.

On the basis of the preceding discussion, the Project is determined to be consistent with the second criterion.

As the proposed Project is consistent with site's land use designation, would not exceed any applicable regional or local thresholds, and would not result in or cause NAAQS or CAAQS violations, the Project is therefore considered to be consistent with the AQMP and a less than significant impact is expected.

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 2

Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

The CAAQS designate the Project site as nonattainment for O₃, PM₁₀, and PM_{2.5} while the NAAQS designates the Project site as nonattainment for O₃ and PM_{2.5}.

The SCAQMD has published a report on how to address cumulative impacts from air pollution: White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution (13). In this report the SCAQMD clearly states (Page D-3):

"...the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for TAC emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.

Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."

Therefore, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which SCAB is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and

operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable.

Construction Impacts

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that proposed Project construction-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, proposed Project construction-source emissions would be considered less than significant on a project-specific and cumulative basis.

Operational Impacts

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that proposed Project operational-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, the proposed Project operational-source emissions would be considered less than significant on a project-specific and cumulative basis.

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 3

Would the expose sensitive receptors to substantial pollutant concentrations?

The potential impact of Project-generated air pollutant emissions at sensitive receptors has also been considered. Results of the LST analysis indicate that the Project will not exceed the SCAQMD localized significance thresholds during construction. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations during Project construction.

Additionally, the entire 100-unit Project will not exceed the SCAQMD localized significance thresholds during operational activity. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations as the result of Project operations.

CO "HOT SPOT" ANALYSIS

As discussed below, the Project would not result in potentially adverse CO concentrations or "hot spots." Further, detailed modeling of Project-specific CO "hot spots" is not needed to reach this conclusion. An adverse CO concentration, known as a "hot spot", would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur.

It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. In response, vehicle emissions standards have become increasingly stringent in the last twenty years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SCAB is now designated as attainment. To establish a more accurate record of baseline CO concentrations affecting the SCAB, a CO "hot spot" analysis was conducted in 2003 for four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards, as shown on Table 6.

TABLE 6: CO MODEL RESULTS

Intersection Location	CO Concentrations (ppm)		
	Morning 1-hour	Afternoon 1-hour	8-hour
Wilshire Boulevard/Veteran Avenue	4.6	3.5	3.7
Sunset Boulevard/Highland Avenue	4	4.5	3.5
La Cienega Boulevard/Century Boulevard	3.7	3.1	5.2
Long Beach Boulevard/Imperial Highway	3	3.1	8.4

Notes: Federal 1-hour standard is 35 ppm and the deferral 8-hour standard is 9.0 ppm.

Based on the SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SCAB were a result of unusual meteorological and topographical conditions and not a result of traffic volumes and congestion at a particular intersection. As evidence of this, for example, 8.4 ppm 8-hr CO concentration measured at the Long Beach Blvd. and Imperial Hwy. intersection (highest CO generating intersection within the "hot spot" analysis), only 0.7 ppm was attributable to the traffic volumes and congestion at this intersection; the remaining 7.7 ppm were due to the ambient air measurements at the time the 2003 AQMP was prepared (20). In contrast, an adverse CO concentration, known as a "hot spot", would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour (vph)—or 24,000 vph where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (21). Traffic volumes generating the CO concentrations for the "hot spot" analysis is shown on Table 7. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vph and AM/PM traffic volumes of 8,062 vph and 7,719 vph respectively (20). The 2003 AQMP estimated that the 1-hour concentration for this intersection was 4.6 ppm; this indicates that, should the daily traffic volume increase four times to 400,000 vehicles per day, CO concentrations (4.6 ppm x 4= 18.4 ppm) would still not likely exceed the most stringent 1-hour CO standard (20.0 ppm).

TABLE 7: CO MODEL RESULTS

Intersection Location	Peak Traffic Volumes (vph)				
	Eastbound (AM/PM)	Westbound (AM/PM)	Southbound (AM/PM)	Northbound (AM/PM)	Total (AM/PM)
Wilshire Boulevard/Veteran Avenue	4,954/2,069	1,830/3,317	721/1,400	560/933	8,062/7,719
Sunset Boulevard/Highland Avenue	1,417/1,764	1,342/1,540	2,304/1,832	1,551/2,238	6,614/5,374
La Cienega Boulevard/Century Boulevard	2,540/2,243	1,890/2,728	1,384/2,029	821/1,674	6,634/8,674
Long Beach Boulevard/Imperial Highway	1,217/2,020	1,760/1,400	479/944	756/1,150	4,212/5,514

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 4

Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The potential for the Project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

The Project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed Project’s (long-term operational) uses. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less than significant. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the solid waste regulations. The proposed Project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed Project construction and operations would be less than significant and no mitigation is required (14).

PROJECT GHG ANALYSIS

CLIMATE CHANGE SETTING

Global climate change (GCC) is the change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms. The majority of scientists believe that the climate shift taking place since the Industrial Revolution is occurring at a quicker rate and magnitude than in the past. Scientific evidence suggests that GCC is the result of increased concentrations of GHGs in the earth's atmosphere, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. The majority of scientists believe that this increased rate of climate change is the result of GHGs resulting from human activity and industrialization over the past 200 years.

An individual project like the proposed Project evaluated in this memo cannot generate enough GHG emissions to affect a discernible change in global climate. However, the proposed Project may participate in the potential for GCC by its incremental contribution of GHGs combined with the cumulative increase of all other sources of GHGs, which when taken together constitute potential influences on GCC. Because these changes may have serious environmental consequences, this memo will evaluate the potential for the proposed Project to have a significant effect upon the environment as a result of its potential contribution to the greenhouse effect.

GCC refers to the change in average meteorological conditions on the earth with respect to temperature, wind patterns, precipitation and storms. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, CO₂, N₂O, CH₄, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). These particular gases are important due to their residence time (duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the earth's atmosphere, but prevent radioactive heat from escaping, thus warming the earth's atmosphere. GCC can occur naturally as it has in the past with the previous ice ages.

Gases that trap heat in the atmosphere are often referred to as GHGs. GHGs are released into the atmosphere by both natural and anthropogenic activity. Without the natural GHG effect, the earth's average temperature would be approximately 61 degrees Fahrenheit (°F) cooler than it is currently. The cumulative accumulation of these gases in the earth's atmosphere is considered to be the cause for the observed increase in the earth's temperature.

For the purposes of this analysis, emissions of CO₂, CH₄, and N₂O were evaluated because these gases are the primary contributors to GCC from development projects. Although there are other substances such as fluorinated gases that also contribute to GCC, these fluorinated gases were not evaluated as their sources are not well-defined and do not contain accepted emissions factors or methodology to accurately calculate these gases.

REGULATORY SETTING

Executive Order S-3-05

Former California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.

- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80% below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Assembly Bill (AB) 32

The California State Legislature enacted AB 32, which requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "GHGs" as defined under AB 32 include CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. CARB is the state agency charged with monitoring and regulating sources of GHGs. Pursuant to AB 32, CARB adopted regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 states the following:

"Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems."

CARB approved the 1990 GHG emissions level of 427 million metric ton of CO₂ equivalent per year (MMTCO₂e) on December 6, 2007 (15). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 MMTCO₂e. Emissions in 2020 in a "business as usual" (BAU) scenario were estimated to be 596 MMTCO₂e, which do not account for reductions from AB 32 regulations (16). At that level, a 28.4% reduction was required to achieve the 427 MMTCO₂e 1990 inventory. In October 2010, CARB prepared an updated BAU 2020 forecast to account for the recession and slower forecasted growth. The forecasted inventory without the benefits of adopted regulation is now estimated at 545 MMTCO₂e. Therefore, under the updated forecast, a 21.7% reduction from BAU is required to achieve 1990 levels (17).

Progress in Achieving AB 32 Targets and Remaining Reductions Required

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is shown in updated emission inventories prepared by CARB for 2000 through 2012 (18). The State has achieved the Executive Order S-3-05 target for 2010 of reducing GHG emissions to 2000 levels. As shown below, the 2010 emission inventory achieved this target.

- 1990: 427 MMTCO₂e (AB 32 2020 target)
- 2000: 463 MMTCO₂e (an average 8% reduction needed to achieve 1990 base)
- 2010: 450 MMTCO₂e (an average 5% reduction needed to achieve 1990 base)

CARB has also made substantial progress in achieving its goal of achieving 1990 emissions levels by 2020. As described earlier in this section, CARB revised the 2020 BAU inventory forecast to account for new lower growth projections, which resulted in a new lower reduction from BAU to achieve the 1990 base. The previous reduction from 2020 BAU needed to achieve 1990 levels was 28.4% and the latest reduction from 2020 BAU is 21.7%.

- 2020: 545 MMTCO₂e BAU (an average 21.7% reduction from BAU needed to achieve 1990 base)

Senate Bill (SB) 32

On September 8, 2016, Governor Jerry Brown signed the SB 32 and its companion bill, AB 197. SB 32 requires the state to reduce statewide GHG emissions to 40% below 1990 levels by 2030, a reduction target that was first introduced in Executive Order B-30-15. The new legislation builds upon the AB 32 goal of 1990 levels by 2020 and provides an intermediate goal to achieving S-3-05, which sets a statewide GHG reduction target of 80% below 1990 levels by 2050. AB 197 creates a legislative committee to oversee regulators to ensure that CARB not only responds to the Governor, but also the Legislature (19).

AB 197

A condition of approval for SB 32 was the passage of AB 197. AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB Board and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

Executive Order B-55-18 and SB 100

Executive Order B-55-18 and SB 100. SB 100 and Executive Order B-55-18 were signed by Governor Brown on September 10, 2018. Under the existing RPS, 25% of retail sales are required to be from renewable sources by December 31, 2016, 33% by December 31, 2020, 40% by December 31, 2024, 45% by December 31, 2027, and 50% by December 31, 2030. SB 100 raises California's RPS requirement to 50% renewable resources target by December 31, 2026, and to achieve a 60% target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44% of retail sales by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030. In addition to targets under AB 32 and SB 32, Executive Order B-55-18 establishes a carbon neutrality goal for the state of California by 2045; and sets a goal to maintain net negative emissions thereafter. The Executive Order directs the California Natural Resources Agency (CNRA), California Environmental Protection Agency (CalEPA), the Department of Food and Agriculture (CDFA), and CARB to include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal.

Title 24 California Code of Regulations (CCR)

California Code of Regulations (CCR) Title 24 Part 6: The California Energy Code was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption.

The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. CCR, Title 24, Part 11: California Green Building Standards Code (CALGreen) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect on August 1, 2009, and is administered by the California Building Standards Commission.

CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2022 California Green Building Code Standards that will be effective on January 1, 2023². As construction of the entire 100-unit Project is anticipated to be completed in 2028, it is presumed that the Project would be required to comply with the Title 24 standards in place at that time.

SCAQMD

SCAQMD is the agency responsible for air quality planning and regulation in the SCAB. The SCAQMD addresses the impacts to climate change of projects subject to SCAQMD permit as a lead agency if they are the only agency having discretionary approval for the project and acts as a responsible agency when a land use agency must also approve discretionary permits for the project. The SCAQMD acts as an expert commenting agency for impacts to air quality. This expertise carries over to GHG emissions, so the agency helps local land use agencies through the development of models and emission thresholds that can be used to address GHG emissions.

In 2008, SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the SCAB. The Working Group developed several different options that are contained in the SCAQMD Draft Guidance Document – Interim CEQA GHG Significance Threshold, that could be applied by lead agencies. The working group has not provided additional guidance since release of the interim guidance in 2008. The SCAQMD Board has not approved the thresholds; however, the Guidance Document provides substantial evidence supporting the approaches to significance of GHG emissions that can be considered by the lead agency in adopting its own threshold. The current interim thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but 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 is less than significant:
 - Residential and commercial land use: 3,000 metric ton of CO₂ equivalent (MTCO₂e/yr)

² The 2022 California Green Building Standard Code will be published July 1, 2022.

- Industrial land use: 10,000 MTCO₂e/yr
- Based on land use type: residential: 3,500 MTCO₂e/yr; commercial: 1,400 MTCO₂e/yr; or mixed use: 3,000 MTCO₂e/yr
- Tier 4 has the following options:
 - Option 1: Reduce Business-as-Usual (BAU) emissions by a certain percentage; this percentage is currently undefined.
 - Option 2: Early implementation of applicable AB 32 Scoping Plan measures
 - Option 3: 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO₂e per SP per year for projects and 6.6 MTCO₂e per SP per year for plans;
 - Option 3, 2035 target: 3.0 MTCO₂e per SP per year for projects and 4.1 MTCO₂e per SP per year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's interim thresholds used the Executive Order S-3-05-year 2050 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap CO₂ concentrations at 450 ppm, thus stabilizing global climate.

SCAQMD only has authority over GHG emissions from development projects that include air quality permits. At this time, it is unknown if the project would include stationary sources of emissions subject to SCAQMD permits. Notwithstanding, if the Project requires a stationary permit, it would be subject to the applicable SCAQMD regulations.

SCAQMD Regulation XXVII, adopted in 2009 includes the following rules:

- Rule 2700 defines terms and post global warming potentials.
- Rule 2701, Southern California (SoCal) Climate Solutions Exchange, establishes a voluntary program to encourage, quantify, and certify voluntary, high quality certified GHG emission reductions in the SCAQMD.
- Rule 2702, GHG Reduction Program created a program to produce GHG emission reductions within the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

SCAQMD is the agency responsible for air quality planning and regulation in the SCAB. The SCAQMD addresses the impacts to climate change of projects subject to SCAQMD permit as a lead agency if they are the only agency having discretionary approval for the project and acts as a responsible agency when a land use agency must also approve discretionary permits for the project. The SCAQMD acts as an expert commenting agency for impacts to air quality. This expertise carries over to GHG emissions, so the agency helps local land use agencies through the development of models and emission thresholds that can be used to address GHG emissions.

GHG IMPACTS

Standards of Significance

According to the CEQA Guidelines Appendix G thresholds, to determine whether impacts from GHG emissions are significant. Would the project:

- **Threshold 1:** Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- **Threshold 2:** Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

The evaluation of an impact under CEQA requires measuring data from a project against both existing conditions and a “threshold of significance.” For establishing significance thresholds, the Office of Planning and Research’s amendments to the CEQA Guidelines Section 15064.7(c) state “[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.”

CEQA Guidelines Section 15064.4(a) further states, “. . . A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use . . . ; or (2) Rely on a qualitative analysis or performance-based standards.”

CEQA Guidelines Section 15064.4 provides that a lead agency should consider the following factors, among others, in assessing the significance of impacts from greenhouse gas emissions:

- **Consideration #1:** The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- **Consideration #2:** Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- **Consideration #3:** The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project’s incremental contribution of greenhouse gas emissions. In determining the significance of impacts, the lead agency may consider a project’s consistency with the State’s long-term climate goals or strategies, provided that substantial evidence supports the agency’s analysis of how those goals or strategies address the project’s incremental contribution to climate change and its conclusion that the project’s incremental contribution is not cumulatively considerable.

Discussion on Establishment of Significance Thresholds

Based on the foregoing guidance, the City of Placentia has elected to rely on compliance with a local air district threshold in the determination of significance of Project-related GHG emissions.

Specifically, the City has selected the interim 3,000 MTCO₂e per year threshold recommended by SCAQMD staff for residential and commercial sector projects against which to compare Project-related GHG emissions.

The 3,000 MTCO₂e per year threshold is based on a 90 percent emission “capture” rate methodology. Prior to its use by the SCAQMD, the 90 percent emissions capture approach was one of the options suggested by the California Air Pollution Control Officers Association (CAPCOA) in their CEQA & Climate Change white paper (2008). A 90 percent emission capture rate means that unmitigated GHG emissions from the top 90 percent of all GHG-producing projects within a geographic area – the SCAB in this instance – would be subject to a detailed analysis of potential environmental impacts from GHG emissions, while the bottom 10 percent of all GHG-producing projects would be excluded from detailed analysis. A GHG significance threshold based on a 90 percent emission capture rate is appropriate to address the long-term adverse impacts associated with global climate change because medium and large projects will be required to implement measures to reduce GHG emissions, while small projects, which are generally infill development projects that are not the focus of the State’s GHG reduction targets, are allowed to proceed. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial proportion of future development projects and demonstrate that cumulative emissions reductions are being achieved while setting the emission threshold high enough to exclude small projects that will, in aggregate, contribute approximate 1 percent of projected statewide GHG emissions in the Year 2050 (20).

In setting the threshold at 3,000 MTCO₂e per year, SCAQMD researched a database of projects kept by the Governor’s Office of Planning and Research (OPR). That database contained 798 projects, 87 of which were removed because they were very large projects and/or outliers that would skew emissions values too high, leaving 711 as the sample population to use in determining the 90th percentile capture rate. The SCAQMD analysis of the 711 projects within the sample population combined commercial, residential, and mixed-use projects. Emissions from each of these projects were calculated by SCAQMD to provide a consistent method of emissions calculations across the sample population and from projects within the sample population. In calculating the emissions, the SCAQMD analysis determined that the 90th percentile ranged between 2,983 to 3,143 MTCO₂e per year. The SCAQMD set their significance threshold at the low-end value of the range when rounded to the nearest hundred tons of emissions (i.e., 3,000 MTCO₂e per year) to define small projects that are considered less than significant and do not need to provide further analysis.

The City understands that the 3,000 MTCO₂e per year threshold for residential/commercial uses was proposed by 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 MTCO₂e per year threshold was developed and recommended by SCAQMD, an expert agency, based on substantial evidence as provided in the Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold (2008) document and subsequent Working Group meetings (latest of which occurred in 2010). 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 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 2022 (20). Lastly, this threshold has been used for hundreds, if not thousands of GHG analyses performed for projects located within the SCAQMD jurisdiction.

Thus, for purposes of analysis in this analysis, if Project-related GHG emissions do not exceed the 3,000 MTCO₂e per year threshold, then Project-related GHG emissions would clearly have a less-than-significant impact pursuant to Threshold GHG-1. On the other hand, if Project-related GHG emissions exceed 3,000 MTCO₂e per year, the Project would be considered a substantial source of GHG emissions.

GHG IMPACTS – CONSISTENCY WITH THRESHOLD NO. 1

Would the Project have the potential to generate direct or indirect GHG emissions that would result in a significant impact on the environment?

PROJECT GHG EMISSIONS

The estimated GHG emissions for the entire 100-unit Project are summarized on Table 8. The estimated GHG emission include emissions from Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), and Refrigerants (R). As shown on Table 8, the entire 100-unit Project would generate a total of approximately 1,412.64 MTCO₂e/yr.

TABLE 8: TOTAL PROJECT GHG EMISSIONS

Source	Emission (lbs/day)				Total CO ₂ E
	CO ₂	CH ₄	N ₂ O	R	
Annual construction-related emissions amortized over 30 years	55.37	2.33E-03	4.33E-03	4.13E-02	56.73
Mobile	956.00	0.04	0.04	1.19	970.00
Area	23.20	< 0.005	< 0.005	0.00	23.30
Energy	312.00	0.03	< 0.005	0.00	313.00
Water	20.70	0.12	< 0.005	0.00	24.70
Waste	7.05	0.71	0.00	0.00	24.70
Refrigerants	0.00	0.00	0.00	0.21	0.21
Total CO ₂ E (All Sources)			1,412.64		

A numerical threshold for determining the significance of GHG emissions in the SCAB has not been established by the SCAQMD for projects where it is not the lead agency. As an interim threshold based on guidance provided in the CAPCOA CEQA and Climate Change handbook, the City has opted to use a non-zero threshold approach based on Approach 2 of the handbook. Threshold 2.5 (Unit-Based Thresholds Based on Market Capture) establishes a numerical threshold based on capture of approximately 90% of emissions from future development. The latest threshold developed by SCAQMD using this method is 3,000 MTCO₂e/yr for all projects (21).

The entire 100-unit Project would result in approximately 1,412.64 MTCO₂e/yr; the proposed Project would not exceed the SCAQMD's numeric threshold of 3,000 MTCO₂e/yr. Thus, the Project would result in a less than significant impact with respect to GHG emissions, even with the additional 26 units added to the approved 74 unit subdivision.

GHG IMPACTS – CONSISTENCY WITH THRESHOLD NO. 2

Would the Project have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Pursuant to 15604.4 of the CEQA Guidelines, a lead agency may rely on qualitative analysis or performance-based standards to determine the significance of impacts from GHG emissions (22).

In November 2017, CARB released the Final 2017 Scoping Plan Update, which identifies the State's post-2020 reduction strategy. The Project would not conflict with any of the 2017 Scoping Plan elements as any regulations adopted would apply directly or indirectly to the Project. Further, recent studies show that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40% below 1990 levels by 2030 (23). The Project would not conflict with any of the 2017 Scoping Plan elements. Further, recent studies show that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40% below 1990 levels by 2030 (23).

Finally, the Project is consistent with the general plan land use designation, density, building intensity, and applicable policies specified for the Project area in SCAG's Sustainable Community Strategy/ Regional Transportation Plan, which pursuant to SB 375 calls for the integration of transportation, land-use and housing policies to plan for achievement of the GHG-emissions target for the region. Thus, a less than significant impact related to GHG emissions from Project construction and operation would occur and no mitigation is required.

PROJECT ENERGY ANALYSIS

Vehicle fuel efficiencies for light-duty-auto vehicles (LDA), light-duty-trucks (LDT1), and light-duty-trucks (LDT2) were estimated using information generated within the 2021 version of the EMFAC developed by the California Air Resources Board (CARB). EMFAC2021 is a mathematical model that was developed to calculate emission rates, fuel consumption, and VMT from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by CARB to project changes in future emissions from on-road mobile sources (9). EMFAC2021 was run for the LDA, LDT1, and LDT2 vehicle class within the California Orange South-Coast sub-area for the 2023, 2024, 2025, 2026, 2027 and 2028 calendar year. Data from EMFAC2021 is shown in Attachment C.

CONSTRUCTION ENERGY DEMANDS

CONSTRUCTION EQUIPMENT ELECTRICITY USAGE ESTIMATES

The *2022 National Construction Estimator* identifies a typical power cost per 1,000 sf of construction per month of \$2.41, which was used to calculate the entire 100-unit Project's total construction power cost (24).

Based on Table 9, the total power cost of the on-site electricity usage during the construction of the entire 100-unit Project is estimated to be approximately \$100,049.94. As shown on Table 10, the total electricity usage from on-site Project construction related activities is estimated to be approximately 759,565 kWh.

TABLE 9: PROJECT CONSTRUCTION POWER COST

Land Use	Power Cost (per 1,000 SF of building per month of construction)	Total Building Size (1,000 SF)	Construction Duration (months)	Project Construction Power Cost
Single Family Residential	\$2.41	629.008	66	\$100,049.94
TOTAL PROJECT CONSTRUCTION POWER COST				\$100,049.94

TABLE 10: PROJECT CONSTRUCTION ELECTRICITY USAGE

Land Use	Cost per kWh ¹	Project Construction Electricity Usage (kWh)
Single Family Residential	\$0.13	759,565
TOTAL PROJECT CONSTRUCTION ELECTRICITY USAGE (kWh)		759,565

¹Assumes the Project will be under the GS-1 General Service Rate under Southern California Edison

CONSTRUCTION EQUIPMENT FUEL ESTIMATES

As presented in Table 11, Project construction activities would consume an estimated 62,465 gallons of diesel fuel. Project construction would represent a “single-event” diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

CONSTRUCTION WORKER FUEL ESTIMATES

With respect to estimated VMT, the construction worker trips would generate an estimated 1,148,055 VMT. Based on CalEEMod methodology, it is assumed that 50% of all vendor trips are from LDA, 25% are from LDT1, and 25% are from LDT2. Data regarding Project related construction worker trips were based on CalEEMod defaults for the land use type and project location which are also utilized within the air quality assessment and CalEEMod outputs contained herein.

As shown on Table 12, it is estimated that 39,027 gallons of fuel will be consumed related to construction worker trips during full construction of the proposed Project. Project construction worker trips would represent a “single-event” gasoline fuel demand and would not require on-going or permanent commitment of fuel resources for this purpose.

TABLE 11: PROJECT CONSTRUCTION EQUIPMENT FUEL CONSUMPTIONS ESTIMATES

Activity/Duration	Duration (Days)	Equipment	HP Rating	Quantity	Usage Hours	Load Factor	HP-hrs/day	Total Fuel Consumption (gal. diesel fuel)
Site Preparation	33	Rubber Tired Loaders	84	1	8	0.36	242	432
		Off-Highway Trucks	175	1	8	0.38	532	949
		Rubber Tired Dozers	367	1	8	0.4	1,174	7,300
Grading	115	Excavators	36	1	8	0.38	109	680
		Rubber Tired Loaders	84	2	8	0.36	484	3,008
		Scrapers	423	3	8	0.48	4,873	30,291
Building Construction	1,306	Off-Highway Trucks	175	1	8	0.38	532	3,307
		Forklifts	82	1	1	0.2	16	1,158
		Tractors/Loaders/Backhoes	84	1	1	0.37	31	2,194
Paving	60	Graders	148	1	8	0.41	485	1,574
		Paving Equipment	89	1	8	0.36	256	831
Architectural Coating	1,306	Rollers	36	2	8	0.38	219	710
		Air Compressors	37	1	8	0.48	142	10,030
CONSTRUCTION FUEL DEMAND (GALLONS DIESEL FUEL)								62,465

TABLE 12: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES (1 OF 3)

Year	Construction Activity	Duration (Days)	Worker Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption
2023	LDA						
	Site Preparation	33	3	18.5	1,832	31.73	58
	Grading	115	10	18.5	21,275	31.73	670
	Building Construction	21	18	18.5	6,993	31.73	220
	Architectural Coating	152	4	18.5	11,248	31.73	354
	LDT1						
	Site Preparation	33	4	18.5	2,442	24.79	99
	Grading	115	10	18.5	21,275	24.79	858
	Building Construction	21	9	18.5	3,497	24.79	141
	Architectural Coating	152	2	18.5	5,624	24.79	227
	LDT2						
	Site Preparation	33	4	18.5	2,442	24.07	101
	Grading	115	10	18.5	21,275	24.07	884
	Building Construction	21	9	18.5	3,497	24.07	145
	Architectural Coating	152	2	18.5	5,624	24.07	234
	2024	LDA					
Building Construction		262	18	18.5	87,246	32.75	2,664
Paving		60	5	18.5	5,550	32.75	169
Architectural Coating		262	4	18.5	19,388	32.75	592
LDT1							
Building Construction		262	9	18.5	43,623	25.26	1,727
Paving		60	4	18.5	4,440	25.26	176
Architectural Coating		262	2	18.5	9,694	25.26	384
LDT2							
Building Construction		262	9	18.5	43,623	24.73	1,764
Paving	60	4	18.5	4,440	24.73	180	
Architectural Coating	262	2	18.5	9,694	24.73	392	

TABLE 12: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES (2 OF 3)

Year	Construction Activity	Duration (Days)	Worker Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption
2025	LDA						
	Building Construction	261	18	18.5	86,913	33.86	2,567
	Architectural Coating	261	4	18.5	19,314	33.86	570
	LDT1						
	Building Construction	261	9	18.5	43,457	25.78	1,686
	Architectural Coating	261	2	18.5	9,657	25.78	375
	LDT2						
	Building Construction	261	9	18.5	43,457	25.43	1,709
	Architectural Coating	261	2	18.5	9,657	25.43	380
	2026	LDA					
Building Construction		261	18	18.5	86,913	34.81	2,497
Architectural Coating		261	4	18.5	19,314	34.81	555
LDT1							
Building Construction		261	9	18.5	43,457	26.28	1,653
Architectural Coating		261	2	18.5	9,657	26.28	367
LDT2							
Building Construction		261	9	18.5	43,457	26.07	1,667
Architectural Coating		261	2	18.5	9,657	26.07	370
2027		LDA					
	Building Construction	261	18	18.5	86,913	35.67	2,437
	Architectural Coating	261	4	18.5	19,314	35.67	542
	LDT1						
	Building Construction	261	9	18.5	43,457	26.76	1,624
	Architectural Coating	261	2	18.5	9,657	26.76	361
	LDT2						
	Building Construction	261	9	18.5	43,457	26.65	1,631
	Architectural Coating	261	2	18.5	9,657	26.65	362

TABLE 12: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES (3 OF 3)

Year	Construction Activity	Duration (Days)	Worker Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption
2028	LDA						
	Building Construction	240	18	18.5	79,920	36.55	2,187
	Architectural Coating	109	4	18.5	8,066	36.55	221
	LDT1						
	Building Construction	240	9	18.5	39,960	27.29	1,464
	Architectural Coating	109	2	18.5	4,033	27.29	148
	LDT2						
	Building Construction	240	9	18.5	39,960	27.24	1,467
	Architectural Coating	109	2	18.5	4,033	27.24	148
	TOTAL CONSTRUCTION WORKER FUEL CONSUMPTION						

CONSTRUCTION VENDOR/HAULING FUEL ESTIMATES

With respect to estimated VMT, the construction vendor/hauling trips would generate an estimated 140,831 VMT. It is assumed that 50% of all vendor trips are from medium-heavy duty trucks (MHDT), 50% of vendor trips are from heavy-heavy duty trucks (HHDT), and, 100% of hauling trips are from HHDTs. As shown on Table 13, it is estimated that 20,500 gallons of fuel will be consumed related to construction vendor trips (medium duty trucks) during full construction of the entire 100-unit Project. Project construction vendor trips would represent a “single- event” diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

TABLE 13: CONSTRUCTION VENDOR FUEL CONSUMPTION ESTIMATES (TRUCKS)

Year	Construction Activity	Duration (Days)	Worker Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy	Estimated Fuel Consumption
2023	MHDT						
	Site Preparation	33	1	10.2	337	7.48	45
	Grading	115	1	10.2	1,173	7.48	157
	Building Construction	21	5	10.2	1,071	7.48	143
	HHDT (Vendor)						
	Site Preparation	33	1	10.2	337	5.92	57
	Grading	115	1	10.2	1,173	5.92	198
	Building Construction	21	5	10.2	1,071	5.92	181
	HHDT (Hauling)						
Grading	115	2	20	4,600	5.92	777	
2024	MHDT						
	Building Construction	262	5	10.2	13,362	7.56	1,768
	HHDT (Vendor)						
Building Construction	262	5	10.2	13,362	6.00	2,228	
2025	MHDT						
	Building Construction	261	5	10.2	13,311	7.67	1,734
	HHDT (Vendor)						
Building Construction	261	5	10.2	13,311	6.10	2,183	
2026	MHDT						
	Building Construction	261	5	10.2	13,311	7.80	1,707
	HHDT (Vendor)						
Building Construction	261	5	10.2	13,311	6.20	2,147	
2027	MHDT						
	Building Construction	261	5	10.2	13,311	7.95	1,675
	HHDT (Vendor)						
Building Construction	261	5	10.2	13,311	6.32	2,106	
2028	MHDT						
	Building Construction	240	5	10.2	12,240	8.15	1,502
	HHDT (Vendor)						
Building Construction	240	5	10.2	12,240	6.47	1,893	
TOTAL CONSTRUCTION WORKER FUEL CONSUMPTION							20,500

CONSTRUCTION ENERGY DEMANDS SUMMARY

Construction equipment use of fuel would not be atypical for the type of construction proposed because there are no aspects of the Project's proposed construction process that are unusual or energy-intensive, and Project construction equipment would conform to the applicable CARB emissions standards, acting to promote equipment fuel efficiencies.

CCR Title 13, 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. Best Available Control Measures (BACMs) inform construction equipment operators of this requirement.

With regard to construction worker trips, the 2021 IEPR released by the CEC has shown that fuel efficiencies are getting better within on and off-road vehicle engines due to more stringent government requirements. As supported by the preceding discussions, Project construction energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

OPERATIONAL ENERGY DEMANDS

TRANSPORTATION ENERGY DEMANDS

Energy that would be consumed by Project-generated traffic is a function of total VMT and estimated vehicle fuel economies of vehicles accessing the Project site. The VMT per vehicle class can be determined by the vehicle fleet mix and the total VMT. As with worker and vendors trips, operational vehicle fuel efficiencies were estimated using information generated within EMFAC2021 developed by CARB (25). As summarized on Table 14 the entire 100-unit Project will result in a 2,947,782 annual VMT and an estimated annual fuel consumption of 107,398 gallons of fuel.

OPERATIONAL ENERGY DEMANDS SUMMARY

The Project proposes conventional residential uses reflecting contemporary energy efficient/energy conserving designs and operational programs. The Project does not propose uses that are inherently energy intensive and the energy demands in total would be comparable to other residential land use projects of similar scale and configuration.

The Project will comply with the applicable Title 24 standards which will ensure that the Project energy demands would not be inefficient, wasteful, or otherwise unnecessary.

The Project would not cause or result in the need for additional energy producing or transmission facilities. The Project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservation goals within the State of California. As supported by the preceding analyses, Project operations would not result in the inefficient, wasteful, or unnecessary consumption of energy.

TABLE 14: PROJECT-GENERATED VEHICLE TRAFFIC ANNUAL FUEL CONSUMPTION

Vehicle Type	Average Vehicle Fuel Economy (mpg)	Annual VMT	Estimated Annual Fuel Consumption (gallons)
LDA	36.55	1,451,447	39,714
LDT1	27.29	115,926	4,248
LDT2	27.24	701,536	25,755
MDV	22.38	428,969	19,166
LHDT1	17.85	82,760	4,636
LHDT2	16.68	21,920	1,314
MHDT	8.15	46,023	5,647
HHDT	6.47	17,306	2,676
OBUS	6.68	1,762	264
UBUS	3.80	1,044	275
MCY	42.60	65,895	1,547
SBUS	6.70	2,845	424
MH	5.98	10,350	1,731
TOTAL (ALL VEHICLES)		2,947,782	107,398

PROJECT ENERGY DEMANDS

As shown on Table 15, the entire 100-unit Project operational energy demands are estimated to result in a 3,833,535 kBTU/year of natural gas; and 689,515 kWh/year of electricity. Natural gas would be supplied to the Project by Southern California Gas; electricity would be supplied by Southern California Edison.

TABLE 15: PROJECT ANNUAL OPERATIONAL ENERGY DEMAND SUMMARY

Land Use	Natural Gas Demand (kBTU/year)	Electricity Demand (kWh/year)
Single Family Residential	3,833,535	689,515
TOTAL PROJECT ENERGY DEMAND	3,833,535	689,515

AIR QUALITY, GREENHOUSE GAS, ENERGY CONCLUSION

Results of the assessment indicate that the entire 100-unit Project is not anticipated to result in a significant impact during construction or operational activities associated with air quality, greenhouse gas and energy and no mitigation is required.

COMPARISON TO PREVIOUSLY APPROVED PROJECT

As mentioned previously, Tract #15700 was approved for the Project site by the City of Placentia, and it remains the approved land use entitlement for the property. It authorized 74 single family residences for the property. The current Project (Vesting TTM 19250) adds 26 additional residential units, for a total of 100 lots (including the 74 units that previously were approved on the property for which a final subdivision map was recorded for 62 of the lots). As shown in the analysis herein, the Project evaluated as 100 single family residences, does not result in any significant impact nor require any mitigation. As such, the impacts from the Project for air quality, greenhouse gas, and energy would be no different and not substantially more than what would occur under the approved use.

REFERENCES

1. **Air Resources Board.** California Ambient Air Quality Standards (CAAQS). [Online] 2009. [Cited: April 16, 2018.] <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>.
2. **Environmental Protection Agency.** National Ambient Air Quality Standards (NAAQS). [Online] 1990. <https://www.epa.gov/environmental-topics/air-topics>.
3. **South Coast Air Quality Management District.** RULE 403. FUGITIVE DUST. [Online] <https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4>.
4. —. RULE 445. Wood-Burning Devices. [Online] <http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-445.pdf>.
5. —. RULE 1113. Architectural Coatings. [Online] <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf>.
6. **California Air Pollution Control Officers Association (CAPCOA).** California Emissions Estimator Model (CalEEMod). [Online] May 2022. www.caleemod.com.
7. **State of California.** 2020 CEQA California Environmental Quality Act. 2020.
8. **South Coast Air Quality Management District (SCAQMD).** SCAQMD Air Quality Significance Thresholds. [Online] <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>.
9. **California Air Pollution Control Officers Association (CAPCOA).** Appendix A: Calculation Details for CalEEMod. *CalEEMod*. [Online] http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6.
10. **Urban Crossroads, Inc.** *Placentia Alta Vista Traffic Analysis*. 2022.
11. **South Coast Air Quality Management District.** *Localized Significance Thresholds Methodology*. s.l. : South Coast Air Quality Management District, 2003.
12. **County of Redlands.** County of Redlands General Plan 2035. [Online] 2017. <https://gis.cityofredlands.org/generalplan/gp2035.pdf>.
13. **Goss, Tracy A and Kroeger, Amy.** White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. [Online] South Coast Air Quality Management District, 2003. http://www.aqmd.gov/rules/ciwig/final_white_paper.pdf.
14. **South Coast Air Quality Management District.** RULE 402 NUISANCE. [Online] <http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf>.
15. **California Air Resources Board.** GHG 1990 Emissions Level & 2020 Limit. *California Air Resources Board*. [Online] <https://ww2.arb.ca.gov/ghg-2020-limit>.
16. —. *Climate Change Draft Scoping Plan*. 2008.
17. —. STATUS OF SCOPING PLAN RECOMMENDED MEASURES. [Online] [Cited: September 19, 2019.] https://ww3.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf.
18. —. *First Update to the Climate Change Scoping Plan*. 2014.

19. **California Legislative Information.** Senate Bill No. 32. [Online] September 8, 2016. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.
20. **South Coast Air Quality Management District.** *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans.* Diamond Bar : s.n., 2008.
21. —. Interim CEQA GHG Threshold for Stationary Sources, Rules and Plans. [Online] December 5, 2008. [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgboardsynopsis.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf).
22. **Association of Environmental Professionals.** *2018 CEQA California Environmental Quality Act.* 2018.
23. **Lawrence Berkeley National Laboratory.** California's Policies Can Significantly Cut Greenhouse Gas Emissions through 2030. *Lawrence Berkeley National Laboratory.* [Online] January 22, 2015. <http://newscenter.lbl.gov/2015/01/22/californias-policies-can-significantly-cut-greenhouse-gas-emissions-2030/>.
24. **Pray, Richard.** *2022 National Construction Estimator.* Carlsbad : Craftsman Book Company, 2022.
25. **California Department of Transportation.** EMFAC Software. [Online] <http://www.dot.ca.gov/hq/env/air/pages/emfac.htm>.

ATTACHMENT A
CALEEMOD PROPOSED PROJECT EMISSIONS MODEL OUTPUTS

14919-Alta Vista 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. Site Preparation (2023) - Unmitigated
 - 3.3. Grading (2023) - Unmitigated
 - 3.5. Building Construction (2023) - Unmitigated
 - 3.7. Building Construction (2024) - Unmitigated

3.9. Building Construction (2025) - Unmitigated

3.11. Building Construction (2026) - Unmitigated

3.13. Building Construction (2027) - Unmitigated

3.15. Building Construction (2028) - Unmitigated

3.17. Paving (2024) - Unmitigated

3.19. Architectural Coating (2023) - Unmitigated

3.21. Architectural Coating (2024) - Unmitigated

3.23. Architectural Coating (2025) - Unmitigated

3.25. Architectural Coating (2026) - Unmitigated

3.27. Architectural Coating (2027) - Unmitigated

3.29. Architectural Coating (2028) - 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

4.3.2. Unmitigated

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

4.5. Waste Emissions by Land Use

4.5.2. 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	14919-Alta Vista
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	21.2
Location	Placentia, CA 92870, USA
County	Orange
City	Placentia
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5766
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	100	Dwelling Unit	14.4	195,000	1,171,286	—	298	—

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.40	6.51	61.5	49.3	0.15	2.25	4.49	6.74	2.08	1.51	3.60	—	19,802	19,802	1.22	1.59	23.5	20,331
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.19	6.32	59.7	49.4	0.15	2.08	5.02	7.10	1.92	1.64	3.56	—	20,351	20,351	1.26	1.70	0.75	20,890
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.25	2.08	19.0	15.0	0.05	0.67	1.44	2.11	0.62	0.48	1.10	—	6,133	6,133	0.38	0.51	3.34	6,297
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.41	0.38	3.46	2.74	0.01	0.12	0.26	0.39	0.11	0.09	0.20	—	1,015	1,015	0.06	0.08	0.55	1,043

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

2023	7.40	6.51	61.5	49.3	0.15	2.25	4.49	6.74	2.08	1.51	3.60	—	19,802	19,802	1.22	1.59	23.5	20,331
2024	1.47	2.16	8.60	12.9	0.02	0.40	0.78	1.18	0.37	0.19	0.55	—	2,414	2,414	0.08	0.08	3.80	2,444
2025	0.43	1.29	1.87	4.46	< 0.005	0.05	0.65	0.70	0.05	0.16	0.20	—	1,113	1,113	0.03	0.06	3.01	1,136
2026	0.39	1.27	1.79	4.31	< 0.005	0.04	0.65	0.69	0.04	0.16	0.19	—	1,097	1,097	0.03	0.06	2.73	1,120
2027	0.37	1.24	1.73	4.15	< 0.005	0.03	0.65	0.68	0.03	0.16	0.19	—	1,082	1,082	0.03	0.06	2.46	1,104
2028	0.36	1.22	1.66	4.02	< 0.005	0.03	0.65	0.68	0.03	0.16	0.18	—	1,065	1,065	0.03	0.05	2.20	1,082
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	7.19	6.32	59.7	49.4	0.15	2.08	5.02	7.10	1.92	1.64	3.56	—	20,351	20,351	1.26	1.70	0.75	20,890
2024	1.46	2.16	8.64	12.4	0.02	0.40	0.78	1.18	0.37	0.19	0.55	—	2,380	2,380	0.08	0.08	0.10	2,406
2025	0.43	1.29	1.91	4.14	< 0.005	0.05	0.65	0.70	0.05	0.16	0.20	—	1,085	1,085	0.03	0.06	0.08	1,106
2026	0.39	1.27	1.83	4.00	< 0.005	0.04	0.65	0.69	0.04	0.16	0.19	—	1,070	1,070	0.03	0.06	0.07	1,090
2027	0.37	1.23	1.75	3.86	< 0.005	0.03	0.65	0.68	0.03	0.16	0.19	—	1,055	1,055	0.03	0.06	0.06	1,075
2028	0.36	1.22	1.70	3.74	< 0.005	0.03	0.65	0.68	0.03	0.16	0.18	—	1,039	1,039	0.03	0.06	0.06	1,059
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	2.25	2.08	19.0	15.0	0.05	0.67	1.44	2.11	0.62	0.48	1.10	—	6,133	6,133	0.38	0.51	3.34	6,297
2024	0.49	1.08	2.52	4.51	0.01	0.10	0.48	0.58	0.09	0.11	0.20	—	1,005	1,005	0.03	0.05	1.04	1,021
2025	0.31	0.92	1.36	3.03	< 0.005	0.03	0.46	0.49	0.03	0.11	0.14	—	781	781	0.02	0.05	0.93	796
2026	0.28	0.91	1.31	2.91	< 0.005	0.03	0.46	0.49	0.03	0.11	0.14	—	769	769	0.02	0.05	0.84	785
2027	0.27	0.88	1.26	2.81	< 0.005	0.02	0.46	0.48	0.02	0.11	0.13	—	759	759	0.02	0.04	0.76	774
2028	0.16	0.41	0.72	1.86	< 0.005	0.01	0.39	0.40	0.01	0.09	0.10	—	593	593	0.02	0.04	0.59	606
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.41	0.38	3.46	2.74	0.01	0.12	0.26	0.39	0.11	0.09	0.20	—	1,015	1,015	0.06	0.08	0.55	1,043
2024	0.09	0.20	0.46	0.82	< 0.005	0.02	0.09	0.11	0.02	0.02	0.04	—	166	166	0.01	0.01	0.17	169
2025	0.06	0.17	0.25	0.55	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	129	129	< 0.005	0.01	0.15	132
2026	0.05	0.17	0.24	0.53	< 0.005	0.01	0.08	0.09	< 0.005	0.02	0.02	—	127	127	< 0.005	0.01	0.14	130
2027	0.05	0.16	0.23	0.51	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.02	—	126	126	< 0.005	0.01	0.13	128

2028	0.03	0.08	0.13	0.34	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	98.2	98.2	< 0.005	0.01	0.10	100
------	------	------	------	------	---------	---------	------	------	---------	------	------	---	------	------	---------	------	------	-----

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.83	7.91	4.38	28.9	0.08	0.23	2.28	2.51	0.23	0.40	0.64	49.8	9,962	10,011	5.48	0.26	18.3	10,245
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.26	7.37	4.48	21.7	0.07	0.23	2.28	2.51	0.23	0.40	0.63	49.8	9,715	9,765	5.49	0.27	1.69	9,985
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.40	7.57	3.11	25.1	0.06	0.12	2.24	2.36	0.12	0.40	0.52	49.8	7,916	7,966	5.45	0.27	8.47	8,190
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.62	1.38	0.57	4.58	0.01	0.02	0.41	0.43	0.02	0.07	0.09	8.24	1,311	1,319	0.90	0.04	1.40	1,356

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.99	2.74	1.86	22.2	0.06	0.03	2.28	2.31	0.03	0.40	0.44	—	6,051	6,051	0.26	0.23	17.0	6,143
Area	0.72	5.11	1.55	6.29	0.01	0.12	—	0.12	0.12	—	0.12	0.00	1,910	1,910	0.04	< 0.005	—	1,913
Energy	0.11	0.06	0.97	0.41	0.01	0.08	—	0.08	0.08	—	0.08	—	1,883	1,883	0.17	0.01	—	1,890

Water	—	—	—	—	—	—	—	—	—	—	—	7.19	118	125	0.75	0.02	—	149
Waste	—	—	—	—	—	—	—	—	—	—	—	42.6	0.00	42.6	4.26	0.00	—	149
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.25	1.25
Total	3.83	7.91	4.38	28.9	0.08	0.23	2.28	2.51	0.23	0.40	0.64	49.8	9,962	10,011	5.48	0.26	18.3	10,245
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.97	2.71	2.02	20.7	0.06	0.03	2.28	2.31	0.03	0.40	0.44	—	5,820	5,820	0.27	0.24	0.44	5,899
Area	0.17	4.59	1.49	0.64	0.01	0.12	—	0.12	0.12	—	0.12	0.00	1,895	1,895	0.04	< 0.005	—	1,897
Energy	0.11	0.06	0.97	0.41	0.01	0.08	—	0.08	0.08	—	0.08	—	1,883	1,883	0.17	0.01	—	1,890
Water	—	—	—	—	—	—	—	—	—	—	—	7.19	118	125	0.75	0.02	—	149
Waste	—	—	—	—	—	—	—	—	—	—	—	42.6	0.00	42.6	4.26	0.00	—	149
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.25	1.25
Total	3.26	7.37	4.48	21.7	0.07	0.23	2.28	2.51	0.23	0.40	0.63	49.8	9,715	9,765	5.49	0.27	1.69	9,985
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.90	2.65	2.00	20.8	0.06	0.03	2.24	2.27	0.03	0.40	0.43	—	5,776	5,776	0.27	0.24	7.22	5,860
Area	0.39	4.87	0.14	3.91	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	140	140	< 0.005	< 0.005	—	141
Energy	0.11	0.06	0.97	0.41	0.01	0.08	—	0.08	0.08	—	0.08	—	1,883	1,883	0.17	0.01	—	1,890
Water	—	—	—	—	—	—	—	—	—	—	—	7.19	118	125	0.75	0.02	—	149
Waste	—	—	—	—	—	—	—	—	—	—	—	42.6	0.00	42.6	4.26	0.00	—	149
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.25	1.25
Total	3.40	7.57	3.11	25.1	0.06	0.12	2.24	2.36	0.12	0.40	0.52	49.8	7,916	7,966	5.45	0.27	8.47	8,190
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.53	0.48	0.37	3.79	0.01	0.01	0.41	0.41	0.01	0.07	0.08	—	956	956	0.04	0.04	1.19	970
Area	0.07	0.89	0.03	0.71	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	23.2	23.2	< 0.005	< 0.005	—	23.3
Energy	0.02	0.01	0.18	0.08	< 0.005	0.01	—	0.01	0.01	—	0.01	—	312	312	0.03	< 0.005	—	313
Water	—	—	—	—	—	—	—	—	—	—	—	1.19	19.5	20.7	0.12	< 0.005	—	24.7
Waste	—	—	—	—	—	—	—	—	—	—	—	7.05	0.00	7.05	0.71	0.00	—	24.7

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.21	0.21
Total	0.62	1.38	0.57	4.58	0.01	0.02	0.41	0.43	0.02	0.07	0.09	8.24	1,311	1,319	0.90	0.04	1.40	1,356

3. Construction Emissions Details

3.1. Site Preparation (2023) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.55	0.46	3.58	3.56	0.01	0.20	—	0.20	0.18	—	0.18	—	896	896	0.04	0.01	—	899
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.32	0.32	< 0.005	0.02	—	0.02	0.02	—	0.02	—	81.0	81.0	< 0.005	< 0.005	—	81.3
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.65	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	138	138	0.01	< 0.005	0.61	141
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.7	15.7	< 0.005	< 0.005	0.04	16.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	12.1	12.1	< 0.005	< 0.005	0.02	12.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.48
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.00	2.00	< 0.005	< 0.005	< 0.005	2.02
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2023) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.33	4.48	44.4	34.8	0.08	1.89	—	1.89	1.74	—	1.74	—	8,378	8,378	0.34	0.07	—	8,407
Dust From Material Movement:	—	—	—	—	—	—	2.54	2.54	—	0.97	0.97	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.33	4.48	44.4	34.8	0.08	1.89	—	1.89	1.74	—	1.74	—	8,378	8,378	0.34	0.07	—	8,407
Dust From Material Movement:	—	—	—	—	—	—	2.54	2.54	—	0.97	0.97	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.68	1.41	14.0	11.0	0.02	0.60	—	0.60	0.55	—	0.55	—	2,640	2,640	0.11	0.02	—	2,649
Dust From Material Movement:	—	—	—	—	—	—	0.80	0.80	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.31	0.26	2.55	2.00	< 0.005	0.11	—	0.11	0.10	—	0.10	—	437	437	0.02	< 0.005	—	439
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.16	2.60	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	553	553	0.02	0.02	2.45	562
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	55.7	55.7	< 0.005	0.01	0.15	58.2
Hauling	1.00	0.19	11.9	5.18	0.06	0.12	0.63	0.75	0.12	0.23	0.35	—	9,389	9,389	0.80	1.48	19.4	9,868
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.19	2.25	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	526	526	0.02	0.02	0.06	533
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	55.8	55.8	< 0.005	0.01	< 0.005	58.1
Hauling	0.99	0.18	12.4	5.22	0.06	0.12	0.63	0.75	0.12	0.23	0.35	—	9,391	9,391	0.80	1.48	0.50	9,851
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.06	0.74	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	168	168	0.01	0.01	0.33	170
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.6	17.6	< 0.005	< 0.005	0.02	18.3
Hauling	0.31	0.06	3.94	1.64	0.02	0.04	0.20	0.24	0.04	0.07	0.11	—	2,958	2,958	0.25	0.46	2.64	3,106
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	27.8	27.8	< 0.005	< 0.005	0.06	28.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.91	2.91	< 0.005	< 0.005	< 0.005	3.03
Hauling	0.06	0.01	0.72	0.30	< 0.005	0.01	0.04	0.04	0.01	0.01	0.02	—	490	490	0.04	0.08	0.44	514

3.5. Building Construction (2023) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.27	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.4	55.4	< 0.005	< 0.005	—	55.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.36	3.36	< 0.005	< 0.005	—	3.37
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.56	0.56	< 0.005	< 0.005	—	0.56
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.31	0.28	0.35	4.04	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	947	947	0.04	0.04	0.11	959
Vendor	0.05	0.02	0.72	0.35	< 0.005	0.01	0.03	0.04	< 0.005	0.01	0.02	—	630	630	0.03	0.09	0.04	656
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	58.2	58.2	< 0.005	< 0.005	0.12	59.1
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	38.2	38.2	< 0.005	0.01	0.04	39.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	9.64	9.64	< 0.005	< 0.005	0.02	9.78
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.32	6.32	< 0.005	< 0.005	0.01	6.59
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.25	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.4	55.4	< 0.005	< 0.005	—	55.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.25	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.4	55.4	< 0.005	< 0.005	—	55.6

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.7	39.7	< 0.005	< 0.005	—	39.8	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.57	6.57	< 0.005	< 0.005	—	6.59	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.15	0.13	0.14	2.16	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	488	488	0.01	0.02	2.00	495	
Vendor	0.03	0.01	0.33	0.17	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	311	311	0.02	0.04	0.84	325	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.15	0.13	0.16	1.87	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	464	464	0.01	0.02	0.05	470	
Vendor	0.03	0.01	0.34	0.17	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	311	311	0.02	0.04	0.02	324	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.11	0.09	0.11	1.40	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	337	337	0.01	0.01	0.62	342	
Vendor	0.02	0.01	0.25	0.12	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	223	223	0.01	0.03	0.26	232	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

Worker	0.02	0.02	0.02	0.26	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	55.8	55.8	< 0.005	< 0.005	0.10	56.6
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	36.9	36.9	< 0.005	0.01	0.04	38.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.23	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.4	55.4	< 0.005	< 0.005	—	55.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.23	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.4	55.4	< 0.005	< 0.005	—	55.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.5	39.5	< 0.005	< 0.005	—	39.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.55	6.55	< 0.005	< 0.005	—	6.57

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.13	2.02	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	478	478	0.01	0.02	1.81	485	
Vendor	0.02	0.01	0.32	0.16	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	306	306	0.02	0.04	0.83	320	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.14	0.13	0.14	1.74	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	455	455	0.01	0.02	0.05	460	
Vendor	0.02	0.01	0.33	0.16	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	306	306	0.02	0.04	0.02	319	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.10	0.09	0.10	1.30	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	329	329	< 0.005	0.01	0.56	334	
Vendor	0.02	0.01	0.24	0.11	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	219	219	0.01	0.03	0.26	228	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.02	0.02	0.02	0.24	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	54.5	54.5	< 0.005	< 0.005	0.09	55.2	
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	36.2	36.2	< 0.005	0.01	0.04	37.8	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

3.11. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.4	55.4	< 0.005	< 0.005	—	55.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.4	55.4	< 0.005	< 0.005	—	55.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.5	39.5	< 0.005	< 0.005	—	39.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.55	6.55	< 0.005	< 0.005	—	6.57
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.12	0.11	1.90	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	469	469	0.01	0.02	1.63	476
Vendor	0.02	0.01	0.31	0.15	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	301	301	0.02	0.04	0.78	315
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.12	0.13	1.64	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	446	446	0.01	0.02	0.04	451
Vendor	0.02	0.01	0.32	0.16	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	301	301	0.02	0.04	0.02	314
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.09	1.22	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	323	323	< 0.005	0.01	0.50	327
Vendor	0.02	< 0.005	0.23	0.11	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	215	215	0.01	0.03	0.24	225
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	53.5	53.5	< 0.005	< 0.005	0.08	54.2
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	35.6	35.6	< 0.005	0.01	0.04	37.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.20	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.3	55.3	< 0.005	< 0.005	—	55.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	0.20	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.3	55.3	< 0.005	< 0.005	—	55.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.14	0.26	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	39.5	39.5	< 0.005	< 0.005	—	39.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.55	6.55	< 0.005	< 0.005	—	6.57
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.11	1.78	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	461	461	< 0.005	0.02	1.46	468
Vendor	0.02	0.01	0.29	0.15	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	296	296	0.02	0.04	0.71	309
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.11	1.53	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	439	439	0.01	0.02	0.04	444
Vendor	0.02	0.01	0.31	0.15	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	296	296	0.01	0.04	0.02	308
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.07	0.09	1.14	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	318	318	< 0.005	0.01	0.45	322
Vendor	0.02	< 0.005	0.22	0.11	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	211	211	0.01	0.03	0.22	220

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.21	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	52.6	52.6	< 0.005	< 0.005	0.07	53.3	
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	35.0	35.0	< 0.005	< 0.005	0.04	36.5	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

3.15. Building Construction (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.19	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.3	55.3	< 0.005	< 0.005	—	55.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.19	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.3	55.3	< 0.005	< 0.005	—	55.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	36.4	36.4	< 0.005	< 0.005	—	36.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.02	6.02	< 0.005	< 0.005	—	6.05
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.09	1.68	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	453	453	< 0.005	< 0.005	1.31	455
Vendor	0.02	0.01	0.28	0.14	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	289	289	0.01	0.04	0.64	302
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.11	1.44	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	431	431	0.01	0.02	0.03	436
Vendor	0.02	0.01	0.30	0.14	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	289	289	0.01	0.04	0.02	301
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	0.99	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	287	287	< 0.005	0.01	0.37	291
Vendor	0.01	< 0.005	0.19	0.09	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	190	190	0.01	0.03	0.18	198
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.18	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	47.5	47.5	< 0.005	< 0.005	0.06	48.2
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	31.4	31.4	< 0.005	< 0.005	0.03	32.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Paving (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.97	0.81	6.60	7.62	0.01	0.34	—	0.34	0.31	—	0.31	—	1,149	1,149	0.05	0.01	—	1,153
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.97	0.81	6.60	7.62	0.01	0.34	—	0.34	0.31	—	0.31	—	1,149	1,149	0.05	0.01	—	1,153
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.09	1.25	< 0.005	0.06	—	0.06	0.05	—	0.05	—	189	189	0.01	< 0.005	—	190
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.3	31.3	< 0.005	< 0.005	—	31.4
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.60	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	136	136	< 0.005	< 0.005	0.56	138
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.52	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	129	129	< 0.005	< 0.005	0.01	130
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	21.5	21.5	< 0.005	< 0.005	0.04	21.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	3.56	3.56	< 0.005	< 0.005	0.01	3.61
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Architectural Coating (2023) - Unmitigated

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

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

Off-Road Equipment	0.24	0.20	1.25	1.54	< 0.005	0.05	—	0.05	0.05	—	0.05	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.25	1.54	< 0.005	0.05	—	0.05	0.05	—	0.05	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.52	0.64	< 0.005	0.02	—	0.02	0.02	—	0.02	—	74.6	74.6	< 0.005	< 0.005	—	74.8
Architectural Coatings	—	0.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.3	12.3	< 0.005	< 0.005	—	12.4
Architectural Coatings	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.06	0.94	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	199	199	0.01	0.01	0.88	202
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.07	0.81	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	189	189	0.01	0.01	0.02	192
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.35	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	80.4	80.4	< 0.005	< 0.005	0.16	81.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.06	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	13.3	13.3	< 0.005	< 0.005	0.03	13.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Architectural Coating (2024) - Unmitigated

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

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

Off-Road Equipment	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	0.87	1.09	< 0.005	0.03	—	0.03	0.03	—	0.03	—	128	128	0.01	< 0.005	—	128
Architectural Coatings	—	0.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.16	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	21.1	21.1	< 0.005	< 0.005	—	21.2
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.43	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	97.6	97.6	< 0.005	< 0.005	0.40	99.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	92.8	92.8	< 0.005	< 0.005	0.01	94.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	67.4	67.4	< 0.005	< 0.005	0.12	68.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	11.2	11.2	< 0.005	< 0.005	0.02	11.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.23. Architectural Coating (2025) - Unmitigated

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

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

Off-Road Equipment	0.21	0.17	1.18	1.52	< 0.005	0.04	—	0.04	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.18	1.52	< 0.005	0.04	—	0.04	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.84	1.09	< 0.005	0.03	—	0.03	0.02	—	0.02	—	127	127	0.01	< 0.005	—	128
Architectural Coatings	—	0.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.15	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.1	21.1	< 0.005	< 0.005	—	21.1
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.40	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	95.6	95.6	< 0.005	< 0.005	0.36	97.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.35	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	91.0	91.0	< 0.005	< 0.005	0.01	92.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	65.9	65.9	< 0.005	< 0.005	0.11	66.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	10.9	10.9	< 0.005	< 0.005	0.02	11.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.25. Architectural Coating (2026) - Unmitigated

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

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

Off-Road Equipment	0.19	0.16	1.14	1.51	< 0.005	0.03	—	0.03	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.14	1.51	< 0.005	0.03	—	0.03	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.82	1.08	< 0.005	0.02	—	0.02	0.02	—	0.02	—	127	127	0.01	< 0.005	—	128
Architectural Coatings	—	0.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.15	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.1	21.1	< 0.005	< 0.005	—	21.1
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.38	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	93.8	93.8	< 0.005	< 0.005	0.33	95.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	89.2	89.2	< 0.005	< 0.005	0.01	90.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	64.6	64.6	< 0.005	< 0.005	0.10	65.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	10.7	10.7	< 0.005	< 0.005	0.02	10.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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

Off-Road Equipment	0.18	0.15	1.11	1.50	< 0.005	0.03	—	0.03	0.02	—	0.02	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.11	1.50	< 0.005	0.03	—	0.03	0.02	—	0.02	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.79	1.07	< 0.005	0.02	—	0.02	0.02	—	0.02	—	127	127	0.01	< 0.005	—	128
Architectural Coatings	—	0.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.1	21.1	< 0.005	< 0.005	—	21.1
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.36	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	92.2	92.2	< 0.005	< 0.005	0.29	93.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.31	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	87.7	87.7	< 0.005	< 0.005	0.01	88.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.23	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	63.5	63.5	< 0.005	< 0.005	0.09	64.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	10.5	10.5	< 0.005	< 0.005	0.01	10.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.29. Architectural Coating (2028) - Unmitigated

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

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

Off-Road Equipment	0.17	0.14	1.08	1.49	< 0.005	0.02	—	0.02	0.02	—	0.02	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.08	1.49	< 0.005	0.02	—	0.02	0.02	—	0.02	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	0.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.32	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	53.3	53.3	< 0.005	< 0.005	—	53.5
Architectural Coatings	—	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.82	8.82	< 0.005	< 0.005	—	8.86
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.34	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	90.5	90.5	< 0.005	< 0.005	0.26	91.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.29	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	86.2	86.2	< 0.005	< 0.005	0.01	87.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	26.2	26.2	< 0.005	< 0.005	0.03	26.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	4.33	4.33	< 0.005	< 0.005	0.01	4.39
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.99	2.74	1.86	22.2	0.06	0.03	0.37	0.41	0.03	0.12	0.15	—	6,051	6,051	0.26	0.23	17.0	6,143
Total	2.99	2.74	1.86	22.2	0.06	0.03	0.37	0.41	0.03	0.12	0.15	—	6,051	6,051	0.26	0.23	17.0	6,143
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.97	2.71	2.02	20.7	0.06	0.03	0.37	0.41	0.03	0.12	0.15	—	5,820	5,820	0.27	0.24	0.44	5,899
Total	2.97	2.71	2.02	20.7	0.06	0.03	0.37	0.41	0.03	0.12	0.15	—	5,820	5,820	0.27	0.24	0.44	5,899
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.53	0.48	0.37	3.79	0.01	0.01	0.07	0.07	0.01	0.02	0.03	—	956	956	0.04	0.04	1.19	970
Total	0.53	0.48	0.37	3.79	0.01	0.01	0.07	0.07	0.01	0.02	0.03	—	956	956	0.04	0.04	1.19	970

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	654	654	0.06	0.01	—	658
Total	—	—	—	—	—	—	—	—	—	—	—	—	654	654	0.06	0.01	—	658

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	654	654	0.06	0.01	—	658
Total	—	—	—	—	—	—	—	—	—	—	—	—	654	654	0.06	0.01	—	658
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	108	108	0.01	< 0.005	—	109
Total	—	—	—	—	—	—	—	—	—	—	—	—	108	108	0.01	< 0.005	—	109

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.11	0.06	0.97	0.41	0.01	0.08	—	0.08	0.08	—	0.08	—	1,229	1,229	0.11	< 0.005	—	1,232
Total	0.11	0.06	0.97	0.41	0.01	0.08	—	0.08	0.08	—	0.08	—	1,229	1,229	0.11	< 0.005	—	1,232
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.11	0.06	0.97	0.41	0.01	0.08	—	0.08	0.08	—	0.08	—	1,229	1,229	0.11	< 0.005	—	1,232
Total	0.11	0.06	0.97	0.41	0.01	0.08	—	0.08	0.08	—	0.08	—	1,229	1,229	0.11	< 0.005	—	1,232
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.02	0.01	0.18	0.08	< 0.005	0.01	—	0.01	0.01	—	0.01	—	203	203	0.02	< 0.005	—	204
Total	0.02	0.01	0.18	0.08	< 0.005	0.01	—	0.01	0.01	—	0.01	—	203	203	0.02	< 0.005	—	204

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.17	0.09	1.49	0.64	0.01	0.12	—	0.12	0.12	—	0.12	0.00	1,895	1,895	0.04	< 0.005	—	1,897
Consumer Products	—	4.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.55	0.52	0.06	5.65	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.2	15.2	< 0.005	< 0.005	—	15.6
Total	0.72	5.11	1.55	6.29	0.01	0.12	—	0.12	0.12	—	0.12	0.00	1,910	1,910	0.04	< 0.005	—	1,913
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.17	0.09	1.49	0.64	0.01	0.12	—	0.12	0.12	—	0.12	0.00	1,895	1,895	0.04	< 0.005	—	1,897
Consumer Products	—	4.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.17	4.59	1.49	0.64	0.01	0.12	—	0.12	0.12	—	0.12	0.00	1,895	1,895	0.04	< 0.005	—	1,897
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	21.5	21.5	< 0.005	< 0.005	—	21.5
Consumer Products	—	0.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.07	0.06	0.01	0.71	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.72	1.72	< 0.005	< 0.005	—	1.77
Total	0.07	0.89	0.03	0.71	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	23.2	23.2	< 0.005	< 0.005	—	23.3

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.19	118	125	0.75	0.02	—	149
Total	—	—	—	—	—	—	—	—	—	—	—	7.19	118	125	0.75	0.02	—	149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.19	118	125	0.75	0.02	—	149
Total	—	—	—	—	—	—	—	—	—	—	—	7.19	118	125	0.75	0.02	—	149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.19	19.5	20.7	0.12	< 0.005	—	24.7
Total	—	—	—	—	—	—	—	—	—	—	—	1.19	19.5	20.7	0.12	< 0.005	—	24.7

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	42.6	0.00	42.6	4.26	0.00	—	149
Total	—	—	—	—	—	—	—	—	—	—	—	42.6	0.00	42.6	4.26	0.00	—	149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	42.6	0.00	42.6	4.26	0.00	—	149
Total	—	—	—	—	—	—	—	—	—	—	—	42.6	0.00	42.6	4.26	0.00	—	149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.05	0.00	7.05	0.71	0.00	—	24.7
Total	—	—	—	—	—	—	—	—	—	—	—	7.05	0.00	7.05	0.71	0.00	—	24.7

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.25	1.25
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.25	1.25
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.25	1.25
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.25	1.25
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.21	0.21
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.21	0.21

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	6/1/2023	7/17/2023	5.00	33.0	—
Grading	Grading	7/1/2023	12/8/2023	5.00	115	—
Building Construction	Building Construction	12/1/2023	12/1/2028	5.00	1,306	—
Paving	Paving	8/26/2024	11/15/2024	5.00	60.0	—
Architectural Coating	Architectural Coating	6/1/2023	6/1/2028	5.00	1,306	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Loaders	Diesel	Average	1.00	8.00	84.0	0.36
Site Preparation	Off-Highway Trucks	Diesel	Average	1.00	8.00	175	0.38
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Rubber Tired Loaders	Diesel	Average	2.00	8.00	84.0	0.36
Grading	Scrapers	Diesel	Average	3.00	8.00	423	0.48
Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	175	0.38
Building Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	1.00	84.0	0.37
Paving	Graders	Diesel	Average	1.00	8.00	148	0.41
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38

Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
-----------------------	-----------------	--------	---------	------	------	------	------

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	0.24	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	0.85	10.2	HHDT,MHDT
Grading	Hauling	65.2	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	36.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	9.60	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	10.0	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	7.20	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	394,875	131,625	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	0.00	0.00	—
Grading	—	60,000	403	0.00	—
Paving	0.00	0.00	0.00	0.00	1.10

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.10	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	349	0.03	< 0.005
2024	0.00	349	0.03	< 0.005
2025	0.00	349	0.03	< 0.005
2026	0.00	346	0.03	< 0.005
2027	0.00	346	0.03	< 0.005
2028	0.00	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	944	948	848	339,763	8,190	8,225	7,357	2,947,782

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	90
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	10

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)
394875	131,625	0.00	0.00	—

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	689,515	346	0.0330	0.0040	3,833,535

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	3,752,565	18,553,703

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	26.5	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	User Defined	750	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

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

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

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

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

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

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

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

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

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	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	N/A	N/A	N/A	N/A
Air Quality	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	N/A	N/A	N/A	N/A
Air Quality	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	87.3
AQ-DPM	52.3
Drinking Water	66.3
Lead Risk Housing	12.2
Pesticides	0.00
Toxic Releases	97.7
Traffic	40.4
Effect Indicators	—
CleanUp Sites	80.4
Groundwater	32.4
Haz Waste Facilities/Generators	90.4
Impaired Water Bodies	0.00
Solid Waste	55.5
Sensitive Population	—
Asthma	34.9
Cardio-vascular	46.2
Low Birth Weights	79.4
Socioeconomic Factor Indicators	—
Education	34.8
Housing	17.4
Linguistic	68.4
Poverty	15.3
Unemployment	64.5

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	79.21211344
Employed	87.36045169
Median HI	—
Education	—
Bachelor's or higher	75.04170409
High school enrollment	4.581034262
Preschool enrollment	88.59232645
Transportation	—
Auto Access	65.16104196
Active commuting	20.63390222
Social	—
2-parent households	92.19812652
Voting	52.59848582
Neighborhood	—
Alcohol availability	97.0101373
Park access	52.22635699
Retail density	29.34684974
Supermarket access	26.81894007
Tree canopy	30.15526755
Housing	—
Homeownership	97.35660208
Housing habitability	64.1088156
Low-inc homeowner severe housing cost burden	25.38175286
Low-inc renter severe housing cost burden	18.33696907
Uncrowded housing	64.30129603
Health Outcomes	—

Insured adults	70.40934172
Arthritis	0.0
Asthma ER Admissions	74.5
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	80.5
Cognitively Disabled	93.6
Physically Disabled	85.5
Heart Attack ER Admissions	47.2
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	68.4

Elderly	42.0
English Speaking	38.8
Foreign-born	71.6
Outdoor Workers	88.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	51.0
Traffic Density	30.4
Traffic Access	23.0
Other Indices	—
Hardship	32.9
Other Decision Support	—
2016 Voting	69.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	60.0
Healthy Places Index Score for Project Location (b)	79.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Taken from Site Plan and Client Information
Construction: Construction Phases	Client Indicated Schedule
Construction: Off-Road Equipment	Client Indicated Construction Equipment List (Reviewed) Watering Trucks Modeled as "Off-Highway Trucks" Standard 8-hour work days
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Site Preparation, Grading, and Building Construction
Construction: Architectural Coatings	SCAQMD Rule 1113
Operations: Vehicle Data	Taken from Traffic Analysis
Operations: Hearths	Woodstoves - Rule 445 no wood burning devices, Wood burning devices added to gas devices
Operations: Refrigerants	Beginning 1 January 2025, all new air conditioning equipment may not use refrigerants with a GWP of 750 or greater

ATTACHMENT B
EMFAC2021

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: Orange (SC)

Calendar Year: 2023

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdYr	Speed	Fuel	Population	VMT	el_Consumption (1000 g	Fuel_Consumption (gal)	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Orange (SC)	2023	HHDT	Aggregate	Aggregate	Gasoline	8.73145324	606.548947	0.147681734	147.6817343	224709.1768	606.548947	1330192.502	5.92	HHDT
Orange (SC)	2023	HHDT	Aggregate	Aggregate	Diesel	10709.40608	1247785.033	210.5347038	210534.7038		1247785.033			
Orange (SC)	2023	HHDT	Aggregate	Aggregate	Electricity	8.085226017	483.123601	0	0		483.123601			
Orange (SC)	2023	HHDT	Aggregate	Aggregate	Natural Gas	1254.706211	81317.79699	14.02679128	14026.79128		81317.79699			
Orange (SC)	2023	LDA	Aggregate	Aggregate	Gasoline	1076181.788	42528216.69	1445.761525	1445761.525	1471762.511	42528216.69	46701259.8	31.73	LDA
Orange (SC)	2023	LDA	Aggregate	Aggregate	Diesel	3514.160863	107965.2638	2.543520315	2543.520315		107965.2638			
Orange (SC)	2023	LDA	Aggregate	Aggregate	Electricity	59474.26903	2727828.291	0	0		2727828.291			
Orange (SC)	2023	LDA	Aggregate	Aggregate	Plug-in Hybr	28501.98182	1337249.552	23.45746615	23457.46615		1337249.552			
Orange (SC)	2023	LDT1	Aggregate	Aggregate	Gasoline	99223.58776	3533281.003	142.9517238	142951.7238	143053.3158	3533281.003	3546246.185	24.79	LDT1
Orange (SC)	2023	LDT1	Aggregate	Aggregate	Diesel	34.75929356	542.0338996	0.022729025	22.72902472		542.0338996			
Orange (SC)	2023	LDT1	Aggregate	Aggregate	Electricity	191.5905712	7503.643869	0	0		7503.643869			
Orange (SC)	2023	LDT1	Aggregate	Aggregate	Plug-in Hybr	92.38650547	4919.504479	0.078862893	78.86289274		4919.504479			
Orange (SC)	2023	LDT2	Aggregate	Aggregate	Gasoline	516653.7857	20968860.09	879.7268895	879726.8895	885337.7545	20968860.09	21310742.66	24.07	LDT2
Orange (SC)	2023	LDT2	Aggregate	Aggregate	Diesel	2003.36011	85234.509	2.698305306	2698.305306		85234.509			
Orange (SC)	2023	LDT2	Aggregate	Aggregate	Electricity	2218.112632	82315.88053	0	0		82315.88053			
Orange (SC)	2023	LDT2	Aggregate	Aggregate	Plug-in Hybr	3400.552925	174332.1824	2.91255963	2912.55963		174332.1824			
Orange (SC)	2023	LHDT1	Aggregate	Aggregate	Gasoline	41394.67541	1651744.117	120.8831513	120883.1513	163947.1899	1651744.117	2535215.83	15.46	LHDT1
Orange (SC)	2023	LHDT1	Aggregate	Aggregate	Diesel	20789.38864	883471.7136	43.06403864	43064.03864		883471.7136			
Orange (SC)	2023	LHDT2	Aggregate	Aggregate	Gasoline	6757.483486	254111.7405	21.16016017	21160.16017	42696.9695	254111.7405	625248.0383	14.64	LHDT2
Orange (SC)	2023	LHDT2	Aggregate	Aggregate	Diesel	8706.571129	371136.2979	21.53680933	21536.80933		371136.2979			
Orange (SC)	2023	MCY	Aggregate	Aggregate	Gasoline	49410.95758	315261.4897	7.508408221	7508.408221	7508.408221	315261.4897	315261.4897	41.99	MCY
Orange (SC)	2023	MDV	Aggregate	Aggregate	Gasoline	323460.5581	12520789.89	644.9392498	644939.2498	654470.2298	12520789.89	12891471.75	19.70	MDV
Orange (SC)	2023	MDV	Aggregate	Aggregate	Diesel	4630.543523	185304.7669	7.814914508	7814.914508		185304.7669			
Orange (SC)	2023	MDV	Aggregate	Aggregate	Electricity	2366.549836	87987.32368	0	0		87987.32368			
Orange (SC)	2023	MDV	Aggregate	Aggregate	Plug-in Hybr	2109.808178	97389.76861	1.716065464	1716.065464		97389.76861			
Orange (SC)	2023	MH	Aggregate	Aggregate	Gasoline	6246.542371	60121.11097	12.27338692	12273.38692	15209.26808	60121.11097	89918.06589	5.91	MH
Orange (SC)	2023	MH	Aggregate	Aggregate	Diesel	2943.826344	29796.95492	2.935881151	2935.881151		29796.95492			
Orange (SC)	2023	MHDT	Aggregate	Aggregate	Gasoline	7581.400632	413802.2854	80.40931741	80409.31741	210315.2706	413802.2854	1573775.154	7.48	MHDT
Orange (SC)	2023	MHDT	Aggregate	Aggregate	Diesel	27021.41059	1147551.627	128.4773186	128477.3186		1147551.627			
Orange (SC)	2023	MHDT	Aggregate	Aggregate	Electricity	18.71449051	397.0840496	0	0		397.0840496			
Orange (SC)	2023	MHDT	Aggregate	Aggregate	Natural Gas	246.4124985	12024.15799	1.428634579	1428.634579		12024.15799			
Orange (SC)	2023	OBUS	Aggregate	Aggregate	Gasoline	876.9027969	37020.1996	7.203304301	7203.304301	12888.47555	37020.1996	78556.56335	6.10	OBUS
Orange (SC)	2023	OBUS	Aggregate	Aggregate	Diesel	461.0898419	36373.63737	5.100718524	5100.718524		36373.63737			
Orange (SC)	2023	OBUS	Aggregate	Aggregate	Natural Gas	82.4698802	5162.726383	0.584452721	584.4527211		5162.726383			
Orange (SC)	2023	SBUS	Aggregate	Aggregate	Gasoline	661.9447764	29787.08397	3.359332103	3359.332103	10013.24463	29787.08397	65555.21753	6.55	SBUS
Orange (SC)	2023	SBUS	Aggregate	Aggregate	Diesel	854.0901222	17539.34852	2.386688805	2386.688805		17539.34852			
Orange (SC)	2023	SBUS	Aggregate	Aggregate	Electricity	0.774914199	8.998995356	0	0		8.998995356			
Orange (SC)	2023	SBUS	Aggregate	Aggregate	Natural Gas	715.5663177	18219.78605	4.267223725	4267.223725		18219.78605			
Orange (SC)	2023	UBUS	Aggregate	Aggregate	Gasoline	255.1048963	42087.53345	3.65617145	3656.17145	40960.73586	42087.53345	152805.8919	3.73	UBUS
Orange (SC)	2023	UBUS	Aggregate	Aggregate	Electricity	4.037405551	77.72005682	0	0		77.72005682			
Orange (SC)	2023	UBUS	Aggregate	Aggregate	Natural Gas	575.5609189	110640.6384	37.30456442	37304.56442		110640.6384			

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: Orange (SC)

Calendar Year: 2024

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Class	Model Year	Speed	Fuel	Population	Total VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Orange (SC)	2024	HHDT	Aggregate	Aggregate	Gasoline	7.623311802	590.1042313	0.140377911	140.3779106	225664.9064	590.1042313	1353571.421	6.00	HHDT
Orange (SC)	2024	HHDT	Aggregate	Aggregate	Diesel	11093.50859	1265161.083	211.2875152	211287.5152		1265161.083			
Orange (SC)	2024	HHDT	Aggregate	Aggregate	Electricity	35.69370556	3457.836891	0	0		3457.836891			
Orange (SC)	2024	HHDT	Aggregate	Aggregate	Natural Gas	1322.866094	84362.39726	14.23701335	14237.01335		84362.39726			
Orange (SC)	2024	LDA	Aggregate	Aggregate	Gasoline	1065891.765	42285386.13	1408.433705	1408433.705	1435612.861	42285386.13	47017465.9	32.75	LDA
Orange (SC)	2024	LDA	Aggregate	Aggregate	Diesel	3266.416655	98494.14462	2.302447572	2302.447572		98494.14462			
Orange (SC)	2024	LDA	Aggregate	Aggregate	Electricity	67229.20858	3174887.786	0	0		3174887.786			
Orange (SC)	2024	LDA	Aggregate	Aggregate	Plug-in Hybr	31196.5885	1458697.84	24.87670874	24876.70874		1458697.84			
Orange (SC)	2024	LDT1	Aggregate	Aggregate	Gasoline	97776.1357	3495530.367	138.9785117	138978.5117	139115.9201	3495530.367	3513592.028	25.26	LDT1
Orange (SC)	2024	LDT1	Aggregate	Aggregate	Diesel	31.55516109	483.8937201	0.020274107	20.27410716		483.8937201			
Orange (SC)	2024	LDT1	Aggregate	Aggregate	Electricity	234.5800758	10019.73277	0	0		10019.73277			
Orange (SC)	2024	LDT1	Aggregate	Aggregate	Plug-in Hybr	142.9646924	7558.03441	0.117134304	117.1343039		7558.03441			
Orange (SC)	2024	LDT2	Aggregate	Aggregate	Gasoline	523220.8345	21321177.46	872.8633551	872863.3551	878991.9626	21321177.46	21736235.25	24.73	LDT2
Orange (SC)	2024	LDT2	Aggregate	Aggregate	Diesel	2063.415332	86972.74449	2.705696258	2705.696258		86972.74449			
Orange (SC)	2024	LDT2	Aggregate	Aggregate	Electricity	3182.504872	117085.3103	0	0		117085.3103			
Orange (SC)	2024	LDT2	Aggregate	Aggregate	Plug-in Hybr	4167.835855	210999.7343	3.422911296	3422.911296		210999.7343			
Orange (SC)	2024	LHDT1	Aggregate	Aggregate	Gasoline	41326.42062	1661881.956	118.308255	118308.255	162824.6769	1661881.956	2595817.631	15.94	LHDT1
Orange (SC)	2024	LHDT1	Aggregate	Aggregate	Diesel	21602.56979	922158.8233	44.51642193	44516.42193		922158.8233			
Orange (SC)	2024	LHDT1	Aggregate	Aggregate	Electricity	155.3882898	11776.85136	0	0		11776.85136			
Orange (SC)	2024	LHDT2	Aggregate	Aggregate	Gasoline	6721.102951	253091.6297	20.60060746	20600.60746	43032.07034	253091.6297	647507.4334	15.05	LHDT2
Orange (SC)	2024	LHDT2	Aggregate	Aggregate	Diesel	9173.234432	391527.7031	22.43146289	22431.46289		391527.7031			
Orange (SC)	2024	LHDT2	Aggregate	Aggregate	Electricity	40.21934854	2888.100628	0	0		2888.100628			
Orange (SC)	2024	MCY	Aggregate	Aggregate	Gasoline	50238.99817	321576.5516	7.622889471	7622.889471	7622.889471	321576.5516	321576.5516	42.19	MCY
Orange (SC)	2024	MDV	Aggregate	Aggregate	Gasoline	324536.5237	12620485.4	635.3871153	635387.1153	645061.8953	12620485.4	13052021.39	20.23	MDV
Orange (SC)	2024	MDV	Aggregate	Aggregate	Diesel	4623.453247	183419.8343	7.625165924	7625.165924		183419.8343			
Orange (SC)	2024	MDV	Aggregate	Aggregate	Electricity	3450.063477	127073.3453	0	0		127073.3453			
Orange (SC)	2024	MDV	Aggregate	Aggregate	Plug-in Hybr	2619.629178	121042.8119	2.049614094	2049.614094		121042.8119			
Orange (SC)	2024	MH	Aggregate	Aggregate	Gasoline	6023.474387	58495.55977	11.96604106	11966.04106	14894.89569	58495.55977	88257.50629	5.93	MH
Orange (SC)	2024	MH	Aggregate	Aggregate	Diesel	2969.063612	29761.94653	2.928854631	2928.854631		29761.94653			
Orange (SC)	2024	MHDT	Aggregate	Aggregate	Gasoline	7429.609302	397726.4227	77.00341058	77003.41058	207745.9375	397726.4227	1569991.739	7.56	MHDT
Orange (SC)	2024	MHDT	Aggregate	Aggregate	Diesel	27477.47253	1155908.692	129.2675278	129267.5278		1155908.692			
Orange (SC)	2024	MHDT	Aggregate	Aggregate	Electricity	75.7223849	3855.839769	0	0		3855.839769			
Orange (SC)	2024	MHDT	Aggregate	Aggregate	Natural Gas	260.262888	12500.78402	1.474999133	1474.999133		12500.78402			
Orange (SC)	2024	OBUS	Aggregate	Aggregate	Gasoline	859.2545526	35950.2379	6.944890861	6944.890861	12632.34965	35950.2379	77847.66522	6.16	OBUS
Orange (SC)	2024	OBUS	Aggregate	Aggregate	Diesel	470.1282933	36479.12846	5.101183649	5101.183649		36479.12846			
Orange (SC)	2024	OBUS	Aggregate	Aggregate	Electricity	2.385794078	184.4758931	0	0		184.4758931			
Orange (SC)	2024	OBUS	Aggregate	Aggregate	Natural Gas	85.0569544	5233.822967	0.586275139	586.2751388		5233.822967			
Orange (SC)	2024	SBUS	Aggregate	Aggregate	Gasoline	669.6299914	30256.65941	3.39846975	3398.46975	10067.43946	30256.65941	66083.9102	6.56	SBUS
Orange (SC)	2024	SBUS	Aggregate	Aggregate	Diesel	821.2477494	16793.01525	2.276611833	2276.611833		16793.01525			
Orange (SC)	2024	SBUS	Aggregate	Aggregate	Electricity	5.553480404	162.1392305	0	0		162.1392305			
Orange (SC)	2024	SBUS	Aggregate	Aggregate	Natural Gas	748.1584339	18872.09631	4.392357878	4392.357878		18872.09631			
Orange (SC)	2024	UBUS	Aggregate	Aggregate	Gasoline	255.8303759	42204.05	3.455588309	3455.588309	40826.74862	42204.05	153100.0464	3.75	UBUS
Orange (SC)	2024	UBUS	Aggregate	Aggregate	Electricity	4.037405551	77.72005682	0	0		77.72005682			
Orange (SC)	2024	UBUS	Aggregate	Aggregate	Natural Gas	576.5236337	110818.2763	37.37116031	37371.16031		110818.2763			

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: Orange (SC)

Calendar Year: 2025

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Orange (SC)	2025	HHDT	Aggregate	Aggregate	Gasoline	6.722292417	572.5132259	0.132943836	132.9438357	225886.6584	572.5132259	1377144.616	6.10	HHDT
Orange (SC)	2025	HHDT	Aggregate	Aggregate	Diesel	11420.65028	1281007.926	211.237609	211237.609		1281007.926			
Orange (SC)	2025	HHDT	Aggregate	Aggregate	Electricity	83.08829312	8366.060491	0	0		8366.060491			
Orange (SC)	2025	HHDT	Aggregate	Aggregate	Natural Gas	1387.681315	87198.11685	14.51610558	14516.10558		87198.11685			
Orange (SC)	2025	LDA	Aggregate	Aggregate	Gasoline	1056312.531	41885606.83	1364.761186	1364761.186	1392829.676	41885606.83	47162346.91	33.86	LDA
Orange (SC)	2025	LDA	Aggregate	Aggregate	Diesel	3018.286484	89138.09087	2.06406705	2064.06705		89138.09087			
Orange (SC)	2025	LDA	Aggregate	Aggregate	Electricity	74944.83017	3623884.151	0	0		3623884.151			
Orange (SC)	2025	LDA	Aggregate	Aggregate	Plug-in Hybrid	33699.13897	1563717.835	26.00442289	26004.42289		1563717.835			
Orange (SC)	2025	LDT1	Aggregate	Aggregate	Gasoline	96356.97279	3443415.123	134.366068	134366.068	134545.6355	3443415.123	3467965.045	25.78	LDT1
Orange (SC)	2025	LDT1	Aggregate	Aggregate	Diesel	28.50822088	428.3760164	0.017924086	17.9240858		428.3760164			
Orange (SC)	2025	LDT1	Aggregate	Aggregate	Electricity	292.0687492	13382.73952	0	0		13382.73952			
Orange (SC)	2025	LDT1	Aggregate	Aggregate	Plug-in Hybrid	205.3971672	10738.80692	0.161643396	161.6433956		10738.80692			
Orange (SC)	2025	LDT2	Aggregate	Aggregate	Gasoline	529834.4659	21568112.97	860.9716631	860971.6631	867567.1461	21568112.97	22057981.32	25.43	LDT2
Orange (SC)	2025	LDT2	Aggregate	Aggregate	Diesel	2111.525403	87946.98549	2.68272495	2682.72495		87946.98549			
Orange (SC)	2025	LDT2	Aggregate	Aggregate	Electricity	4251.506284	154415.472	0	0		154415.472			
Orange (SC)	2025	LDT2	Aggregate	Aggregate	Plug-in Hybrid	4967.68538	247505.896	3.912758129	3912.758129		247505.896			
Orange (SC)	2025	LHDT1	Aggregate	Aggregate	Gasoline	41223.98689	1660486.368	115.6151536	115615.1536	161249.0365	1660486.368	2642102.863	16.39	LHDT1
Orange (SC)	2025	LHDT1	Aggregate	Aggregate	Diesel	22344.74546	951494.9678	45.63388289	45633.88289		951494.9678			
Orange (SC)	2025	LHDT1	Aggregate	Aggregate	Electricity	428.3107595	30121.52667	0	0		30121.52667			
Orange (SC)	2025	LHDT2	Aggregate	Aggregate	Gasoline	6668.437484	250352.8675	19.99612697	19996.12697	43152.79839	250352.8675	665608.8476	15.42	LHDT2
Orange (SC)	2025	LHDT2	Aggregate	Aggregate	Diesel	9609.574779	407866.7845	23.15667142	23156.67142		407866.7845			
Orange (SC)	2025	LHDT2	Aggregate	Aggregate	Electricity	110.6168929	7389.195621	0	0		7389.195621			
Orange (SC)	2025	MCY	Aggregate	Aggregate	Gasoline	51011.4251	325908.2941	7.696840101	7696.840101	7696.840101	325908.2941	325908.2941	42.34	MCY
Orange (SC)	2025	MDV	Aggregate	Aggregate	Gasoline	325579.9564	12660247.41	622.3110176	622311.0176	632072.8577	12660247.41	13152755.51	20.81	MDV
Orange (SC)	2025	MDV	Aggregate	Aggregate	Diesel	4600.640767	180507.4796	7.379567219	7379.567219		180507.4796			
Orange (SC)	2025	MDV	Aggregate	Aggregate	Electricity	4586.98934	166596.8195	0	0		166596.8195			
Orange (SC)	2025	MDV	Aggregate	Aggregate	Plug-in Hybrid	3164.448377	145403.8052	2.382272868	2382.272868		145403.8052			
Orange (SC)	2025	MH	Aggregate	Aggregate	Gasoline	5833.176957	56944.1428	11.64679864	11646.79864	14560.39622	56944.1428	86541.10868	5.94	MH
Orange (SC)	2025	MH	Aggregate	Aggregate	Diesel	2988.17924	29596.96588	2.913597583	2913.597583		29596.96588			
Orange (SC)	2025	MHDT	Aggregate	Aggregate	Gasoline	7268.413445	379776.8426	73.08335708	73083.35708	203891.4411	379776.8426	1564816.596	7.67	MHDT
Orange (SC)	2025	MHDT	Aggregate	Aggregate	Diesel	28028.87695	1160618.703	129.2771257	129277.1257		1160618.703			
Orange (SC)	2025	MHDT	Aggregate	Aggregate	Electricity	222.6169852	11431.93425	0	0		11431.93425			
Orange (SC)	2025	MHDT	Aggregate	Aggregate	Natural Gas	276.7734983	12989.11661	1.53095828	1530.95828		12989.11661			
Orange (SC)	2025	OBUS	Aggregate	Aggregate	Gasoline	835.2077651	34718.74829	6.628377733	6628.377733	12288.13447	34718.74829	77099.8118	6.27	OBUS
Orange (SC)	2025	OBUS	Aggregate	Aggregate	Diesel	483.633336	36576.87746	5.066487471	5066.487471		36576.87746			
Orange (SC)	2025	OBUS	Aggregate	Aggregate	Electricity	5.857415532	444.1426882	0	0		444.1426882			
Orange (SC)	2025	OBUS	Aggregate	Aggregate	Natural Gas	89.06555643	5360.043363	0.593269269	593.2692694		5360.043363			
Orange (SC)	2025	SBUS	Aggregate	Aggregate	Gasoline	678.7674095	30657.60454	3.431527869	3431.527869	10107.51636	30657.60454	66554.58689	6.58	SBUS
Orange (SC)	2025	SBUS	Aggregate	Aggregate	Diesel	788.6124051	16073.03349	2.170748419	2170.748419		16073.03349			
Orange (SC)	2025	SBUS	Aggregate	Aggregate	Electricity	11.85785342	361.0238769	0	0		361.0238769			
Orange (SC)	2025	SBUS	Aggregate	Aggregate	Natural Gas	779.1807775	19462.92499	4.505240075	4505.240075		19462.92499			
Orange (SC)	2025	UBUS	Aggregate	Aggregate	Gasoline	256.3483478	42289.47506	3.462280467	3462.280467	40750.36958	42289.47506	153396.7086	3.76	UBUS
Orange (SC)	2025	UBUS	Aggregate	Aggregate	Electricity	4.037405551	77.72005682	0	0		77.72005682			
Orange (SC)	2025	UBUS	Aggregate	Aggregate	Natural Gas	577.6938563	111029.5135	37.28808911	37288.08911		111029.5135			

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: Orange (SC)

Calendar Year: 2026

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Orange (SC)	2026	HHDT	Aggregate	Aggregate	Gasoline	5.642094151	552.7116358	0.124867026	124.8670257	225967.4234	552.7116358	1401053.414	6.20	HHDT
Orange (SC)	2026	HHDT	Aggregate	Aggregate	Diesel	11688.1985	1295979.382	211.0878506	211087.8506		1295979.382			
Orange (SC)	2026	HHDT	Aggregate	Aggregate	Electricity	144.7973925	14631.96518	0	0		14631.96518			
Orange (SC)	2026	HHDT	Aggregate	Aggregate	Natural Gas	1447.890886	89889.3555	14.75470587	14754.70587		89889.3555			
Orange (SC)	2026	LDA	Aggregate	Aggregate	Gasoline	1049515.92	41577927.11	1326.240617	1326240.617	1354714.628	41577927.11	47152803.2	34.81	LDA
Orange (SC)	2026	LDA	Aggregate	Aggregate	Diesel	2742.173139	80362.1723	1.843101131	1843.101131		80362.1723			
Orange (SC)	2026	LDA	Aggregate	Aggregate	Electricity	81098.87481	3862245.078	0	0		3862245.078			
Orange (SC)	2026	LDA	Aggregate	Aggregate	Plug-in Hybrid	35696.79687	1632268.837	26.63090991	26630.90991		1632268.837			
Orange (SC)	2026	LDT1	Aggregate	Aggregate	Gasoline	95040.06341	3392265.426	130.0301381	130030.1381	130251.5301	3392265.426	3423497.058	26.28	LDT1
Orange (SC)	2026	LDT1	Aggregate	Aggregate	Diesel	24.49979621	362.8616544	0.015149993	15.14999261		362.8616544			
Orange (SC)	2026	LDT1	Aggregate	Aggregate	Electricity	361.8710153	16951.55958	0	0		16951.55958			
Orange (SC)	2026	LDT1	Aggregate	Aggregate	Plug-in Hybrid	270.687928	13917.21072	0.206242024	206.2420243		13917.21072			
Orange (SC)	2026	LDT2	Aggregate	Aggregate	Gasoline	536812.5168	21784157.47	849.8319221	849831.9221	856816.8527	21784157.47	22339582.21	26.07	LDT2
Orange (SC)	2026	LDT2	Aggregate	Aggregate	Diesel	2150.46559	88467.05453	2.651974699	2651.974699		88467.05453			
Orange (SC)	2026	LDT2	Aggregate	Aggregate	Electricity	5257.386579	188253.2028	0	0		188253.2028			
Orange (SC)	2026	LDT2	Aggregate	Aggregate	Plug-in Hybrid	5706.320321	278704.4829	4.332955856	4332.955856		278704.4829			
Orange (SC)	2026	LHDT1	Aggregate	Aggregate	Gasoline	41098.7832	1657395.449	113.3264813	113326.4813	159962.8956	1657395.449	2688810.497	16.81	LHDT1
Orange (SC)	2026	LHDT1	Aggregate	Aggregate	Diesel	23010.07791	976534.0014	46.63641428	46636.41428		976534.0014			
Orange (SC)	2026	LHDT1	Aggregate	Aggregate	Electricity	815.1958673	54881.04636	0	0		54881.04636			
Orange (SC)	2026	LHDT2	Aggregate	Aggregate	Gasoline	6615.094062	247700.2283	19.47647629	19476.47629	43296.80815	247700.2283	683461.7416	15.79	LHDT2
Orange (SC)	2026	LHDT2	Aggregate	Aggregate	Diesel	10012.14742	422248.7801	23.82033186	23820.33186		422248.7801			
Orange (SC)	2026	LHDT2	Aggregate	Aggregate	Electricity	211.0818991	13512.73317	0	0		13512.73317			
Orange (SC)	2026	MCY	Aggregate	Aggregate	Gasoline	51778.70958	330192.3764	7.778574027	7778.574027	7778.574027	330192.3764	330192.3764	42.45	MCY
Orange (SC)	2026	MDV	Aggregate	Aggregate	Gasoline	326894.2358	12693098.03	610.0425653	610042.5653	619837.9048	12693098.03	13238016.12	21.36	MDV
Orange (SC)	2026	MDV	Aggregate	Aggregate	Diesel	4570.655518	177255.4948	7.136823534	7136.823534		177255.4948			
Orange (SC)	2026	MDV	Aggregate	Aggregate	Electricity	5641.41152	201874.3361	0	0		201874.3361			
Orange (SC)	2026	MDV	Aggregate	Aggregate	Plug-in Hybrid	3648.256691	165788.2556	2.658516014	2658.516014		165788.2556			
Orange (SC)	2026	MH	Aggregate	Aggregate	Gasoline	5656.411647	55665.04345	11.39189816	11391.89816	14295.14262	55665.04345	85134.42943	5.96	MH
Orange (SC)	2026	MH	Aggregate	Aggregate	Diesel	3003.794796	29469.38598	2.903244461	2903.244461		29469.38598			
Orange (SC)	2026	MHDT	Aggregate	Aggregate	Gasoline	7090.881325	361926.9994	69.26601079	69266.01079	200020.4322	361926.9994	1560062.836	7.80	MHDT
Orange (SC)	2026	MHDT	Aggregate	Aggregate	Diesel	28484.43632	1163539.561	129.1722072	129172.2072		1163539.561			
Orange (SC)	2026	MHDT	Aggregate	Aggregate	Electricity	416.2854567	21163.22493	0	0		21163.22493			
Orange (SC)	2026	MHDT	Aggregate	Aggregate	Natural Gas	292.2448194	13433.05103	1.582214286	1582.214286		13433.05103			
Orange (SC)	2026	OBUS	Aggregate	Aggregate	Gasoline	819.5446697	33711.35172	6.36419335	6364.19335	11996.95191	33711.35172	76622.13585	6.39	OBUS
Orange (SC)	2026	OBUS	Aggregate	Aggregate	Diesel	495.7657654	36691.85325	5.032440237	5032.440237		36691.85325			
Orange (SC)	2026	OBUS	Aggregate	Aggregate	Electricity	9.821208849	732.8008896	0	0		732.8008896			
Orange (SC)	2026	OBUS	Aggregate	Aggregate	Natural Gas	92.91719861	5486.130001	0.600318324	600.3183242		5486.130001			
Orange (SC)	2026	SBUS	Aggregate	Aggregate	Gasoline	688.5633033	31112.44458	3.471010776	3471.010776	10147.82317	31112.44458	67092.72964	6.61	SBUS
Orange (SC)	2026	SBUS	Aggregate	Aggregate	Diesel	756.2070806	15379.61859	2.069129743	2069.129743		15379.61859			
Orange (SC)	2026	SBUS	Aggregate	Aggregate	Electricity	19.66639619	599.0783053	0	0		599.0783053			
Orange (SC)	2026	SBUS	Aggregate	Aggregate	Natural Gas	808.8277787	20001.58816	4.607682648	4607.682648		20001.58816			
Orange (SC)	2026	UBUS	Aggregate	Aggregate	Gasoline	256.8740368	42376.0564	3.473985672	3473.985672	40832.18322	42376.0564	153702.2412	3.76	UBUS
Orange (SC)	2026	UBUS	Aggregate	Aggregate	Electricity	4.037405551	77.72005682	0	0		77.72005682			
Orange (SC)	2026	UBUS	Aggregate	Aggregate	Natural Gas	578.8563618	111248.4647	37.35819755	37358.19755		111248.4647			

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: Orange (SC)

Calendar Year: 2027

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Orange (SC)	2027	HHDT	Aggregate	Aggregate	Gasoline	5.373929496	547.76404	0.121762202	121.7622018	225529.8742	547.76404	1425352.343	6.32	HHDT
Orange (SC)	2027	HHDT	Aggregate	Aggregate	Diesel	11908.96955	1309093.975	210.5185392	210518.5392		1309093.975			
Orange (SC)	2027	HHDT	Aggregate	Aggregate	Electricity	233.8771255	23615.4586	0	0		23615.4586			
Orange (SC)	2027	HHDT	Aggregate	Aggregate	Natural Gas	1499.6845	92095.14564	14.88957273	14889.57273		92095.14564			
Orange (SC)	2027	LDA	Aggregate	Aggregate	Gasoline	1043775.809	41402174.22	1296.154677	1296154.677	1324994.051	41402174.22	47257614.15	35.67	LDA
Orange (SC)	2027	LDA	Aggregate	Aggregate	Diesel	2455.862765	72324.22786	1.642347379	1642.347379		72324.22786			
Orange (SC)	2027	LDA	Aggregate	Aggregate	Electricity	86904.1211	4089426.711	0	0		4089426.711			
Orange (SC)	2027	LDA	Aggregate	Aggregate	Plug-in Hybrid	37476.38962	1693688.99	27.19702677	27197.02677		1693688.99			
Orange (SC)	2027	LDT1	Aggregate	Aggregate	Gasoline	93827.3378	3351768.879	126.4355551	126435.5551	126700.5057	3351768.879	3390764.83	26.76	LDT1
Orange (SC)	2027	LDT1	Aggregate	Aggregate	Diesel	11.77289151	181.1937183	0.007295538	7.295538107		181.1937183			
Orange (SC)	2027	LDT1	Aggregate	Aggregate	Electricity	446.5153511	21261.3118	0	0		21261.3118			
Orange (SC)	2027	LDT1	Aggregate	Aggregate	Plug-in Hybrid	345.6382808	17553.4455	0.257655066	257.6550662		17553.4455			
Orange (SC)	2027	LDT2	Aggregate	Aggregate	Gasoline	543469.3082	22020144.82	842.3786957	842378.6957	849787.4496	22020144.82	22645017.5	26.65	LDT2
Orange (SC)	2027	LDT2	Aggregate	Aggregate	Diesel	2178.395085	88903.81695	2.624311241	2624.311241		88903.81695			
Orange (SC)	2027	LDT2	Aggregate	Aggregate	Electricity	6350.417939	224424.9867	0	0		224424.9867			
Orange (SC)	2027	LDT2	Aggregate	Aggregate	Plug-in Hybrid	6479.43822	311543.8729	4.784442655	4784.442655		311543.8729			
Orange (SC)	2027	LHDT1	Aggregate	Aggregate	Gasoline	40902.86203	1647637.185	110.6705061	110670.5061	157990.8844	1647637.185	2733707.522	17.30	LHDT1
Orange (SC)	2027	LHDT1	Aggregate	Aggregate	Diesel	23584.12171	995051.7389	47.32037824	47320.37824		995051.7389			
Orange (SC)	2027	LHDT1	Aggregate	Aggregate	Electricity	1389.11065	91018.59866	0	0		91018.59866			
Orange (SC)	2027	LHDT2	Aggregate	Aggregate	Gasoline	6543.090594	244222.6914	18.89234936	18892.34936	43204.37782	244222.6914	700309.2763	16.21	LHDT2
Orange (SC)	2027	LHDT2	Aggregate	Aggregate	Diesel	10371.194	433595.3221	24.31202845	24312.02845		433595.3221			
Orange (SC)	2027	LHDT2	Aggregate	Aggregate	Electricity	360.8389761	22491.2628	0	0		22491.2628			
Orange (SC)	2027	MCY	Aggregate	Aggregate	Gasoline	52507.36673	334153.7498	7.864502999	7864.502999	7864.502999	334153.7498	334153.7498	42.49	MCY
Orange (SC)	2027	MDV	Aggregate	Aggregate	Gasoline	328296.2492	12751503.06	600.8686692	600868.6692	610732.1674	12751503.06	13349514.38	21.86	MDV
Orange (SC)	2027	MDV	Aggregate	Aggregate	Diesel	4528.513812	174319.4796	6.920085027	6920.085027		174319.4796			
Orange (SC)	2027	MDV	Aggregate	Aggregate	Electricity	6724.905683	237227.8074	0	0		237227.8074			
Orange (SC)	2027	MDV	Aggregate	Aggregate	Plug-in Hybrid	4138.74125	186464.0296	2.943413089	2943.413089		186464.0296			
Orange (SC)	2027	MH	Aggregate	Aggregate	Gasoline	5494.773608	54533.35177	11.17103301	11171.03301	14060.61372	54533.35177	83871.18869	5.96	MH
Orange (SC)	2027	MH	Aggregate	Aggregate	Diesel	3015.208329	29337.83692	2.889580714	2889.580714		29337.83692			
Orange (SC)	2027	MHDT	Aggregate	Aggregate	Gasoline	6899.471297	343882.9475	65.46522009	65465.22009	195783.1543	343882.9475	1556010.717	7.95	MHDT
Orange (SC)	2027	MHDT	Aggregate	Aggregate	Diesel	28843.00512	1162783.276	128.6922686	128692.2686		1162783.276			
Orange (SC)	2027	MHDT	Aggregate	Aggregate	Electricity	705.0961221	35495.33444	0	0		35495.33444			
Orange (SC)	2027	MHDT	Aggregate	Aggregate	Natural Gas	307.5844694	13849.15943	1.625665621	1625.665621		13849.15943			
Orange (SC)	2027	OBUS	Aggregate	Aggregate	Gasoline	799.5744215	32636.05253	6.073477703	6073.477703	11662.84371	32636.05253	76203.1847	6.53	OBUS
Orange (SC)	2027	OBUS	Aggregate	Aggregate	Diesel	507.6740734	36839.88126	4.985973216	4985.973216		36839.88126			
Orange (SC)	2027	OBUS	Aggregate	Aggregate	Electricity	15.63862172	1154.463508	0	0		1154.463508			
Orange (SC)	2027	OBUS	Aggregate	Aggregate	Natural Gas	96.22385011	5572.787403	0.603392792	603.3927917		5572.787403			
Orange (SC)	2027	SBUS	Aggregate	Aggregate	Gasoline	695.8799126	31450.32858	3.497434635	3497.434635	10160.62178	31450.32858	67560.65176	6.65	SBUS
Orange (SC)	2027	SBUS	Aggregate	Aggregate	Diesel	723.187469	14694.20454	1.969072882	1969.072882		14694.20454			
Orange (SC)	2027	SBUS	Aggregate	Aggregate	Electricity	31.29977754	956.1003922	0	0		956.1003922			
Orange (SC)	2027	SBUS	Aggregate	Aggregate	Natural Gas	836.1689696	20460.01826	4.69411426	4694.11426		20460.01826			
Orange (SC)	2027	UBUS	Aggregate	Aggregate	Gasoline	257.3894016	42461.24538	3.256425155	3256.425155	40658.18848	42461.24538	154011.2305	3.79	UBUS
Orange (SC)	2027	UBUS	Aggregate	Aggregate	Electricity	4.076617891	80.22081704	0	0		80.22081704			
Orange (SC)	2027	UBUS	Aggregate	Aggregate	Natural Gas	579.9899791	111469.7643	37.40176332	37401.76332		111469.7643			

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: Orange (SC)

Calendar Year: 2028

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Orange (SC)	2028	HHDT	Aggregate	Aggregate	Gasoline	5.168598081	541.7999038	0.118465212	118.4652123	224274.8191	541.7999038	1450247.335	6.47	HHDT
Orange (SC)	2028	HHDT	Aggregate	Aggregate	Diesel	12073.80099	1319644.278	209.1315041	209131.5041		1319644.278			
Orange (SC)	2028	HHDT	Aggregate	Aggregate	Electricity	359.8993539	36164.77257	0	0		36164.77257			
Orange (SC)	2028	HHDT	Aggregate	Aggregate	Natural Gas	1544.334811	93896.48434	15.02484988	15024.84988		93896.48434			
Orange (SC)	2028	LDA	Aggregate	Aggregate	Gasoline	1038995.892	41263326.11	1267.332722	1267332.722	1296400.171	41263326.11	47379966.54	36.55	LDA
Orange (SC)	2028	LDA	Aggregate	Aggregate	Diesel	2171.612574	64952.63275	1.453999491	1453.999491		64952.63275			
Orange (SC)	2028	LDA	Aggregate	Aggregate	Electricity	92523.87745	4305755.793	0	0		4305755.793			
Orange (SC)	2028	LDA	Aggregate	Aggregate	Plug-in Hybrid	39072.49176	1745931.998	27.61344894	27613.44894		1745931.998			
Orange (SC)	2028	LDT1	Aggregate	Aggregate	Gasoline	92684.36641	3313373.272	122.8528427	122852.8427	123171.3664	3313373.272	3361349.772	27.29	LDT1
Orange (SC)	2028	LDT1	Aggregate	Aggregate	Diesel	6.507772921	106.1649511	0.004085085	4.085085265		106.1649511			
Orange (SC)	2028	LDT1	Aggregate	Aggregate	Electricity	546.4474323	26285.09612	0	0		26285.09612			
Orange (SC)	2028	LDT1	Aggregate	Aggregate	Plug-in Hybrid	430.0680074	21585.23805	0.314438615	314.4386154		21585.23805			
Orange (SC)	2028	LDT2	Aggregate	Aggregate	Gasoline	549816.574	22230739.4	833.9325083	833932.5083	841758.3575	22230739.4	22928056.41	27.24	LDT2
Orange (SC)	2028	LDT2	Aggregate	Aggregate	Diesel	2199.451121	89167.78654	2.58662426	2586.62426		89167.78654			
Orange (SC)	2028	LDT2	Aggregate	Aggregate	Electricity	7541.699421	263248.3292	0	0		263248.3292			
Orange (SC)	2028	LDT2	Aggregate	Aggregate	Plug-in Hybrid	7280.311558	344900.8933	5.239224988	5239.224988		344900.8933			
Orange (SC)	2028	LHDT1	Aggregate	Aggregate	Gasoline	40643.11047	1631919.233	107.9106307	107910.6307	155608.1514	1631919.233	2777802.911	17.85	LHDT1
Orange (SC)	2028	LHDT1	Aggregate	Aggregate	Diesel	24055.01767	1007077.961	47.69752071	47697.52071		1007077.961			
Orange (SC)	2028	LHDT1	Aggregate	Aggregate	Electricity	2171.230816	138805.7173	0	0		138805.7173			
Orange (SC)	2028	LHDT2	Aggregate	Aggregate	Gasoline	6462.82446	240107.6	18.30522632	18305.22632	42946.77886	240107.6	716475.9052	16.68	LHDT2
Orange (SC)	2028	LHDT2	Aggregate	Aggregate	Diesel	10682.49761	441951.9889	24.64155253	24641.55253		441951.9889			
Orange (SC)	2028	LHDT2	Aggregate	Aggregate	Electricity	565.7731753	34416.31633	0	0		34416.31633			
Orange (SC)	2028	MCY	Aggregate	Aggregate	Gasoline	53242.81767	337881.2058	7.932212537	7932.212537	7932.212537	337881.2058	337881.2058	42.60	MCY
Orange (SC)	2028	MDV	Aggregate	Aggregate	Gasoline	329659.4277	12804464.08	591.2837782	591283.7782	601182.8853	12804464.08	13455242.27	22.38	MDV
Orange (SC)	2028	MDV	Aggregate	Aggregate	Diesel	4475.198106	171182.0914	6.681937063	6681.937063		171182.0914			
Orange (SC)	2028	MDV	Aggregate	Aggregate	Electricity	7844.227849	272931.8885	0	0		272931.8885			
Orange (SC)	2028	MDV	Aggregate	Aggregate	Plug-in Hybrid	4626.528268	206664.2109	3.217169978	3217.169978		206664.2109			
Orange (SC)	2028	MH	Aggregate	Aggregate	Gasoline	5341.240362	53472.45404	10.95233594	10952.33594	13828.49145	53472.45404	82664.58286	5.98	MH
Orange (SC)	2028	MH	Aggregate	Aggregate	Diesel	3021.622086	29192.12881	2.876155506	2876.155506		29192.12881			
Orange (SC)	2028	MHDT	Aggregate	Aggregate	Gasoline	6678.491886	324620.0907	61.40701597	61407.01597	190422.7833	324620.0907	1552065.751	8.15	MHDT
Orange (SC)	2028	MHDT	Aggregate	Aggregate	Diesel	29046.88357	1155989.803	127.3536849	127353.6849		1155989.803			
Orange (SC)	2028	MHDT	Aggregate	Aggregate	Electricity	1140.526504	57294.20823	0	0		57294.20823			
Orange (SC)	2028	MHDT	Aggregate	Aggregate	Natural Gas	320.8747289	14161.64894	1.66208239	1662.08239		14161.64894			
Orange (SC)	2028	OBUS	Aggregate	Aggregate	Gasoline	782.1654895	31513.71967	5.807835831	5807.835831	11363.80085	31513.71967	75946.91173	6.68	OBUS
Orange (SC)	2028	OBUS	Aggregate	Aggregate	Diesel	518.0754068	36995.55648	4.951135641	4951.135641		36995.55648			
Orange (SC)	2028	OBUS	Aggregate	Aggregate	Electricity	24.44236773	1790.777584	0	0		1790.777584			
Orange (SC)	2028	OBUS	Aggregate	Aggregate	Natural Gas	99.23244446	5646.857996	0.604829383	604.8293828		5646.857996			
Orange (SC)	2028	SBUS	Aggregate	Aggregate	Gasoline	700.6254389	31666.65086	3.510852764	3510.852764	10139.36152	31666.65086	67973.03038	6.70	SBUS
Orange (SC)	2028	SBUS	Aggregate	Aggregate	Diesel	688.6435349	13991.01927	1.866988828	1866.988828		13991.01927			
Orange (SC)	2028	SBUS	Aggregate	Aggregate	Electricity	48.55751581	1491.992111	0	0		1491.992111			
Orange (SC)	2028	SBUS	Aggregate	Aggregate	Natural Gas	860.7431203	20823.36815	4.761519927	4761.519927		20823.36815			
Orange (SC)	2028	UBUS	Aggregate	Aggregate	Gasoline	257.9047648	42546.43435	3.26298699	3262.98699	40597.29871	42546.43435	154320.2198	3.80	UBUS
Orange (SC)	2028	UBUS	Aggregate	Aggregate	Electricity	1.844789609	95.88250074	0	0		95.88250074			
Orange (SC)	2028	UBUS	Aggregate	Aggregate	Natural Gas	583.3946385	111677.9029	37.33431172	37334.31172		111677.9029			