AIR QUALITY AND GREENHOUSE GAS STUDY

FOR THE

57037 TWENTYNINE PALMS HIGHWAY PROJECT

57037 Twentynine Palms Highway, Yucca Valley

PREPARED FOR:

Avant Real Estate
4490 Ayers Avenue
Vernon, CA 90058

PREPARED BY:

Meridian Consultants

860 Hampshire Road, Suite P
Westlake Village, CA 91361

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EXECUTIVE SUMMARY

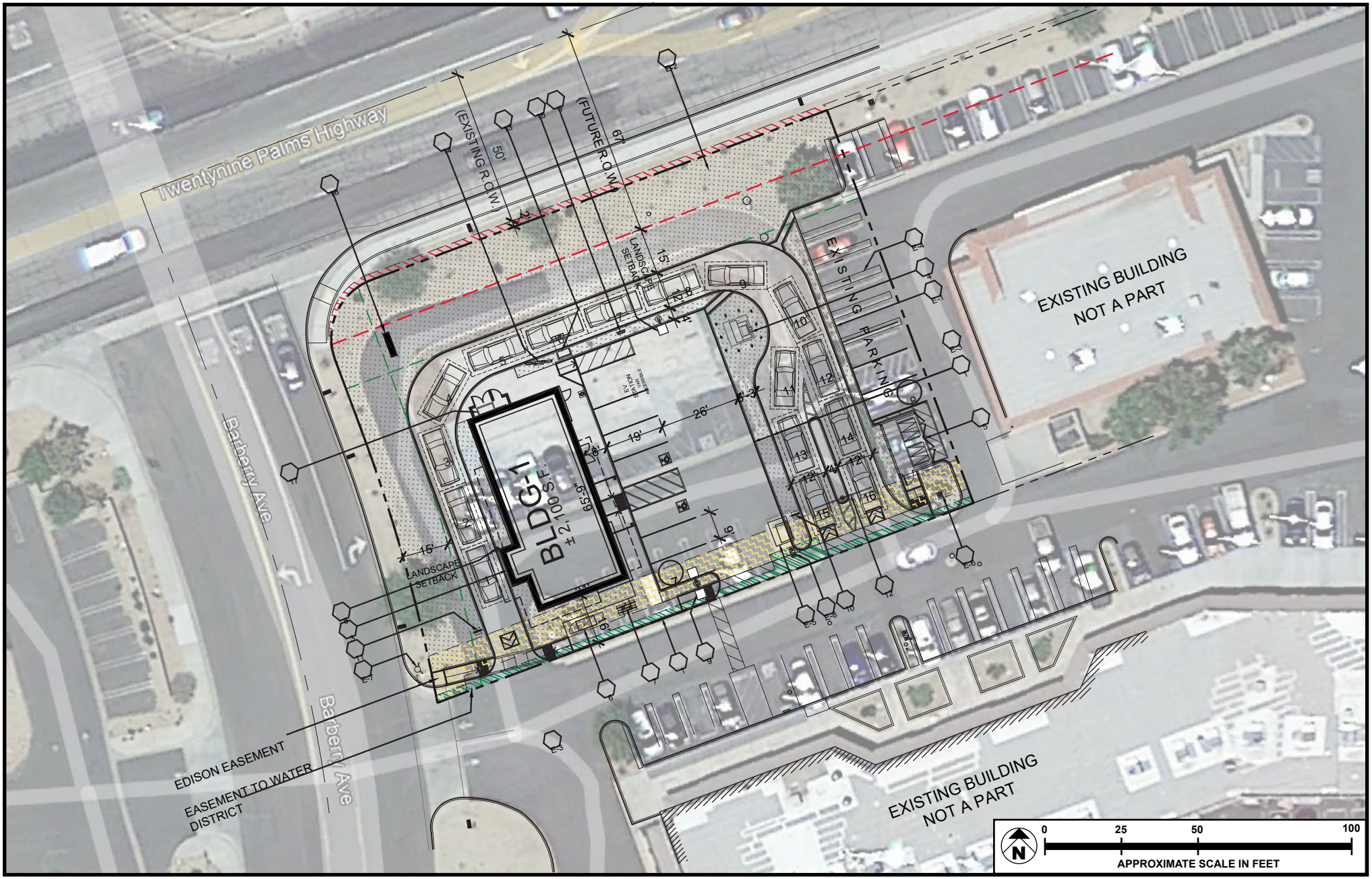
The 23,906 gross square foot (0.55 acre) is located within an existing shopping center at 57037 Twentynine Palms Highway within the Town of Yucca Valley, as shown in **Figure 1: Project Site Location**. The Project site is currently vacant with an existing building concrete pad. The Project site is bounded by Twentynine Palms Highway to the north, Yucca Trail to the south and Barberry Avenue to the west. The Applicant proposes the development of a 2,100 square-foot coffee facility which will include a drive-thru lane. The drive-thru would include a two-lane approach merging into a single lane before the menu board. The proposed development will also include 7 new parking spaces and 8 existing parking spaces for a total of 15 parking spaces along with a trash enclosure.

In accordance with requirements under the California Environmental Quality Act (CEQA), this Air Quality Study provides an estimate of emissions for the Project and the potential impacts from associated construction and operation activities. The report includes the categories and types of emission sources resulting from the Project, the calculation procedures used in the analysis, and any assumptions or limitations. This report summarizes the potential for the Project to conflict with an applicable air quality plan; violate an air quality standard or threshold; result in a cumulatively net increase of criteria pollutant emissions; expose sensitive receptors to substantial pollutant concentrations; or create objectionable odors affecting a substantial number of people.

The findings of the analyses are as follows:

- The Project would be consistent with air quality policies set forth by the Mojave Desert Air Quality Management District (MDAQMD) and the Air Quality Management Plan.
- Construction and operational emissions would not contribute to short- or long-term emissions that would increase the carcinogenic effects on sensitive receptors. Emissions associated with operation would not exceed the MDAQMD-recommended thresholds. Thus, the Project would not result in a regional violation of applicable air quality standards or jeopardize the timely attainment of such standards in the Mojave Desert Air Basin.
- Operation of the Project will not employ toxic air contaminant–emitting processes. No substantial pollutant concentration would be generated.
- Project construction and operations would not result in significant levels of odors.
- The Project would result in less than significant cumulative air quality impacts during construction and operation of the Project.

Based upon a worst-case assessment, the Project does not result in significant impacts to surrounding land uses from air quality and greenhouse gas.



SOURCE: MMA Architecture - Jan 2023; Google Earth - 2023

FIGURE **1**

Meridian Consultants

Project Site Location

341-003-23

REGULATORY SETTING

In California, jurisdiction over air quality management, enforcement, and planning is divided among 35 geographic regions. Within each region, a local air district is responsible for oversight of air quality monitoring, modeling, permitting, and enforcement to ensure that regulatory violations are avoided wherever possible.

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

The Mojave Desert Air Quality Management District (MDAQMD) is the agency responsible for preparing the air quality management plan (AQMP) for the Mojave Desert Air Basin (MDAB). The MDAQMD has jurisdiction over the desert portion of San Bernardino County and the far eastern end of Riverside County. This region includes the incorporated communities of Adelanto, Apple Valley, Barstow, Blythe, Hesperia, Needles, Twentynine Palms, Victorville, and Yucca Valley. This region also include the National Training Center at Fort Irwin, the Marine Corps Air Ground Combat Center, the Marine Corps Logistics Base, the eastern portion of Edwards Air Force Base, and a portion of the China Lake Naval Air Weapons Station.

MDAQMD is responsible for limiting the number of emissions generated throughout the air basins by various stationary, area, and mobile sources. Specific rules and regulations have been adopted by the MDAQMD Governing Board that identify specific pollution-reduction measures that must be implemented in association with various uses and activities. These rules regulate not only the emissions of the federal and State criteria pollutants, but also toxic air contaminants (TACs) and acutely hazardous materials. The rules are also subject to ongoing refinement by MDAQMD. Among the MDAQMD rules applicable to the Project are Rule 403 (Fugitive Dust).

Rule 403 (Fugitive Dust). This rule requires fugitive dust sources to implement BACMs for all sources and prohibits all forms of visible particulate matter from crossing any property line. BACMs may include application of water or chemical stabilizers to disturbed soils covering haul vehicles; restricting vehicle speeds on unpaved roads to 15 miles per hour (mph); sweeping loose dirt from paved site-access roadways; cessation of construction activity when winds exceed 25 mph; and establishing a permanent ground cover on finished sites. MDAQMD Rule 403 is intended to reduce PM10 emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust (see also Rule 1186).

AIR QUALITY

Regional Air Quality

USEPA is the federal agency responsible for overseeing the country's air quality and setting the NAAQS for the CAPs. The NAAQS were devised based on extensive modeling and monitoring of air pollution across the country; they are designed to protect public health and prevent the formation of atmospheric ozone. Air quality of a region is considered to be in attainment of the NAAQS if the measured ambient air pollutant levels do not exceed the applicable concentration threshold.

As noted previously, CARB is the State agency responsible for setting the CAAQS. Air quality of a region is considered to be in attainment of the CAAQS if the measured ambient air pollutant levels for O3, CO, NO2, SO2, PM10, PM2.5, and Pb are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive 3-year period.

The nearest air monitoring station closest to the project is the Joshua Tree National Monument Monitoring Station. Because this station only monitors ozone (O3), data from the Joshua Tree National Park – Pinto Wells was obtained. Data from these stations are summarized in **Table 1: Air Quality Monitoring Summary**. The data shows that the area regularly exceeds the state and federal eight-hour and one-hour ozone standards. The state PM2.5 standard is regularly exceeded. The NO2 standards have not been exceeded in the last 3 years in the project vicinity.

TABLE 1 AIR QUALITY MONITORING SUMMARY				
Air Pollutant	**Average Time (Units)**	**2019**	**2020**	**2021**
Ozone (O3)	State Max 1 hour (ppm)	0.105	0.111	0.106
	Days > CAAQS threshold (0.09 ppm)	2	4	3
	National Max 8 hour (ppm)	0.088	0.199	0.093
	Days > NAAQS threshold (0.075 ppm)	39	34	37
	State Max 8 hour (ppm)	0.088	0.099	0.095
	Days > CAAQS threshold (0.07 ppm)	40	39	42
Carbon monoxide (CO)		—	—	—
Nitrogen dioxide (NO2)	National Max 1 hour (ppm)	0.056	0.059	0.056
	Days > NAAQS threshold (0.100 ppm)	0	0	0
	State Max 1 hour (ppm)	0.056	0.059	0.056
	Days > CAAQS threshold (0.18 ppm)	0	0	0
Respirable particulate matter (PM10)	National Max (µg/m3)	170.0	261.4	591.6
	National Annual Average (µg/m3)	27.2	34.0	33.9
	Days > NAAQS threshold (35 µg/m3)	2	2	1
	State Max (µg/m3)	--	--	--
	State Annual Average (µg/m3)	--	--	--
Fine particulate matter (PM2.5)	National Max (µg/m3)	17.8	48.4	87.1
	National Annual Average (µg/m3)	7.0	10.4	10.3
	Days > NAAQS threshold (35 µg/m3)	0	4	1
	State Max (µg/m3)	20.0	48.7	87.1
	State Annual Average (µg/m3)	7.0	9.7	10.2

Source: CARB, iADAM: Air Quality Data Statistics.
Note: (—) = Data not available.

USEPA and the CARB designate air basins where AAQS are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." Federal nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. The current attainment designations for the Basin are shown in **Table 2: Mojave Desert Air Basin Attainment Status**. The Basin is currently designated as being in nonattainment at the federal level for O3 and PM10; and at the State level for O3 and PM10.

TABLE 2 MOJAVE DESERT AIR BASIN ATTAINMENT STATUS		
Pollutant	**State Status**	**National Status**
Ozone (O3)	Nonattainment	Nonattainment
Carbon monoxide (CO)	Attainment	Unclassified/Attainment
Nitrogen dioxide (NO2)	Attainment	Unclassified/Attainment
Sulfur dioxide (SO2)	Attainment	Unclassified/Attainment
Respirable particulate matter (PM10)	Nonattainment	Nonattainment
Fine particulate matter (PM2.5)	Attainment	Unclassified/Attainment

Source: California Air Resources Board (CARB) Area Designation Maps / State and National, https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations. Accessed May 2023.

Existing Operational Emission

As mentioned previously, the Project site is currently vacant with an existing building concrete pad. Therefore, there are no existing operational emissions that are generated from the Project site.

Sensitive Receptors

MDAQMD considers a sensitive receptor to be a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant. Sensitive receptors are identified near sources of air pollution to determine the potential for health hazards. Locations evaluated for exposure to air pollution include but are not limited to residences, schools, hospitals, and convalescent facilities. The parcels to the north along Antelope Trail and to the south across Yucca Trail include residential uses.

GREENHOUSE GAS

Yucca Valley General Plan Update EIR

A greenhouse gas evaluation was included in the Town of Yucca Valley General Plan EIR, which was prepared in accordance with the requirements of CEQA to determine if significant greenhouse gas impacts are likely to occur in conjunction with future development that would be accommodated by the General Plan Update. The emissions inventory for 2012 of the Town of Yucca Valley was conducted based on the land uses shown in **Table 3: Town of Yucca Valley Greenhouse Gas Emissions Inventory (2012)**.

TABLE 3
TOWN OF YUCCA VALLEY GREENHOUSE GAS EMISSIONS INVENTORY (2012)

	2012 GHG Emissions	
Sector	MTCO2e/year	Percent of Total
Transportation[1]	157,248	67%
Energy – Residential[2]	44,538	19%
Energy – Nonresidential[2]	25,414	11%
Waste[3]	3,120	1%
Water/Wastewater[4]	4,593	2%
Other – Off-road Equipment[5]	1,472	<1%
Existing Community-wide Emissions Total	236,385	100%
MTCO2e/Service Population (SP)[6]	7.9	N/A

Source: Town of Yucca Valley General Plan EIR, 2013, Table 5.6-4.

Notes: Emissions may not total 100% due to rounding.

[1] EMFAC2011. Model runs were based on daily per capita VMT data provided by Fehr & Peers.

[2] Natural gas and electricity use were modeled using data provided by SoCalGas and SCE.

[3] WARM model, version 12, based on waste disposal (municipal solid waste and alternative daily cover) and waste characterization data from CalRecycle (CalRecycle 2013). Modeling assumes a 75 percent reduction in fugitive GHG emissions from the landfill's gas capture system.

[4] LGOP, version 1.1, based on the HDWD's 2010 UWMP.

[5] OFFROAD2007 for San Bernardino County proportioned based on the Town of Yucca Valley as a percentage of San Bernardino County based on data from the US Census. Area sources exclude emissions from fireplaces and consumer products in the Town.

[6] Based on a service population of existing: 29,945 people (22,464 residents and 7,481 employees).

The community-wide GHG emissions inventory at buildout of the General Plan Update compared to Year 2012 conditions is included in **Table 4: General Plan Buildout (Post-2035) Community-Wide GHG Emissions Inventory for the Town of Yucca Valley**. The adjusted business as usual (ABAU) Inventory includes reductions from federal and state measures identified in CARB's Scoping Plan, including the Pavley fuel efficiency standards, Low Carbon Fuel Standard (LCFS) for fuel use (transportation and off-road), and a reduction in carbon intensity from electricity use. For buildout, the Scoping Plan measures account for a reduction of 173,097 MTCO2e compared to BAU (23 percent reduction in GHG emissions).

Buildout of the Town is not linked to a development timeline and is based on reasonable worst-case buildout of the parcels as identified in the land use plan. Based on the historic rate of growth in the

Town[1], the amount of development that the Town of Yucca Valley can accommodate in the land use plan is not likely to occur within the next 50 years, let alone within the 20-year planning horizon identified by SCAG. As a result, compared to the Town's existing emissions inventory, the Town will experience a substantial increase of 352,267 MTCO2e of GHG emissions at buildout. Consequently, GHG emissions in the Town would exceed 100,000 tons (90,718 MTCO2e/year) by full buildout of the General Plan Update.

As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology. Impacts from GHG emissions within the Town of Yucca Valley would be significant for long-term growth anticipated under the General Plan Update.

TABLE 4
GENERAL PLAN BUILDOUT (POST-2035) COMMUNITY-WIDE GHG EMISSIONS INVENTORY FOR THE TOWN OF YUCCA VALLEY

Pollutant	2012 MTCO2e	Buildout BAU MTCO2e	Buildout ABAU MTCO2e	ABAU Change from 2012 MTCO2e	ABAU Change from 2020 BAU MTCO2e
Transportation	157,248	488,557	356,195	198,947	-132,362
Energy - Residential	44,538	128,008	110,303	65,765	-17,705
Energy – Nonresidential	25,414	117,919	98,019	72,606	-19,900
Waste	3,120	10,367	10,367	7,247	0
Water/Wastewater	4,593	14,972	12,035	7,442	-2,937
Other – Off-road Equipment	1,472	1,926	1,733	261	-193
Total Community Emissions	**236,385**	**761,750**	**588,653**	**352,267**	**-173,097**
MDAQMD Threshold	N/A	N/A	N/A	90,718 MTCO2e/year	N/A
Exceeds MDAQMD Threshold	N/A	N/A	N/A	**Yes**	N/A
MTCO2e/Service Population (SP)	7.9	7.6	5.8	N/A	N/A

Source: Town of Yucca Valley General Plan Update EIR, 2012, Table 5.6-8.

Notes: Emissions forecast based on changes in population (residential energy), employment (nonresidential energy), or service population (Town energy, waste, water/wastewater, transportation.

ABAU includes reductions identified in the Scoping Plan associated with Transportation (Pavley + LCFS), Energy & Water/Wastewater (33% RPS), and other (LCFS). The current inventory does not account for reductions in building energy use from Title 24 cycle updates.

San Bernardino Regional Greenhouse Gas Reduction Plan

Yucca Valley selected a goal to reduce its community GHG emissions to a level that is 40 percent below its 2020 GHG emissions level by 2030. The Town will meet and exceed this goal through a combination of state (approximately 80 percent) and local (approximately 20 percent) efforts. The Pavley vehicle standards, the state's low carbon fuel standard, the RPS and other state measures will reduce GHG emissions in Yucca Valley's on-road solid waste and building energy sectors in 2030. An additional

[1] According to the U.S. Census and California Department of Finance (DOF) population counts for the Town of Yucca Valley, the Town has experienced an average annual growth rate of 1.82 percent since 2000.

reduction of 22,158 MTCO2e will be achieved primarily through the following local measures, in order of reductions achieved:

- Waste Diversion and Reduction (Waste-2);
- Solar Installation for Existing Commercial/Industrial Facilities (Energy-8);
- and Solar Installation for Existing Housing (Energy-7).

Yucca Valley's reduction plan has the greatest impact on GHG emissions in the on-road transportation, waste, and building energy sectors. **Table 5: Emission Reductions by Sector for Yucca Valley**, summarizes the 2016 inventory, 2030 BAU forecast and GHG reduction ("Reduction Plan") results by sector. It shows the percent reduction in each sector's emissions in 2030 and demonstrates that Yucca Valley exceed its emissions reduction goal.

TABLE 5
EMISSION REDUCTIONS BY SECTOR FOR YUCCA VALLEY

Pollutant	2016 MTCO2e	2030 BAU MTCO2e	2030 Reductions MTCO2e	2030 Emissions with Reduction Plan MTCO2e	Reduction (percent)
Building Energy	46,334	53,799	34,850	18,949	64.8%
On-Road Transportation	78,565	88,250	28,801	59,449	32.6%
Off-Road Equipment	2,386	3,199	72	3,127	2.3%
Waste	42,706	46,694	35,034	11,660	75.0%
Agriculture	0	0	0	0	N/A
Wastewater Treatment	2,347	735	0	735	0.0%
Water Conveyance	**374**	**414**	**79**	**334**	**19.2%**
GHG Performance Standard[1]	-	-	-	-	-
Total	**172,732**	**193,090**	**98,836**	**94,254**	**51.2%**
Goal	-	-	-	**106,543**	-
Goal Met?	-			**Yes**	-
Reductions Beyond Goal	-	-	-	**12,289**	-
Per-Capita Emissions	-	-	-	**-**	-
Per-Job Emissions	-	-	-	**-**	-
Excluded Emissions: Stationary Sources	-	-	-	**-**	-

Notes:

Values may not sum due to rounding.

Dashes indicated no value or not applicable.

[1] The GHG Performance Standard for New Development is not a sector of the inventory, but it contributes toward the City's reduction goal by promoting reductions in multiple sectors.

CONSTRUCTION

Construction of the Project has the potential to generate temporary criteria pollutant emissions through the use of heavy-duty construction equipment and through vehicle trips generated from workers and haul trucks traveling to and from the Project site. Mobile-source emissions, primarily NOx, would result from the use of construction equipment. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The Project would be required comply with MDAQMD Rule 403, which identifies measures to reduce fugitive dust and is required to be implemented at all construction sites located with MDAB. Therefore, the following condition—required to reduce fugitive dust in compliance with MDAQMD Rule 403—was included in CalEEMod as a regulatory compliance measure:

- **Control Efficiency of PM10**. During construction, methods and techniques should be applied to various operations or equipment when appropriate to reduce estimated emissions related to particulate matter. This includes replacing ground cover in disturbed areas as quick as possible, yielding to emission reduction efficiency of 15 – 49 percent.

The emissions are estimated using the CalEEMod software, an emissions inventory software program recommended by MDAQMD. CalEEMod is based on outputs from the CARB off-road emissions model (OFFROAD) and the CARB on-road vehicle emissions model (EMFAC), which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including on- and off-road vehicles. The input values used in this analysis are based on conservative assumptions in CalEEMod, with appropriate, Project-specific adjustments based on equipment types and expected construction activities. These values were then applied to the construction phasing assumptions used in the criteria pollutant analysis to generate criteria pollutant emissions values for each construction activity. Detailed construction equipment lists, construction scheduling, and emissions calculations are provided in **Appendix A**.

OPERATION

Operation of the Project has the potential to generate criteria pollutant emissions through vehicle trips traveling to and from the Project site. In addition, emissions would result from area sources on site, such as natural gas combustion, landscaping equipment, and use of consumer products.

Operational emissions were estimated using the CalEEMod software, which was used to forecast the daily regional emissions from area sources that would occur during long-term Project operations. In calculating mobile-source emissions, trip-length values were based on the distances provided in CalEEMod.

Area-source emissions are based on natural gas (building heating and water heaters), landscaping equipment, and consumer product (including paint) usage rates provided in CalEEMod. Natural gas usage factors in CalEEMod are based on the California Energy Commission's California Commercial End Use Survey data set, which provides energy demand by building type and climate zone.

SIGNIFICANCE THRESHOLDS

The analysis of the proposed project's air quality and greenhouse gas impacts follows the guidance and methodologies recommended in MDAQMD's *CEQA and Federal Conformity Guidelines*. CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality and greenhouse gas. MDAQMD has established thresholds of significance for regional air quality and greenhouse gas emissions for construction activities and project operation.

AIR QUALITY

Significance Criteria

The determination of a project's significance on air quality shall be made considering the factors provided in the MDAQMD's CEQA and Federal Conformity Guidelines. CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. MDAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation.

MDAQMD requires a consistency evaluation with adopted federal and state AQMPs. If a project is deemed consistent with the existing land use plan, it is considered consistent with the AQMP. Zoning changes, specific plans, general plan amendments, and similar land use plan changes that do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to not exceed this threshold.

Regional Emission Thresholds

MDAQMD's significance criteria are shown in **Table 6: MDAQMD Regional Significance Thresholds**. The thresholds in this table are applied to both construction and operational phases of the project regardless of whether they are stationary or mobile sources, resulting in a conservative estimate of air quality impacts of the project. Projects with phases shorter than one year (e.g., construction activities) should be compared to the daily value.

TABLE 6 MDAQMD REGIONAL SIGNIFICANCE THRESHOLDS		
Air Pollutant	**Annual (tons/year)**	**Daily (lbs/day)**
Volatile organic compounds (VOCs)	25	137
Carbon monoxide (CO)	100	548
Nitrogen Oxides (NO_2)	25	137
Sulfur dioxide (SO_2)	25	137
Coarse Inhalable Particulates (PM10)	15	82
Fine Inhalable Particulates (PM2.5)	15	82

Localized Significance Thresholds

MDAQMD also considers projects that cause or contribute to an exceedance of the California or National AAQS to result in significant impacts. Emissions that do not exceed the daily or annual emissions in **Table 6** are considered to result in less than significant localized impacts.

Consistency with Applicable Air Quality Plans

Section 15125 of the State CEQA Guidelines requires an analysis of project consistency with applicable governmental plans and policies. MDAQMD requires a consistency evaluation with adopted federal and state AQMPs. If a project is deemed consistent with the existing land use plan, it is considered consistent with the AQMPs. Zoning changes, specific plans, general plan amendments, and similar land use plan changes that do not increase dwelling unit density, do not increase vehicle miles travelled are also deemed to not exceed this threshold.

GREENHOUSE GAS

MDAQMD's significance criteria are shown in **Table 7: MDAQMD Greenhouse Gas Significance Threshold**. The thresholds identified in this table are applied to both construction and operational phases of the project regardless of whether they are stationary or mobile sources, resulting in a conservative estimate of greenhouse gas impacts of the project. Project with phases shorter than one year (e.g., construction activities) should be compared to the daily value.

TABLE 7
MDAQMD GREENHOUSE GAS SIGNIFICANCE THRESHOLD

Annual (tons/year)	Daily[1] (lbs/day)
100,000 (90,718 MTCO2e/year)	548,000

Source. MDAQMD 2011.

Note: [1] Project with phases shorter than one year, including construction activities, can be compared to the daily value.

The majority of individual projects do not generate sufficient GHG emissions to create significant project-specific environment effects. However, the environmental effects of a project's GHG emission can contribute incrementally to cumulative environmental effects that are significant, contributing to climate change, even if an individual project's environmental effects are limited. The issue of a project's environmental effects and contribution towards climate change typically involves an analysis of whether or not a project's contribution towards climate change is cumulatively considerable. Cumulative considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. For this Project, the most directly adopted regulatory plans to reduce GHG emissions are 2017 Scoping Plan and the San Bernardino County Regional GHG Reduction Plan.

Emissions of air pollutants were estimated for construction and operation of the Project. In California, the California Air Pollution Control Officer's Association recommends the use CalEEMod to calculate and organize emissions data for new development projects. CalEEMod is a program that relies on project-specific information pertaining to geographic setting, utility service provision, construction scheduling and equipment inventory, and operational design features to generate estimates of air pollutant and GHG emissions.

Table 8: Project Construction Schedule provides the dates and durations of each of the activities that will take place during construction, as well as a brief description of the scope of work. Future dates represent approximations based on the general Project timeline and are subject to change pending unpredictable circumstances that may arise.

TABLE 8
PROJECT CONSTRUCTION SCHEDULE

Construction Activity	Approximate Start Date	Approximate End Date	Duration (Days)	Description
Grading	2/28/2024	3/12/2024	10	Grading of the Project site and export of 50 cubic yards of soil
Building Construction	3/13/2024	9/22/2024	138	Construction of Proposed Project
Paving	9/17/2024	9/23/2024	5	Paving of asphalt surfaces
Architectural Coating	9/17/2024	9/23/2024	5	Application of architectural coatings to building materials

*Note: Refer to **Appendix A: CalEEMod Air Quality Emission Output Files**.*

Construction

An assessment of air pollutant emissions was prepared utilizing the construction schedule in **Table 8**. **Table 9: Project Construction Diesel Equipment Inventory** displays the construction equipment required for each activity described in **Table 8**. Under regulatory compliance measures in CalEEMod, it was assumed that all construction activities would adhere to MDAQMD Rule 403 (Fugitive Dust). Additionally, regulatory compliance measures not modeled would require all heavy-duty diesel equipment engines meet minimum Tier 3 standards in accordance with CARB fleet requirements.

TABLE 9 PROJECT CONSTRUCTION DIESEL EQUIPMENT INVENTORY				
Phase	Off-Road Equipment Type	Amount	Daily Hours	Horsepower [HP] (Load Factor)
Grading	Graders	1	8	148 (0.41)
	Rubber Tired Dozers	1	8	367 (0.40)
	Tractors/Loaders/Backhoes	1	8	84 (0.37)
Building Construction	Cranes	1	4	367 (0.29)
	Forklifts	2	6	82 (0.20)
	Tractors/Loaders/Backhoes	2	8	84 (0.37)
Paving	Cement and Mortar Mixers	4	6	10 (0.56)
	Pavers	1	6	81 (0.42)
	Rollers	1	7	36 (0.38)
	Tractors/Loaders/Backhoes	1	7	84 (0.37)
Architectural Coating	Air Compressors	1	6	37 (0.48)

*Refer to **Appendix A: CalEEMod Air Quality Emission Output Files**, for equipment inventory information.*

AIR QUALITY

Maximum daily emissions of air pollutants during construction of the Project were calculated using CalEEMod. **Table 10: Maximum Construction Emissions** identifies daily emissions that are estimated for peak construction days for each construction year. Based on the modeling, construction of the Project would not exceed regional VOC, NOx, CO, SOx, PM10, and PM2.5 concentration thresholds. All criteria air pollutants would be below MDAQMD construction thresholds. As such, construction of the Project would not generate any significant environmental impacts associated with air quality compliance.

TABLE 10 MAXIMUM CONSTRUCTION EMISSIONS						
	VOC	NOx	CO	SOx	PM10	PM2.5
Source	pounds/day					
Maximum	3.7	11.1	15.1	<0.1	2.7	1.5
MDAQMD Mass Daily Threshold	137	137	548	137	82	82
Threshold exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: CO = carbon monoxide; NOx = nitrogen oxides; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns; SOx = sulfur oxides; VOC = volatile organic compounds.

*Refer to **Appendix A: CalEEMod Air Quality Emission Output Files**.*

Operation

Operational emissions would result primarily from passenger vehicles traveling to and from the Project site. As mentioned previously, the proposed development includes a 2,100 square foot coffee facility. The results presented in **Table 11: Maximum Operational Emissions** are compared to the MDAQMD-established operational significance thresholds. As shown in **Table 11**, the operational emissions would not exceed the regional VOC, NOx, CO, SOx, PM10, and PM2.5 concentration thresholds. Additionally, the operational emissions provided below would be further reduced when taking into account trip reductions from these public transit options located within the Project vicinity. As such, operation of the Project would not generate any significant environmental impacts associated with air quality compliance.

TABLE 11
MAXIMUM OPERATIONAL EMISSIONS

Source	VOC	NOx	CO	SOx	PM10	PM2.5
	pounds/day					
Mobile	7.3	8.6	80.0	<0.1	6.1	1.2
Area	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total	**8.0**	**7.3**	**80.0**	**<0.1**	**6.1**	**1.2**
MDAQMD Mass Daily Threshold	137	137	548	137	82	82
Threshold exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: Totals in table may not appear to add exactly due to rounding in the computer model calculations.
CO = carbon monoxide; NOx = nitrogen oxides; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns; SOx = sulfur oxides; VOC = volatile organic compounds.
*Refer to **Appendix A: CalEEMod Air Quality Emission Output Files**.*

Toxic Air Contaminants

Project construction would result in short-term emissions of diesel particulate matter, which is a TAC. Off-road heavy-duty diesel equipment would emit diesel particulate matter over the course of the construction period. As mentioned previously, residential uses are located adjacent to the site to the north along Antelope Trail and to the south across Yucca Trail. Localized diesel particulate emissions (strongly correlated with PM2.5 emissions) would be minimal and would be substantially below localized thresholds, as shown in **Table 10**. Project compliance with the CARB anti-idling measure, which limits idling to no more than 5 minutes at any location for diesel-fueled commercial vehicles, would further minimize diesel particulate matter emissions in the Project area.

Project operations would generate only minor amounts of diesel emissions from delivery trucks and incidental maintenance activities. Trucks would comply with the applicable provisions of the CARB Truck and Bus regulation to minimize and reduce emission from existing diesel trucks. In addition, Project operations would only result in minimal emissions of air toxics from maintenance or other ongoing activities, such as from the use of architectural coatings or household cleaning products. As a result, toxic or carcinogenic air pollutants are not expected to occur in any meaningful amounts in conjunction with operation of the proposed uses within the Project site. Based on the uses expected on the Project site, potential long-term operational impacts associated with the release of TACs would be minimal and would not be expected to exceed the MDAQMD thresholds of significance.

GREENHOUSE GAS

The forecasting of construction-related GHG emissions requires assumptions regarding the timing of construction as the emission factors for some of the Project's construction-related GHG emission sources decline over time. As shown in **Table 12: Construction GHG Emissions**, total construction emissions would be 94.7 metric tons of CO2e (MTCO2e). One-time, short-term emissions are converted to average annual emissions by amortizing them over the service life of a building. For buildings in general, it is reasonable to look at a 30-year time frame because this is a typical interval before a new building requires its first major renovation.[2] As shown in **Table 12**, when amortized over an average 30-year Project lifetime, average annual construction emissions from the Project would be 3.2 MTCO2e per year.

2 International Energy Agency (IEA), Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings, IEA Information Paper (2008).

TABLE 12 CONSTRUCTION GHG EMISSIONS	
Construction Phase	**MTCO2e/Year**
2024	94.7
30-Year Annual Amortized Rate	**3.2**

*Refer to **Appendix A** for CalEEMod Output Sheets.*
Notes: GHG = greenhouse gas; MTCO2e = metric tons of carbon dioxide equivalent.

Operation of the Project has the potential to generate GHG emissions through vehicle trips traveling to and from the Project site. In addition, emissions would result from area sources on site, such as natural gas combustion, landscaping equipment, and use of consumer products. Emissions from mobile and area sources and indirect emissions from energy and water use, wastewater, as well as waste management would occur every year after full development of the uses allowed by the Project. Operational Project emissions from area sources, energy sources, mobile sources, solid waste, and water and wastewater conveyance are shown in **Table 13: Operational GHG Emissions** below. As shown in **Table 13**, annual operational emissions from the Project would be 1,281 MTCO2e per year, below the MDAQMD GHG significance thresholds of 90,718 MTCO2e per year. As such, impacts related to greenhouse gas emissions would not be considered significant.

TABLE 13 OPERATIONAL GHG EMISSIONS	
Source	**Unmitigated MTCO2e per year**
Construction (amortized)	3
Mobile	1,237
Energy	19
Natural Gas	13
Area	0.03
Water	2
Waste	7
Total	**1,281**

*Refer to **Appendix A** for CalEEMod Output Sheets.*
Abbreviation: MTCO2e = metric tons of carbon dioxide emissions.

Consistency with Applicable Plans and Policies

The proposed Project is required to comply with Title 13-Section 2449 of the CCR and the CalRecycle Sustainable (Green) Building Program regulations, which include implementation of standard control measures for equipment emissions. Adherence to these regulations, including the implementation of Best Available Control Measures (BACMs) is a standard requirement for any construction or ground-disturbance activity occurring within the Basin.

BACMs include, but are not limited to, requirements that the project proponent utilize only low sulfur fuel (i.e., having a sulfur content of 15 ppm by weight or less); ensure off-road vehicles (i.e., self-propelled diesel fueled vehicles 25 horsepower and up that were not designed to be driven on road) limit vehicle idling to five minutes or less; register and label vehicles in accordance with the ARB Diesel Off-Road Online Reporting System; restrict the inclusion of older vehicles into fleets; and retire, replace, or repower older engines or install Verified Diesel Emission Control Strategies (i.e. exhaust retrofits). Additionally, the construction contractor will recycle/reuse at least 50 percent of the construction material (including, but not limited to, proposed aggregate base, soil, mulch, vegetation, concrete, lumber, metal, and cardboard) and use "Green Building Materials," such as those materials that are rapidly renewable or resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project, in accordance with CalRecycle regulations.

Long-term operational emissions typically include emissions from use of consumer products, energy and water usage, vehicles and land use emissions.

The Project is committed to meeting the requirements of the CALGreen Code by incorporating strategies such as low-flow toilets, low-flow faucets and other energy and resource conservation measures. The Project would comply with applicable energy, water, and waste efficiency measures specified in the Title 24 Building Energy Efficiency Standards and CALGreen standards.

Senate Bill 32 and 2017 Scoping Plan

There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan is SB 32, the follow up to AB 32, the California Global Warming Solutions Act of 2006. The goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. CARB's 2017 Scoping Plan, which outlines a framework to achieve SB 32's 2030 target, emphasizes innovation, adoption of existing technology, and strategic investment to support its strategies for GHG emissions reductions. Statewide plans and regulations in support of these strategies, such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing fraction of electricity to be generated from renewable sources, are being implemented at the statewide level; as such, compliance at a project-level would occur as implementation continues statewide. Therefore, the Project would be consistent with SB 32 and the 2017 Scoping Plan.

San Bernardino County Regional GHG Reduction Plan

Table 14: San Bernardino County Regional GHG Reduction Plan Consistency summarizes the Project's consistency with applicable policies and programs. As shown, the Project would be consistent with the applicable policies and programs contained in the GHG Reduction Plan.

TABLE 14
SAN BERNARDINO COUNTY REGIONAL GHG REDUCTION PLAN CONSISTENCY

Action	Project Consistency
Energy-1. Building Energy Efficiency	
• Policy H2-2: Encourage new development and rehabilitation efforts to maximize energy efficiency through architectural and landscape design and the use of renewable resources and conservation	**Consistent**. The Project would be designed and operated to meet the applicable requirements of CALGreen and the Green Building Code. All landscape plans and installations would adhere to Design Guidelines, Codes and Regulations.
Energy-2. Lighting Efficiency	
• Policy H2-2: Encourage new development and rehabilitation efforts to maximize energy efficiency through architectural and landscape design and the use of renewable resources and conservation.	**Consistent.** The Project would be designed and operated to meet the applicable requirements of CALGreen and the Green Building Code.
Waste-2. Waste Diversion and Reduction	
• Policy OSC 9-4: Encourage the reduction and recycling of household and business waste.	**Consistent**. The Project would be subject to the requirements of the statewide commercial recycling program, which establishes a statewide goal of diverting at least 75 percent of solid waste from landfills by 2020. Compliance with existing State programs would achieve consistency with this measure.
• Policy OSC 9-5: Ensure that any planned construction, demolition, addition, alteration, repair, remodel, landscaping, or grading projects diverts all reusable, salvageable, and recyclable debris from landfill disposal.	**Consistent**. The Project would be subject to the requirements of the statewide commercial recycling program, which establishes a statewide goal of diverting at least 75 percent of solid waste from landfills by 2020. Compliance with existing State programs would achieve consistency with this measure.

Cumulative Impacts

Development of the Project in conjunction with the related projects near the Project site would result in an increase in construction and operational emissions in an already urbanized area of the Town. However, cumulative air quality impacts from construction, based on MDAQMD guidelines, are not analyzed in a manner similar to project-specific air quality impacts. Instead, MDAQMD recommends that a project's potential contribution to cumulative impacts should be assessed utilizing the same significance criteria as those for project-specific impacts. According to MDAQMD, individual development projects that generate construction or operational emissions that exceed MDAQMD recommended daily regional or localized thresholds for project-specific impacts, would also cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment.

With the implementation of regulatory compliance measures such as Rule 403 (Fugitive Dust), the Project's construction and operational emissions are not expected to significantly contribute to cumulative emissions for CO, NOx, PM10, and PM2.5. As such, the Project's contribution to cumulative air quality emissions in combination with the related projects would not be cumulatively considerable.

As discussed previously, the Project would not jeopardize the attainment of air quality standards in the AQMP for the Basin. As such, the Project would not have a cumulatively considerable contribution to a potential conflict with or obstruction of the implementation of the AQMP regional reduction plans.

CERTIFICATION

The contents of this Air Quality and Greenhouse Gas Study represent an accurate depiction of the air quality environment and impacts associated with 57037 Twentynine Palms Highway Project. The information contained in this study is based on the best available information at the time of preparation. If you have any questions, please contact me directly at (818) 415-7274.

Christ Kirikian
Principal | Director of Air Quality & Acoustics
ckirikian@meridianconsultantsllc.com

APPENDIX A

CalEEMod Air Quality Emission Output Files

57037 Twenty Nine Palms Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	57037 Twenty Nine Palms
Construction Start Date	2/24/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	14.4
Location	57037 Twentynine Palms Highway, Yucca Valley, CA 92284, USA
County	San Bernardino-Mojave Desert
City	Yucca Valley
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5142
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.11

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

Fast Food Restaurant with Drive Thru	2.00	1000sqft	0.05	2,100	5,977	—	—	—
Parking Lot	15.0	Space	0.13	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.58	3.68	11.1	15.1	0.02	0.50	0.25	0.74	0.46	0.06	0.52	—	2,549	2,549	0.10	0.03	1.11	2,562
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.46	1.23	11.5	11.2	0.02	0.53	2.18	2.72	0.49	1.03	1.52	—	1,861	1,861	0.07	0.03	0.01	1,870
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.31	0.29	2.51	3.08	0.01	0.11	0.07	0.18	0.11	0.03	0.14	—	570	570	0.02	0.01	0.03	572
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.06	0.05	0.46	0.56	< 0.005	0.02	0.01	0.03	0.02	0.01	0.02	—	94.3	94.3	< 0.005	< 0.005	< 0.005	94.7
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshold	—	137	137	548	137	—	—	82.0	—	—	82.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	548	137	—	—	82.0	—	—	82.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.58	3.68	11.1	15.1	0.02	0.50	0.25	0.74	0.46	0.06	0.52	—	2,549	2,549	0.10	0.03	1.11	2,562
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.46	1.23	11.5	11.2	0.02	0.53	2.18	2.72	0.49	1.03	1.52	—	1,861	1,861	0.07	0.03	0.01	1,870
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.31	0.29	2.51	3.08	0.01	0.11	0.07	0.18	0.11	0.03	0.14	—	570	570	0.02	0.01	0.03	572
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.06	0.05	0.46	0.56	< 0.005	0.02	0.01	0.03	0.02	0.01	0.02	—	94.3	94.3	< 0.005	< 0.005	< 0.005	94.7

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.	7.97	7.33	8.61	80.1	0.19	0.15	5.99	6.14	0.14	1.05	1.20	13.6	18,997	19,010	1.95	0.76	73.8	19,361
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.10	6.47	9.30	60.2	0.17	0.15	5.99	6.14	0.14	1.05	1.20	13.6	17,328	17,342	1.97	0.79	5.11	17,632
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.67	4.39	4.48	30.9	0.07	0.07	2.48	2.54	0.06	0.44	0.50	13.6	7,537	7,550	1.70	0.37	15.9	7,720
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.85	0.80	0.82	5.63	0.01	0.01	0.45	0.46	0.01	0.08	0.09	2.25	1,248	1,250	0.28	0.06	2.63	1,278
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	548	137	—	—	82.0	—	—	82.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	548	137	—	—	82.0	—	—	82.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	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	7.95	7.26	8.55	80.0	0.18	0.15	5.99	6.14	0.14	1.05	1.19	—	18,799	18,799	0.58	0.76	70.5	19,110
Area	0.02	0.06	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38
Energy	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	192	192	0.01	< 0.005	—	192
Water	—	—	—	—	—	—	—	—	—	—	—	1.16	5.91	7.08	0.12	< 0.005	—	10.9
Waste	—	—	—	—	—	—	—	—	—	—	—	12.4	0.00	12.4	1.24	0.00	—	43.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.28	3.28
Total	7.97	7.33	8.61	80.1	0.19	0.15	5.99	6.14	0.14	1.05	1.20	13.6	18,997	19,010	1.95	0.76	73.8	19,361
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	7.10	6.42	9.24	60.2	0.17	0.15	5.99	6.14	0.14	1.05	1.19	—	17,130	17,130	0.59	0.79	1.83	17,382
Area	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	192	192	0.01	< 0.005	—	192
Water	—	—	—	—	—	—	—	—	—	—	—	1.16	5.91	7.08	0.12	< 0.005	—	10.9
Waste	—	—	—	—	—	—	—	—	—	—	—	12.4	0.00	12.4	1.24	0.00	—	43.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.28	3.28
Total	7.10	6.47	9.30	60.2	0.17	0.15	5.99	6.14	0.14	1.05	1.20	13.6	17,328	17,342	1.97	0.79	5.11	17,632
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.65	4.33	4.41	30.8	0.07	0.06	2.48	2.54	0.06	0.44	0.49	—	7,339	7,339	0.33	0.37	12.6	7,470
Area	0.01	0.06	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.19	0.19	< 0.005	< 0.005	—	0.19
Energy	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	192	192	0.01	< 0.005	—	192
Water	—	—	—	—	—	—	—	—	—	—	—	1.16	5.91	7.08	0.12	< 0.005	—	10.9
Waste	—	—	—	—	—	—	—	—	—	—	—	12.4	0.00	12.4	1.24	0.00	—	43.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.28	3.28
Total	4.67	4.39	4.48	30.9	0.07	0.07	2.48	2.54	0.06	0.44	0.50	13.6	7,537	7,550	1.70	0.37	15.9	7,720

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.85	0.79	0.81	5.62	0.01	0.01	0.45	0.46	0.01	0.08	0.09	—	1,215	1,215	0.05	0.06	2.08	1,237
Area	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.7	31.7	< 0.005	< 0.005	—	31.9
Water	—	—	—	—	—	—	—	—	—	—	—	0.19	0.98	1.17	0.02	< 0.005	—	1.81
Waste	—	—	—	—	—	—	—	—	—	—	—	2.06	0.00	2.06	0.21	0.00	—	7.19
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.54	0.54
Total	0.85	0.80	0.82	5.63	0.01	0.01	0.45	0.46	0.01	0.08	0.09	2.25	1,248	1,250	0.28	0.06	2.63	1,278

3. Construction Emissions Details

3.1. Grading (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.41	1.19	11.4	10.7	0.02	0.53	—	0.53	0.49	—	0.49	—	1,713	1,713	0.07	0.01	—	1,719
Dust From Material Movemen:	—	—	—	—	—	—	2.07	2.07	—	1.00	1.00	—	—	—	—	—	—	—
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	0.04	0.03	0.31	0.29	< 0.005	0.01	—	0.01	0.01	—	0.01	—	46.9	46.9	< 0.005	< 0.005	—	47.1
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
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	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.77	7.77	< 0.005	< 0.005	—	7.80
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
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	0.04	0.04	0.05	0.45	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.9	98.9	< 0.005	< 0.005	0.01	100
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	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.8	48.8	< 0.005	0.01	< 0.005	51.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.79	2.79	< 0.005	< 0.005	0.01	2.83
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.34	1.34	< 0.005	< 0.005	< 0.005	1.40
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.47
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.22	0.22	< 0.005	< 0.005	< 0.005	0.23

3.3. 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	0.67	0.56	5.60	6.98	0.01	0.26	—	0.26	0.23	—	0.23	—	1,305	1,305	0.05	0.01	—	1,309
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	0.67	0.56	5.60	6.98	0.01	0.26	—	0.26	0.23	—	0.23	—	1,305	1,305	0.05	0.01	—	1,309
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	0.25	0.21	2.12	2.64	< 0.005	0.10	—	0.10	0.09	—	0.09	—	493	493	0.02	< 0.005	—	495
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	0.05	0.04	0.39	0.48	< 0.005	0.02	—	0.02	0.02	—	0.02	—	81.7	81.7	< 0.005	< 0.005	—	82.0

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	0.01	0.01	< 0.005	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	0.05	13.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.03	11.6
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	< 0.005	< 0.005	0.01	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.6	11.6	< 0.005	< 0.005	< 0.005	11.8
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	< 0.005	11.6
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.53	4.53	< 0.005	< 0.005	0.01	4.59
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.23	4.23	< 0.005	< 0.005	< 0.005	4.40
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.75	0.75	< 0.005	< 0.005	< 0.005	0.76
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.70	0.70	< 0.005	< 0.005	< 0.005	0.73
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

3.5. 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	0.63	0.53	4.52	5.32	0.01	0.21	—	0.21	0.19	—	0.19	—	823	823	0.03	0.01	—	826
Paving	—	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.87	1.87	< 0.005	< 0.005	—	1.87
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.11	0.10	0.09	1.58	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	261	261	0.01	0.01	1.02	265
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.25	3.25	< 0.005	< 0.005	0.01	3.30
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.55
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

3.7. 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	0.17	0.14	0.91	1.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	2.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.83	1.83	< 0.005	< 0.005	—	1.84
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.63	2.63	< 0.005	< 0.005	0.01	2.67
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	7.95	7.26	8.55	80.0	0.18	0.15	5.99	6.14	0.14	1.05	1.19	—	18,799	18,799	0.58	0.76	70.5	19,110
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	7.95	7.26	8.55	80.0	0.18	0.15	5.99	6.14	0.14	1.05	1.19	—	18,799	18,799	0.58	0.76	70.5	19,110
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	7.10	6.42	9.24	60.2	0.17	0.15	5.99	6.14	0.14	1.05	1.19	—	17,130	17,130	0.59	0.79	1.83	17,382
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	7.10	6.42	9.24	60.2	0.17	0.15	5.99	6.14	0.14	1.05	1.19	—	17,130	17,130	0.59	0.79	1.83	17,382

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	0.85	0.79	0.81	5.62	0.01	0.01	0.45	0.46	0.01	0.08	0.09	—	1,215	1,215	0.05	0.06	2.08	1,237
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.85	0.79	0.81	5.62	0.01	0.01	0.45	0.46	0.01	0.08	0.09	—	1,215	1,215	0.05	0.06	2.08	1,237

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	107	107	0.01	< 0.005	—	108
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	7.51	7.51	< 0.005	< 0.005	—	7.54
Total	—	—	—	—	—	—	—	—	—	—	—	—	115	115	0.01	< 0.005	—	115
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	107	107	0.01	< 0.005	—	108

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	7.51	7.51	< 0.005	< 0.005	—	7.54
Total	—	—	—	—	—	—	—	—	—	—	—	—	115	115	0.01	< 0.005	—	115
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	17.8	17.8	< 0.005	< 0.005	—	17.8
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	1.24	1.24	< 0.005	< 0.005	—	1.25
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.0	19.0	< 0.005	< 0.005	—	19.1

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.9	76.9	0.01	< 0.005	—	77.1
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.9	76.9	0.01	< 0.005	—	77.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Fast Food Restaurant with Drive Thru	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.9	76.9	0.01	< 0.005	—	77.1
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.9	76.9	0.01	< 0.005	—	77.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.7	12.7	< 0.005	< 0.005	—	12.8
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.7	12.7	< 0.005	< 0.005	—	12.8

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.02	0.01	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38
Total	0.02	0.06	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03
Total	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	1.16	5.91	7.08	0.12	< 0.005	—	10.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.16	5.91	7.08	0.12	< 0.005	—	10.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	1.16	5.91	7.08	0.12	< 0.005	—	10.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.16	5.91	7.08	0.12	< 0.005	—	10.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	0.19	0.98	1.17	0.02	< 0.005	—	1.81
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.19	0.98	1.17	0.02	< 0.005	—	1.81

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	12.4	0.00	12.4	1.24	0.00	—	43.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	12.4	0.00	12.4	1.24	0.00	—	43.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	12.4	0.00	12.4	1.24	0.00	—	43.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	12.4	0.00	12.4	1.24	0.00	—	43.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	2.06	0.00	2.06	0.21	0.00	—	7.19
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	2.06	0.00	2.06	0.21	0.00	—	7.19

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.28	3.28
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.28	3.28
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.28	3.28
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.28	3.28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.54	0.54
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.54	0.54

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Grading	Grading	2/28/2024	3/12/2024	5.00	10.0	—
Building Construction	Building Construction	3/13/2024	9/22/2024	5.00	138	—
Paving	Paving	9/17/2024	9/23/2024	5.00	5.00	—
Architectural Coating	Architectural Coating	9/17/2024	9/23/2024	5.00	5.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	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
Grading	—	—	—	—
Grading	Worker	7.50	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.70	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	0.88	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	0.34	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.18	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	0.00	0.00	3,150	1,050	353

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Grading	—	50.0	7.50	0.00	—
Paving	0.00	0.00	0.00	0.00	0.13

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Fast Food Restaurant with Drive Thru	0.00	0%
Parking Lot	0.13	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	532	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
Fast Food Restaurant with Drive Thru	942	1,232	945	359,103	4,906	21,759	16,689	3,283,900
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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)
0	0.00	3,150	1,050	353

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

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)
Fast Food Restaurant with Drive Thru	73,640	532	0.0330	0.0040	239,969
Parking Lot	5,151	532	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Fast Food Restaurant with Drive Thru	607,067	132,322
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Fast Food Restaurant with Drive Thru	23.0	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Fast Food Restaurant with Drive Thru	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Fast Food Restaurant with Drive Thru	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Fast Food Restaurant with Drive Thru	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

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	29.3	annual days of extreme heat
Extreme Precipitation	0.80	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.57	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	2	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A

Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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 include implementation of 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	93.6
AQ-PM	0.92
AQ-DPM	2.80
Drinking Water	50.3
Lead Risk Housing	35.9
Pesticides	0.00
Toxic Releases	3.78
Traffic	11.0
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	4.42
Haz Waste Facilities/Generators	39.8
Impaired Water Bodies	0.00
Solid Waste	39.0

Sensitive Population	—
Asthma	61.8
Cardio-vascular	95.6
Low Birth Weights	63.3
Socioeconomic Factor Indicators	—
Education	26.4
Housing	57.4
Linguistic	7.38
Poverty	56.1
Unemployment	59.4

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	33.01680996
Employed	22.3662261
Median HI	26.52380341
Education	—
Bachelor's or higher	23.67509303
High school enrollment	14.38470422
Preschool enrollment	8.507635057
Transportation	—
Auto Access	60.64416784
Active commuting	29.26985756
Social	—
2-parent households	28.19196715

Voting	69.12613884
Neighborhood	—
Alcohol availability	82.54844091
Park access	10.6249198
Retail density	13.01167715
Supermarket access	27.64018991
Tree canopy	0.384960862
Housing	—
Homeownership	61.36276145
Housing habitability	67.11151033
Low-inc homeowner severe housing cost burden	37.71333248
Low-inc renter severe housing cost burden	53.27858334
Uncrowded housing	88.2586937
Health Outcomes	—
Insured adults	30.60438855
Arthritis	0.0
Asthma ER Admissions	34.7
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	5.2
Cognitively Disabled	15.9
Physically Disabled	28.8
Heart Attack ER Admissions	5.9

Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	41.8
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	44.4
Elderly	28.7
English Speaking	74.7
Foreign-born	3.4
Outdoor Workers	28.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	93.6
Traffic Density	39.1
Traffic Access	23.0
Other Indices	—
Hardship	52.0
Other Decision Support	—
2016 Voting	68.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	28.0
Healthy Places Index Score for Project Location (b)	25.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Building area = 2,100 square feet with 15 parking spaces.
Construction: Construction Phases	Based on estimated construction schedule starting February 2024