

## TECHNICAL MEMORANDUM

**To:** James Thomas, Kimley-Horn and Associates, Inc.  
**From:** Dharma Truong and Alex Pohlman, Kimley-Horn and Associates, Inc.  
**Date:** August 12, 2025  
**Subject:** Circle K Fuel Station and Convenience Store Project, Yucca Valley, CA – Air Quality and Greenhouse Gas Analysis

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### Purpose

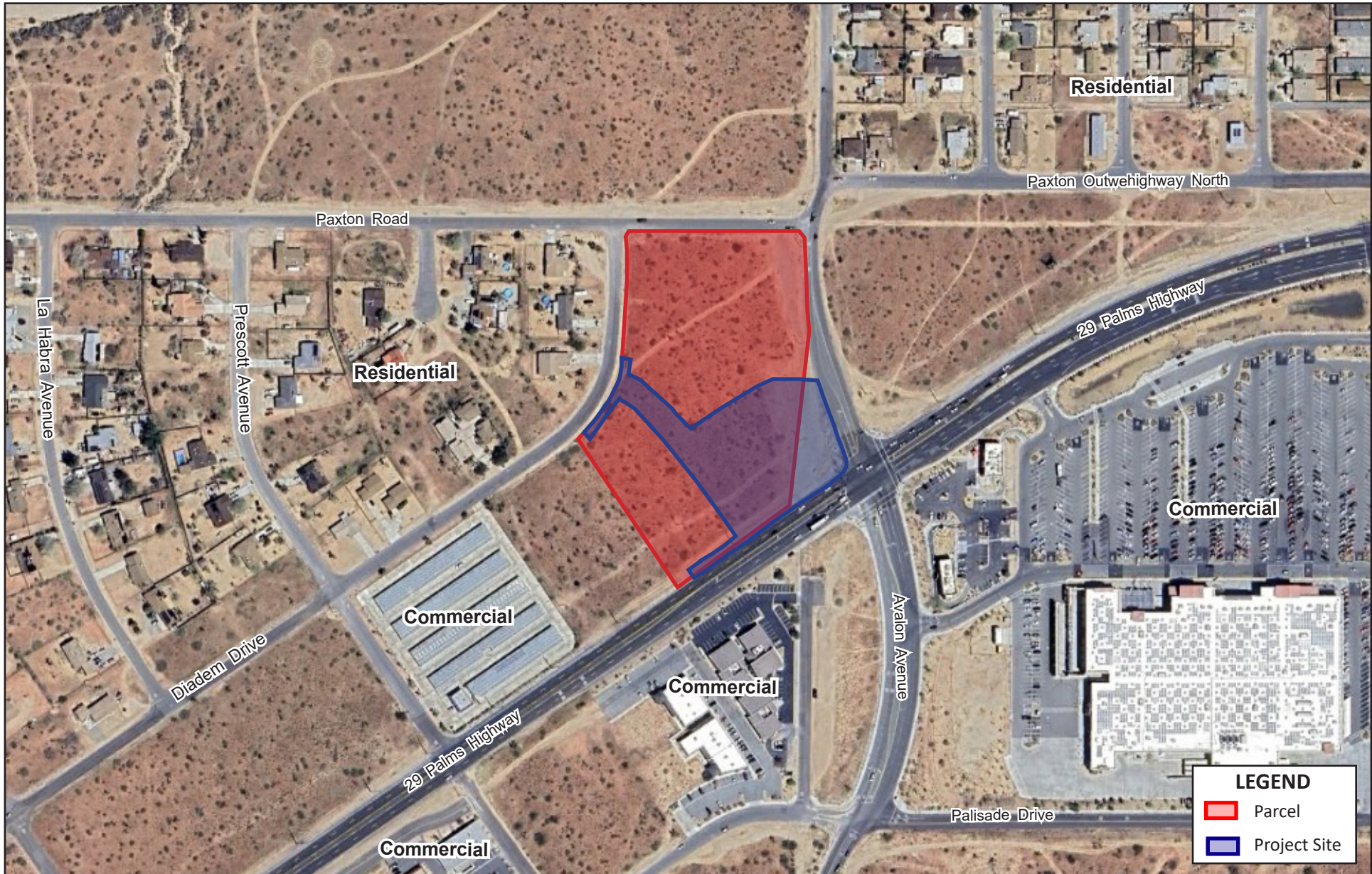
The purpose of this technical memorandum is to identify the air pollutant and greenhouse gas (GHG) emissions associated with the construction and operation of the proposed Circle K Fuel Station and Convenience Store Project (project or proposed project).

### Project Location

The project site is comprised of a 6.32-acre parcel (Assessor's Parcel Number [APN] 060-154-301-000) generally located northwest of the Avalon Road and 29 Palms Highway intersection in the Town of Yucca Valley (Town), San Bernardino County (County), California. Primary regional access to the parcel is provided via 29 Palms Highway located to the south and State Route 247 located approximately 1.35 miles to the west. The parcel is bounded by Paxton Road to the north, Avalon Avenue to the east, 29 Palms Highway to the south, an undeveloped parcel to the southwest, and Diadem Drive to the west, see **Figure 1: Local Vicinity Map**. Land uses adjacent to the parcel include single-family residential uses to the northeast and west and commercial uses to the south, southeast, and southwest. The parcel is designated Commercial (C) within the Corridor Residential Overlay and zoned General Commercial (C-G).

### Project Description

The proposed project would subdivide the parcel into a northern and southern portion. The project would develop 2.79-acres (project site) located on the southern parcel portion, Avalon Avenue right-of-way (ROW), and proposed 29 Palms Highway ROW. The project site is currently undeveloped with moderate vegetation and Joshua Trees. The proposed project would remove some of the Joshua Trees and develop a fuel station with seven fuel pumps (14 gasoline fueling stations), a 5,200 square foot convenience store, and 28 surface parking stalls; see **Figure 2: Preliminary Site Plan**. Project implementation would require a ROW vacation and water main relocation along Avalon Avenue and ROW dedication for highway improvements along 29 Palms Highway. Vehicular access to the project site would be provided via driveways along Avalon Avenue, 29 Palms Highway, and Diadem Drive.

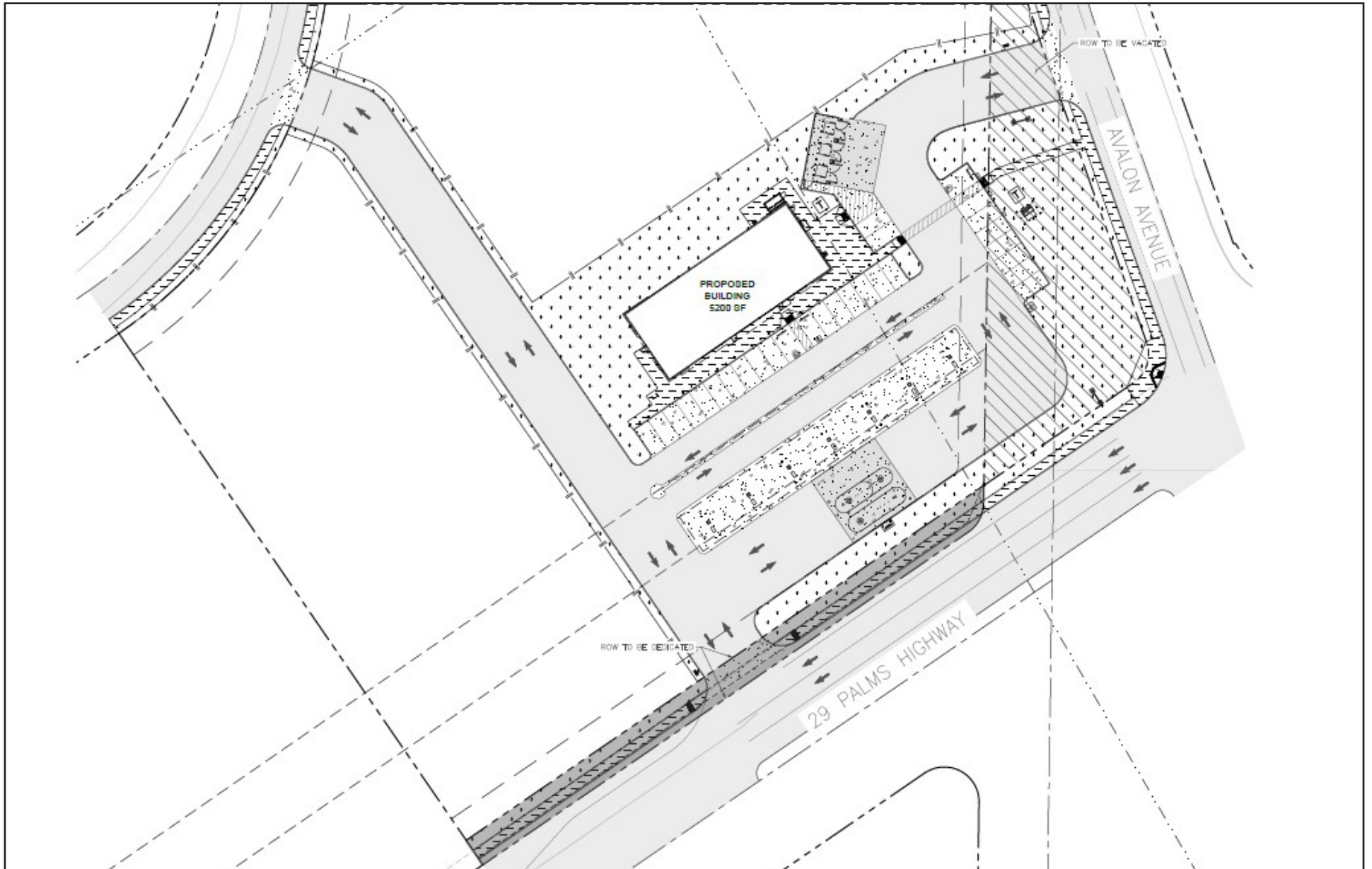


SOURCE: Google Earth, 2025



FIGURE 1: LOCAL VICINITY MAP

CIRCLE K FUEL STATION AND CONENIENCE STORE PROJECT



SOURCE: Kimley-Horn and Associates, Inc., 2025



FIGURE 2: PRELIMINARY SITE PLAN

CIRCLE K FUEL STATION AND CONVENIENCE STORE PROJECT

## Air Quality

### Environmental Setting

#### Local Air Quality

The project site is located within the Mojave Desert Air Quality Management District (MDAQMD) and Mojave Desert Air Basin (MDAB), a distinct geographic area within MDAQMD’s jurisdiction. The California Air Resource Board (CARB) maintains a network of air quality monitoring stations throughout the MDAB to measure ambient pollutant concentrations. These stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The air pollutants of concern in the MDAB are ozone (O<sub>3</sub>), particulate matter less than 10 microns (PM<sub>10</sub>), and particulate matter less than 2.5 microns (PM<sub>2.5</sub>). The air monitoring station nearest the project site that monitors ambient concentrations of O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> is the Palm Springs - Fire Station (located approximately 21.2 miles to the southwest). **Table 1: Ambient Air Quality Data** provides the local air quality data from 2021 to 2023 (the most recent available), including the monitored maximum concentrations and annual exceedances of the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS).

<b>Table 1: Ambient Air Quality Data</b>			
<b>Criteria Pollutant<sup>1,2</sup></b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>Ozone (O<sub>3</sub>)<sup>1</sup></b>			
1-hour Maximum Concentration (ppm)	0.110	0.106	0.116
8-hour Maximum Concentration (ppm)	0.092	0.089	0.093
<i>Number of Days Standard Exceeded</i>			
CAAQS 1-hour (>0.09 ppm)	10	7	8
NAAQS 8-hour (>0.070 ppm)	35	39	38
<b>Carbon Monoxide (CO)</b>			
1-hour Maximum Concentration (ppm)	0.758	1.120	0.902
<i>Number of Days Standard Exceeded</i>			
NAAQS 1-hour (>35 ppm)	0	0	0
CAAQS 1-hour (>20 ppm)	0	0	0
<b>Nitrogen Dioxide (NO<sub>2</sub>)<sup>2</sup></b>			
1-hour Maximum Concentration (ppm)	0.036	0.038	0.035
<i>Number of Days Standard Exceeded</i>			
NAAQS 1-hour (>0.100 ppm)	0	0	0
CAAQS 1-hour (>0.18 ppm)	0	0	0
<b>Particulate Matter Less Than 10 Microns (PM<sub>10</sub>)<sup>1</sup></b>			
24-hour Maximum Concentration	35.2	159.5	173.6

<b>Table 1: Ambient Air Quality Data</b>			
<b>Criteria Pollutant<sup>1,2</sup></b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
Annual Average Concentration <sup>3</sup>	18.4	21.1	23.1
<i>Number of Days Standard Exceeded</i>			
NAAQS 24-hour (>150 µg/m <sup>3</sup> )	0	*	*
CAAQS 24-hour (>50 µg/m <sup>3</sup> )	0	*	*
<b>Particulate Matter Less Than 2.5 Microns (PM<sub>2.5</sub>)<sup>2</sup></b>			
24-hour Maximum Concentration	13.54	31.2	26.2
Annual Average Concentration <sup>4</sup>	6.1	6.3	5.8
<i>Number of Days Standard Exceeded</i>			
NAAQS 24-hour (>35 µg/m <sup>3</sup> )	0	0	0
NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; µg/m <sup>3</sup> = micrograms per cubic meter 1. Measurements for O <sub>3</sub> , CO, NO <sub>2</sub> , PM <sub>10</sub> , and PM <sub>2.5</sub> were taken at the Palm Springs – Fire Station located at 590 East Racquet Club Avenue, Palm Springs, CA 92262 (ARB #33137). 2. The CAAQS are based on a not to exceed standard. The NAAQS are based on a 3-year average of the annual 4 <sup>th</sup> highest daily maximum 8-hour concentration for O <sub>3</sub> ; 98 <sup>th</sup> percentile of 1-hour daily maximum concentrations averaged over 3 years for 1-hr NO <sub>2</sub> ; and not to be exceeded more than once per year on average over 3 years for 24-hr PM. 3. State annual average (AAM) PM <sub>10</sub> standard is > 20 µg/m <sup>3</sup> . Federal annual PM <sub>10</sub> standard (AAM > 50 µg/m <sup>3</sup> ) was revoked in 2006. 4. Both Federal and State standards are annual average (AAM) > 12.0 µg/m <sup>3</sup> .			
Source: All pollutant measurements are from the CARB Aerometric Data Analysis and Management system database ( <a href="https://www.arb.ca.gov/adam">https://www.arb.ca.gov/adam</a> ) except for CO, which were retrieved from the CARB Air Quality and Meteorological Information System ( <a href="https://www.arb.ca.gov/aqmis2/aqmis2.php">https://www.arb.ca.gov/aqmis2/aqmis2.php</a> ).			

Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive receptors that are in proximity to localized sources of toxics are of particular concern. Land uses considered sensitive receptors include residences, schools, hospitals, and parks.<sup>1</sup> Sensitive receptors nearest the project site are listed in **Table 2: Sensitive Receptors**.

<b>Table 2: Sensitive Receptors</b>	
<b>Sensitive Receptor</b>	<b>Distance<sup>1</sup> and Direction from the Project Site</b>
1- Single-Family Residential Uses	50 feet northwest of project site
2- Single-Family Residential Uses	450 northeast of project site
3- Single-Family Residential Uses	733 feet southwest of project site
1- Distance measured from the project site boundary to the nearest sensitive receptor property line.	
Source: Google Earth, 2025.	

<sup>1</sup> Town of Yucca Valley, General Plan, Open Space and Conservation Element, <https://www.yucca-valley.org/home/showpublisheddocument/2596/637009395718470000>, accessed July 2025.

## Regulatory Setting

### Mojave Desert Air Quality Management District Thresholds

According to the MDAQMD’s *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*, an air quality impact is considered significant if a project would violate any NAAQS or CAAQS, contribute substantially to an existing or projected air quality violation, exceed the MDAQMD’s thresholds of significance, or expose sensitive receptors to substantial pollutant concentrations. The MDAQMD’s thresholds of significance for volatile organic compounds (VOC) (also referred to as reactive organic gases [ROG]), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>), PM<sub>10</sub>, and PM<sub>2.5</sub> are provided in **Table 3: Mojave Desert Air Quality Management District Emissions Thresholds**. The thresholds apply to land use development project construction and operation within the MDAQMD jurisdiction. The thresholds are given in pounds per day and tons per year to allow for the analysis of multi-phased projects, such as a project with a construction phase and a separate operational phase, with phases shorter than one year against the daily threshold.

Pollutants	Annual Thresholds (short tons)	Daily Thresholds (pounds)
Carbon Monoxide (CO)	100	548
Nitrogen Oxides (NO <sub>x</sub> )	25	137
Volatile Organic Compounds (VOC)	25	137
Sulfur Oxides (SO <sub>x</sub> )	25	137
Coarse Particulates (PM <sub>10</sub> )	15	82
Fine Particulates (PM <sub>2.5</sub> )	12	65

Source: Mojave Desert Air Quality Management District, *CEQA and Federal Conformity Guidelines*, 2020.

Project health risks are determined by examining the types and levels of air toxics generated and the associated impacts on factors that affect air quality. The MDAQMD thresholds of significance for toxic air contaminants (TACs) are as follows:

- **Cancer Risk (Individual):** Emit TACs that result in a maximum individual incremental cancer equal to or greater than 10 in one million.
- **Non-Cancer Risk:** Emit TACs that result in a chronic or acute hazard index (HI) equal to or greater than 1.0.

Cancer risk is expressed in terms of expected incremental incidence per million population. The MDAQMD threshold of significance is the maximum acceptable incremental cancer risk due to TAC exposure. This threshold is an upper-bound incremental probability to determine whether or not a given project has a potentially significant development-specific and cumulative impact and to ensure an individual new source does not contribute a cumulatively significant impact. A cancer risk level of 10 in one million implies a likelihood that up to 10 persons, out of one million equally exposed persons,

would contract cancer if exposed continuously (24 hours per day) to the TAC levels over a specified duration of time. This risk would be an excess cancer that is in addition to any cancer risk borne by a person not exposed to these TACs.

Non-carcinogenic risks are quantified by calculating the HI, expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at or below which health effects are not likely to occur. A HI of less than 1.0 means that adverse health effects are not expected.

#### Town of Yucca Valley General Plan

The Town of Yucca Valley General Plan Open Space and Conservation Elements contain the following goal and policies that address air quality and are applicable to the project:

**Goal OSC 10:** Preservation and enhancement of the Mojave Desert region’s air quality, in order to assure long-term availability of clean and healthful air in the Town of Yucca Valley, for the protection of the health and welfare of the community.

**Policy OSC 10-4:** Coordinate land use planning efforts to assure that sensitive receptors are reasonably separated from polluting point sources.

**Policy OSC 10-5:** Provide consistent and effective code enforcement for construction and grading activities to assure ground disturbances do not contribute to blowing sand and fugitive dust emissions.

#### Town of Yucca Valley Municipal Code

The Town’s Municipal Code has adopted regulations to reduce exhaust emissions, as set forth in *Section 9.34.040: Air Quality*.

##### *Municipal Code Section 9.34.040: Air Quality*

The following emissions control measures shall apply to all discretionary land use projects approved by the town on or after January 15, 2009:

Off Road Diesel Vehicle/Equipment Operations: All business establishments and contractors that use off road diesel vehicle/equipment as part of their normal business operations shall adhere to the following measures during their operations in order to reduce diesel particulate matter emissions from diesel fueled engines:

- Off road vehicles/equipment shall not be left idling on site for periods in excess of five minutes. The idling limit does not apply to:
  - Idling when queuing;
  - Idling to verify that the vehicle is in safe operating condition;

- Idling for testing, servicing, repairing or diagnostic purposes;
- Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane); and
- Idling required to bring the machine system to operating temperature.
- Use reformulated ultra low sulfur diesel fuel in equipment and use equipment certified by the United States Environmental Protection Agency (U.S. EPA) or that predates U.S. EPA regulations.
- Maintain engines in good working order to reduce emissions.
- Signs shall be posted requiring vehicle drivers to turn off engines when parked.
- Any requirements or standards subsequently adopted by the MDAQMD or the California Air Resources Board (CARB).
- Provide temporary traffic control during all phases of construction.
- On-site electrical power connections shall be provided for electric construction tools to eliminate the need for diesel powered electric generators, where feasible.
- Maintain construction equipment engines in good working order to reduce emissions. The developer shall have each contractor certify that all construction equipment is properly serviced and maintained in good operating condition.
- Contractors shall use ultra low sulfur diesel fuel for stationary construction equipment as required by MDAQMD Rule 431.1 and Rule 431.2 to reduce the release of undesirable emissions.
- Substitute electric and gasoline powered equipment for diesel powered equipment, where feasible.

## Impact Analysis

### Air Quality Management Plan Consistency

Pursuant to the Federal Clean Air Act (FCAA) and as part of its enforcement responsibilities, the U.S. EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan that demonstrates the means to attain the NAAQS. The State Implementation Plan must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under State law, the California Clean Air Act (CCAA) requires an air quality attainment plan to be prepared for areas designated as nonattainment regarding the state and federal ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As stated above, the project site is located within the MDAB and is under the jurisdiction of the MDAQMD. The MDAQMD is required, pursuant to the FCAA, to reduce emissions of criteria pollutants

for which the MDAB is in nonattainment. The MDAQMD's *Federal 70 PPB O<sub>3</sub> Attainment Plan (2023 70 PPB Plan)* contains air pollutant control strategies based on Southern California Association of Governments' (SCAG) growth and emission forecasts included in the *2024 Connect SoCal (2024 - 2050 Regional Transportation Plan/Sustainable Communities Strategy)*. SCAG's forecasts were defined in consultation with local governments and based on local general plans. The project is subject to the 2023 70 PPB Plan. Accordingly, conformance with the 2023 70 PPB Plan for development projects is determined by the following:

- Demonstrating compliance with local land use plans and/or population projections;
- Demonstrating compliance with all MDAQMD Rules and Regulations; and
- Demonstrating the project would not increase the frequency or severity of a violation of the NAAQS or CAAQS.

The purpose of the consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans, and thus if it would interfere with the region's ability to comply with NAAQS and CAAQS.

Growth forecasts prepared by SCAG contained in the 2024 Connect SoCal indicate that the number of people employed within the Town will increase from 7,800 in 2019 to 10,900 in 2050, an increase of 3,100 employed people.<sup>2</sup> The project would include 12 employees, which would represent approximately 0.39 percent of the anticipated increase for the Town by 2050. The project site is designated Commercial (C) and zoned General Commercial (C-G). The Applicant is requesting a Conditional Use Permit (CUP). Once approved, the project would develop a land use consistent with the project site designation and zoning. As such, the employment growth attributable to the project is consistent with the growth projections in the Town's General Plan and is therefore considered to be consistent with the first criterion.

The MDAQMD has adopted rules to limit air emissions. As stated below, project construction would comply with MDAQMD Rule 402 (Nuisance), Rule 403 (Fugitive Dust), and Rule 1113 (Architectural Coating). Thus, the project would be consistent with the second criterion.

As shown in **Table 4: Project Construction Pollutant Emissions** and **Table 5: Project Operational Pollutant Emissions** below, the project's construction- and operational-generated pollutant emissions would not exceed the respective MDAQMD thresholds. As such, the project would not contribute or worsen an existing air quality violation. The project would be consistent with the third criterion. Impacts would be less than significant, and no mitigation is required.

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<sup>2</sup> Southern California Association of Governments, Connect SoCal (2024–2050 RTP/SCS), *Demographics and Growth Forecast*, adopted April 4, 2024, <https://www.scag.ca.gov/sites/default/files/2024-05/23-2987-tr-demographics-growth-forecast-final-040424.pdf>, accessed July 2025.

Construction Pollutant Emissions

Project construction activities would generate short-term criteria pollutant emissions. The criteria pollutants of primary concern within the project area are ozone-precursor pollutants (i.e., ROG and NO<sub>x</sub>), PM<sub>10</sub>, and PM<sub>2.5</sub>. Construction-generated pollutant emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the criteria pollutant emissions exceeded the MDAQMD’s thresholds of significance. Construction results in the temporary generation of emissions resulting from site grading, road paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Airborne particulate matter emissions are largely dependent on the amount of ground disturbance associated with site preparation and grading activities, as well as weather conditions and the appropriate application of water.

Project construction is anticipated to occur over approximately eight months, beginning as early as the first quarter of 2027. Project construction would include sitewide vegetation and natural material removal (site preparation), infrastructure improvements, grading, building construction, paving, and architectural coating. Project construction-generated emissions were calculated using the CARB-approved California Emissions Estimator Model (CalEEMod), which is designed to model emissions for land use development projects based on typical construction requirements. Fugitive dust emissions may have a substantial, temporary impact on local air quality and may be a nuisance to those living and working in the project area. The project would comply with MDAQMD rules and regulations, including MDAQMD Rule 402 (Nuisance), Rule 403 (Fugitive Dust), and Rule 1113 (Architectural Coating). Rule 402 prohibits the discharge of nuisance air contaminants. Rule 403 (watering of inactive and perimeter areas, track out requirements, etc.) was applied in CalEEMod to minimize fugitive dust emissions. Rule 1113 provides specifications on painting practices and regulates the ROG content of paint. See **Appendix A: Air Quality and Greenhouse Gas Emissions Modeling Data** for more information regarding the construction assumptions used in this analysis. Predicted maximum daily construction-generated emissions for the proposed project are identified in **Table 4**.

<b>Table 4: Project Construction Pollutant Emissions</b>						
<b>Construction Year</b>	<b>Maximum Daily Emissions (pounds per day) <sup>1,2</sup></b>					
	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>SO<sub>2</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
2027	4.99	16.39	15.51	0.05	4.56	2.20
MDAQMD Threshold	137	137	548	137	82	65
<b>MDAQMD Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
ROG = Reactive Organic Gases; NO <sub>x</sub> = Nitrogen Oxides; CO = Carbon Monoxide; SO <sub>2</sub> = Sulfur Dioxide; PM <sub>10</sub> = Particulate Matter 10 microns in diameter or less; PM <sub>2.5</sub> = Particulate Matter 2.5 microns in diameter or less 1. The highest values between the summer and winter results were used as a worst-case scenario. 2. Mandatory compliance with MDAQMD Rule 403 Fugitive Dust assumed. The Rule 403 reduction/credits include the following: properly maintain mobile and other construction equipment: water exposed surfaces two times daily; and limit speeds on unpaved roads to 15 miles per hour.						
Source: CalEEMod version 2022.1. Refer to <b>Appendix A</b> for model outputs.						

As shown in **Table 4**, the project’s construction-related pollutant emissions would not exceed the respective MDAQMD daily thresholds. Impacts would be less than significant, and no mitigation is required.

**Operational Pollutant Emissions**

The project’s operational emissions would be primarily associated with mobile sources (motor vehicle usage), area sources (landscape maintenance equipment, consumer products, and architectural coatings usage), energy emissions (non-hearth natural gas usage), and fuel station emissions (gas dispensing activities). Operational-generated emissions associated with the project except for the fuel station emissions were calculated using CalEEMod, which is designed to model emissions based on land use activity data and the project vehicle trip generation. The project would generate 882 total daily vehicle trips.<sup>3</sup> The fuel station emissions were calculated using the U.S. EPA Potential to Emit Calculator for Gasoline Dispensing Facilities based on the number of gasoline fuel stations. **Table 5** summarizes the operational emissions attributable to the proposed project.

<b>Table 5: Project Operational Pollutant Emissions</b>						
Source	Maximum Daily Emissions (pounds per day) <sup>1</sup>					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Mobile	4.11	3.88	33.62	0.08	6.92	1.80
Area	0.17	<0.01	0.23	<0.01	<0.01	<0.01
Energy	<0.01	0.02	0.02	<0.01	<0.01	<0.01
Fuel Station	12.86	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions</b>	<b>17.14</b>	<b>3.91</b>	<b>33.87</b>	<b>0.08</b>	<b>6.92</b>	<b>1.80</b>
MDAQMD Threshold	137	137	548	137	82	65
<b>MDAQMD Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
ROG = Reactive Organic Gases; NO <sub>x</sub> = Nitrogen Oxides; CO = Carbon Monoxide; SO <sub>2</sub> = Sulfur Dioxide; PM <sub>10</sub> = Particulate Matter 10 microns in diameter or less; PM <sub>2.5</sub> = Particulate Matter 2.5 microns in diameter or less 1. The highest values between the summer and winter results were used as a worst-case scenario. Source: CalEEMod version 2022.1; U.S. EPA Potential to Emit Calculator for Gasoline Dispensing Facilities. Refer to <b>Appendix A</b> for model outputs.						

As shown in **Table 5**, the project’s construction-related pollutant emissions would not exceed the respective MDAQMD thresholds. Impacts would be less than significant, and no mitigation is required.

**Operational Health Risk Assessment**

TACs are airborne substances capable of causing short-term (acute) and long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs do not have ambient air quality standards because no safe levels of TACs can be determined. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. TACs

<sup>3</sup> Kimley-Horn and Associates, Inc., Traffic Scope Approval Form, Table 1: Summary of Project Trip Generation Circle K Fuel Station – Town of Yucca Valley, 2025.

attributable to the fuel station would include benzene, ethyl-benzene, toluene, xylene, naphthalene, propylene, and n-Hexane.

The health risk assessment analyzes the cancer and non-cancer health impacts to the public, such as residents and workers, associated with implementation of the project. The air dispersion modeling for the fuel station was performed using the CARB and California Air Pollution Control Officers Association's (CAPCOA) 2022 Gasoline Service Station Variable Meteorology Risk Assessment Screening Tool which incorporates the American Meteorological Society (AMS) and U.S. EPA Regulatory Model (AERMOD). AERMOD is a steady-state, multiple-source, Gaussian dispersion model. AERMOD estimates hourly concentrations for each source/receptor pair and calculates concentrations for user-specified averaging times, including an average concentration for the complete simulation period. The modeling and analysis were prepared in accordance with the CARB and CAPCOA's *Gasoline Service Station Risk Tool User Guide*.<sup>4</sup> The parameters used in AERMOD include the following:

- **Meteorological Data.** AERMOD requires hourly meteorological data consisting of wind vector, wind speed, temperature, atmospheric stability class, and mixing height. The latest 5-year meteorological data set from the Palm Springs International Airport Monitoring Station (KPSP), which is outside the MDAQMD area but is the closest station to the project site, was obtained from the South Coast Air Quality Management District (SCAQMD).<sup>5</sup> Surface and upper air meteorological data from this monitoring station was selected as being the most representative for meteorology based on proximity to the project site as well as terrain, surrounding land use and surface characteristics.
- **Station Control Equipment.** All gasoline dispensing or fueling operations with underground storage tanks must have enhanced vapor recovery equipment. The most common scenario in California is Enhanced Vapor Recovery Phase I and Enhanced Vapor Recovery Phase II.<sup>6</sup>
- **Annual Throughput (gallons/year).** The annual throughput is needed to calculate cancer risk and the chronic HI. The annual throughput was calculated using the U.S. EPA Potential to Emit Calculator for Gasoline Dispensing Facilities.<sup>7</sup> The project's estimated annual throughput is 5,396,160 gallons per year.

<sup>4</sup> California Air Resources Board, *Gasoline Service Station Risk Tool User Guide*, [https://ww2.arb.ca.gov/sites/default/files/2022-03/Gasoline%20Service%20Station%20Risk%20Tool%20User%20Guide\\_FINAL\\_ADA%20Compliant.pdf](https://ww2.arb.ca.gov/sites/default/files/2022-03/Gasoline%20Service%20Station%20Risk%20Tool%20User%20Guide_FINAL_ADA%20Compliant.pdf), accessed July 2025.

<sup>5</sup> South Coast Air Quality Management District, *Health Risk Assessment Tool and AEROD-Ready Meteorological Data Files*, [https://www.aqmd.gov/assets/aermet/AERMET\\_files\\_And\\_HRA\\_Tool.html](https://www.aqmd.gov/assets/aermet/AERMET_files_And_HRA_Tool.html), accessed July 2025.

<sup>6</sup> California Air Resources Board, *Gasoline Service Station Risk Tool User Guide*, [https://ww2.arb.ca.gov/sites/default/files/2022-03/Gasoline%20Service%20Station%20Risk%20Tool%20User%20Guide\\_FINAL\\_ADA%20Compliant.pdf](https://ww2.arb.ca.gov/sites/default/files/2022-03/Gasoline%20Service%20Station%20Risk%20Tool%20User%20Guide_FINAL_ADA%20Compliant.pdf) page 6, accessed July 2025.

<sup>7</sup> U.S. EPA. Potential to Emit Calculator for Gasoline Dispensing Facilities <https://19january2021snapshot.epa.gov/sites/static/files/2016-06/gasolinedispensingcalculator032315.xlsx>, accessed July 2025

- Maximum Hourly Dispensing (gallons/hour).** The maximum hourly dispensing throughput is needed to calculate the acute HI. This is the maximum amount the station could dispense in any one hour of operation. The Potential to Emit Calculator estimates that each fueling position will dispense 11 gallons every 15 minutes, therefore the project is estimated to dispense 616 gallons per hour.
- Maximum Hourly Loading (gallons/hour).** The maximum hourly loading refers to the amount of fuel that can be delivered to the fuel station in an hour. One 8,800-gallon loading event is reasonable for one hour.<sup>8</sup>
- Receptor Distances.** The distance in meters from the fuel pumps to sensitive receptors and business were entered into the program. Distance for sensitive receptor to the northwest is 118.9 meters, distance to sensitive receptors to the northeast is 183.2 meters, distance to sensitive receptors to the southwest is 248.4 meters, and the distance to the shopping center to the south is 84.3 meters.
- Emission Factors.** Default emission factors from the Technical Guidance document are used in this tool.

*Carcinogenic Risk*

**Table 6: Carcinogenic Risk Assessment** shows the carcinogenic health risk attributable to the fuel station’s operational emissions for the residents and workers nearest the project site.

Table 6: Carcinogenic Risk Assessment				
Exposure Scenario	Receptor Location <sup>1</sup>	Cancer Risk (per million)	MDAQMD Threshold (per million)	MDAQMD Threshold Exceeded?
Residential Receptors	Single-Family Residential 390 feet to the northwest	2.6	10	No
	Single-Family Residential 601 feet to the northeast	1.3	10	No
	Single-Family Residential 815 feet to the southwest	0.8	10	No
Worker Receptors	Shopping Center 277 feet to the south	0.4	10	No

1. The distance was measured from the fuel pumps to the sensitive receptor property line.

Source: 2022 Gasoline Service Station Variable Meteorology Risk Assessment Screening Tool; Google Earth, 2025. Refer to **Appendix A** for modeling data.

<sup>8</sup> CARB, *Gasoline Service Station Industry Wide Risk Assessment Technical Guidance*. [https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance\\_ADA%20Compliant.pdf](https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf), accessed July 2025

As indicated in **Table 6**, the operational emissions attributable to the fuel station would result in a maximum cancer risk of 2.6 in one million at the nearest residential receptor and 0.4 in one million at the nearest worker receptor, which would not exceed the MDAQMD’s maximum individual cancer risk threshold of 10 in one million. Impacts would be less than significant, and no mitigation is required.

*Non-Carcinogenic Risk*

**Table 7: Non-Carcinogenic Risk Assessment** shows the chronic and acute non-cancer risk HI from the fuel station’s operational emissions for the residents and workers nearest the project site.

<b>Table 7: Non-Carcinogenic Risk Assessment</b>			
<b>Exposure Scenario</b>	<b>Receptor Location<sup>1</sup></b>	<b>Chronic Hazard Index</b>	<b>Acute Hazard Index</b>
Residential Receptors	Single-Family Residential 390 feet to the northwest	0.0	0.0
	Single-Family Residential 601 feet to the northeast	0.0	0.0
	Single-Family Residential 815 feet to the southwest	0.0	0.0
Worker Receptors	Shopping Center 277 feet to the south	0.0	0.1
<i>MDAQMD Threshold</i>		<i>1.0</i>	<i>1.0</i>
<b>MDAQMD Threshold Exceeded?</b>		<b>No</b>	<b>No</b>
1. The distance was measured from the fuel pumps to the sensitive receptor property line.			
Source: 2022 Gasoline Service Station Variable Meteorology Risk Assessment Screening Tool; Google Earth, 2025. Refer to Appendix A for modeling data.			

As indicated in **Table 7**, the maximum chronic risk HI of 0.0 and acute risk HI of 0.1 at the nearest residential and worker receptor would not exceed the MDAQMD’s non-cancer risk HI significance threshold of 1.0. Impacts would be less than significant, and no mitigation is required.

Construction Odor

The MDAQMD regulates odors through Rule 402 (Nuisance). Rule 402 prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Project construction would generate odors (not substantial pollutant concentrations) from equipment diesel exhaust, architectural coatings containing volatile organic compounds, and paving activities. Project construction would comply with MDAQMD Rule 402. Project construction-generated odors are not expected to affect a substantial number of people, would be temporary, lasting only as long

as construction activities occur, and would disperse rapidly. Impacts would be less than significant, and no mitigation is required.

#### Operational Odors

CARB's *Air Quality and Land Use Handbook* identifies the sources of the most common odor complaints received by local air districts (CARB, 2005a, p. 34). Typical sources include sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. The project does not propose any of the land uses identified as typically associated with emissions of objectionable odors. Impacts would be less than significant, and no mitigation is required.

### **Greenhouse Gas Emissions**

#### **Environmental Setting**

Global climate change refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns and precipitation. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), as well as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). These "greenhouse" gases (GHGs) allow solar radiation (sunlight) into the Earth's atmosphere but prevent radiative heat from escaping, thus warming the Earth's atmosphere. GHGs are emitted by both natural processes and human activities. Concentrations of GHG have increased in the atmosphere since the industrial revolution. Human activities that generate GHG emissions include combustion of fossil fuels (CO<sub>2</sub> and N<sub>2</sub>O); natural gas generated from landfills, fermentation of manure and cattle farming (CH<sub>4</sub>); and industrial processes such as nylon and nitric acid production (N<sub>2</sub>O).

GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas." The reference gas for GWP is CO<sub>2</sub>; therefore, CO<sub>2</sub> has a GWP factor of 1. The other main GHGs that have been attributed to human activity include CH<sub>4</sub>, which has a GWP factor of 28, and N<sub>2</sub>O, which has a GWP factor of 265. When accounting for GHGs, all types of GHG emissions are expressed in terms of metric tons of CO<sub>2</sub> equivalents (MTCO<sub>2</sub>e).

#### **Regulatory Setting**

##### Mojave Desert Air Quality Management District Thresholds

According to the Mojave Desert MDAQMD's *CEQA and Federal Conformity Guidelines*, a greenhouse gas emissions impact is considered significant if a project would exceed the threshold of significance of 100,000 short tons of carbon dioxide equivalents (STCO<sub>2</sub>e) annually.

### Town of Yucca Valley General Plan

The Town of Yucca Valley General Plan Open Space and Conservation Elements contain the following policies that address reducing GHG emissions that are applicable to the project:

**Goal OSC 11:** Reduced greenhouse gas emissions from activities within the Town that support efforts under AB32 to mitigate the impact of climate change on the Town and state.

**Policy OCS 11-1:** Continue to participate in and support the provisions of the San Bernardino Regional Greenhouse Gas Reduction Plan.

**Policy OCS 11-2:** Encourage new development to be designed to take advantage of the desert climate through solar orientation, shading patterns, and other green building practices and technologies.

**Policy OCS 11-3:** Maintain General Plan Land Use, Housing, and Transportation goals and policies to be aligned with, support, and enhance SCAG's Regional Transportation Plan and Sustainable Communities Strategy to achieve reductions in GHG emissions.

### San Bernardino County Regional Greenhouse Gas Reduction Plan

The San Bernardino County Regional Greenhouse Gas Reduction Plan (Reduction Greenhouse Gas Plan) is a foundational document that establishes measures and implementation actions selected by the Town to guide the Town towards the State's GHG emissions targets. The Regional Greenhouse Gas Reduction Plan measures are aimed at reducing GHG emissions through compliance with State policies, County policies, building energy efficiency, alternative modes of transportation, landscaping, and off-road equipment maintenance.

### **Impact Analysis**

#### Construction GHG Emissions

Project construction would result in direct GHG emissions from construction equipment and the transport of materials and construction workers to and from the project site. Construction-generated GHG emissions would be temporary and would cease with completion of construction. As stated above, project construction is anticipated to occur over approximately eight months, beginning as early as the first quarter of 2027. Construction-generated GHG emissions associated with the project were calculated using the CARB-approved CalEEMod, which is designed to model emissions for land use development projects based on typical construction requirements. See **Appendix A** for more information regarding the construction assumptions used in this analysis.

**Table 8: Project Construction Greenhouse Gas Emissions** presents the total GHG emissions generated during project construction. Construction GHG emissions are typically summed and amortized over the lifetime of the project (assumed to be 30 years), then added to the operational emissions.<sup>9</sup>

<b>Table 8: Project Construction Greenhouse Gas Emissions</b>		
<b>Construction</b>	<b>MTCO<sub>2</sub>e per year</b>	<b>STCO<sub>2</sub>e per year<sup>1</sup></b>
Total Construction	164	180
Amortized over 30 Years	5	6
MTCO <sub>2</sub> e = metric tons of carbon dioxide equivalent; STCO <sub>2</sub> e = short tons of carbon dioxide equivalent		
1. MTCO <sub>2</sub> e emissions from CalEEMod were converted from metric tons to short tons to be consistent with the MDAQMD threshold.		
Source: CalEEMod version 2022.1. Refer to <b>Appendix A</b> for the model outputs.		

As shown in **Table 8**, project construction would result in 180 STCO<sub>2</sub>e over the course of construction and approximately 6 STCO<sub>2</sub>e per year when amortized.

Operational GHG Emissions

Operational or long-term GHG emissions would occur over the life of the project. Operational GHG emissions would result from direct sources, such as project-generated vehicular traffic, natural gas combustion, and area source usage (architectural coatings, landscaping equipment, and consumer products). Operational GHG emissions would also result from indirect sources, such as off-site electrical power generation, energy required to convey water to and wastewater from the project site, solid waste generation, and fugitive refrigerants from air conditioning or refrigerators. Operational-generated emissions associated with the project were calculated using CalEEMod, which is designed to model emissions based on land use activity data and the project vehicle trip generation. The project would generate 882 total daily vehicle trips.<sup>10</sup>

**Table 9: Project Operational Greenhouse Gas Emissions** summarizes the total project operational-generated GHG emissions. As shown in **Table 9**, the Project would generate approximately 1,051 STCO<sub>2</sub>e per year from operations with amortized construction. Project GHG emissions would not exceed MDAQMD’s GHG threshold of 100,000 STCO<sub>2</sub>e per year. Impacts would be less than significant, and no mitigation is required.

<b>Table 9: Project Operational Greenhouse Gas Emissions</b>		
<b>Source</b>	<b>MTCO<sub>2</sub>e per year</b>	<b>STCO<sub>2</sub>e per year<sup>1</sup></b>
Construction Amortized Over 30 Years	5	6
Mobile	706	778
Area	0	0
Energy	63	69

<sup>9</sup> The project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District (South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13*, August 26, 2009).

<sup>10</sup> Kimley-Horn and Associates, Inc., Traffic Scope Approval Form, Table 1: Summary of Project Trip Generation Circle K Fuel Station – Town of Yucca Valley, 2025.

Source	MTCO <sub>2</sub> e per year	STCO <sub>2</sub> e per year <sup>1</sup>
Water and Wastewater	2	2
Waste	5	5
Refrigerants	179	197
Total Emissions <sup>2</sup>	954	1,051
MDAQMD Threshold	-	100,000
<b>Threshold Exceeded?</b>	-	<b>No</b>
MTCO <sub>2</sub> e = metric tons of carbon dioxide equivalent; STCO <sub>2</sub> e = short tons of carbon dioxide equivalent 1. MTCO <sub>2</sub> e emissions from CalEEMod were converted from metric tons to short tons to be consistent with the MDAQMD threshold. 2. Totals may not equal 100 percent due to rounding.		
Source: CalEEMod version 2022.1. Refer to <b>Appendix A</b> for the model outputs.		

California Air Resource Board 2017 Scoping Plan Consistency

The California State Legislature adopted Assembly Bill (AB) 32 in 2006. AB 32 focuses on reducing GHGs to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, CARB adopted the *Climate Change Scoping Plan* (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan provides a range of GHG reduction actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as the cap-and-trade program, and an AB 32 implementation fee to fund the program.

The CARB 2017 Scoping Plan identifies GHG reduction measures to achieve the State’s 2030 target of a 40 percent reduction of GHG emission below 1990 levels. **Table 10: Project Consistency with Applicable CARB 2017 Scoping Plan Measures** analyzes the project’s consistency with the CARB 2017 Scoping Plan. Although a number of these measures are currently established as policies and measures, some measures have not yet been formally proposed or adopted. It is expected that these actions to reduce GHG emissions will be adopted as required to achieve statewide GHG emissions targets.

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Compliance
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on GHG Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	<b>Consistent.</b> The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, generated in-State or imported. Accordingly, GHG emissions associated with CEQA projects’ electricity

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Compliance
			usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and combustion of other fossil fuels not directly covered at large sources in the Program’s first compliance period. The proposed project would not conflict with implementation of the Cap-and-Trade Program and would indirectly be consistent with regard to the use of electricity and fuel.
	California Light-Duty Vehicle GHG Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	<b>Consistent.</b> This measure applies to all new vehicles starting with model year 2012. The project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with project construction and operation would be required to comply with the Pavley emissions standards.
		2012 LEV III California GHG and Criteria Pollutant Exhaust and Evaporative Emission Standards	<b>Consistent.</b> The LEV III amendments provide reductions from new vehicles sold in California between 2017 and 2025. Passenger vehicles associated with Project construction and operations would be required to comply with LEV III standards.
	Low Carbon Fuel Standard	2009 readopted in 2015. Regulations to Achieve GHG Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	<b>Consistent.</b> This measure applies to transportation fuels utilized by vehicles in California. The project would not conflict with implementation of this measure. It is assumed that any motor vehicles associated with project construction and operations would be consistent with the measure and utilize low carbon transportation fuels.
	Regional Transportation-Related GHG Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	<b>Consistent.</b> The project would provide development in the region that is consistent with the growth projections in SCAG’s 2024 Connect SoCal.  The project would result in additional workers. However, the project is located near major roadways, services, and residential uses. By facilitating a fuel station proximate to residential and commercial uses, the project would reduce mobile-source GHG emissions.
	Goods Movement	Goods Movement Action Plan January 2007	<b>Not Applicable.</b> The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicle	2010 Amendments to the Truck and Bus Regulation, the Drayage	<b>Consistent.</b> This measure applies to medium- and heavy-duty vehicles that operate in the State. The project would not conflict with implementation of this measure. Medium-

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Compliance
		Truck Regulation and the Tractor-Trailer GHG Regulation	and heavy-duty vehicles associated with project construction would be required to comply with this regulation.
	High Speed Rail	Funded under SB 862	<b>Not Applicable.</b> This is a Statewide measure that cannot be implemented by a project applicant or Lead Agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	<b>Consistent.</b> The project would not conflict with implementation of this measure, as it would be subject to compliance with the latest energy efficiency standards.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	<b>Consistent.</b> The project would obtain electricity from the electric utility, SCE. SCE obtained 30.9 percent of its power supply from renewable sources in 2020 and include 50 percent and 100 percent renewable Green Rate options. Therefore, the utility would provide power to the project that would be comprised of a greater percentage of renewable sources.
	Million Solar Roofs Program	SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	
Million Solar Roofs Program	Tax Incentive Program	<b>Not Applicable.</b> This measure is to increase solar use throughout California, which is being done by various electricity providers and existing solar programs. The program provides incentives that are in place at the time of construction.	
Water	Water	Title 24 Part 11 California Green Building Code Standards	<b>Consistent.</b> The project would comply with the CALGreen Code, which requires a 20 percent reduction in indoor water use. The project would also comply with the Town's Water-Efficient Landscaping Regulations (Chapter 9.32 of the Town's Municipal Code).
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	<b>Consistent.</b> The State is required to increase use of green building practices. The project would implement required green building strategies through existing regulations that require the project to comply with various CALGreen Code standards.
Industry	Industrial Emissions	2018 CARB Mandatory Reporting Regulation	<b>Not Applicable.</b> The Mandatory Reporting Regulation requires facilities and entities with more than 10,000

Table 10: Project Consistency with Applicable CARB 2017 Scoping Plan Measures			
Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Compliance
			MTCO <sub>2</sub> e of combustion and process emissions, all facilities belonging to certain industries, and all electric power entities to submit an annual GHG emissions data report directly to CARB. As shown above, total project GHG emissions would not exceed 100,000 MTCO <sub>2</sub> e. Therefore, this regulation would not apply.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	<b>Consistent.</b> The project would not conflict with implementation of these measures. The project is required to achieve the recycling mandates via compliance with the CALGreen Code.
		AB 341 Statewide 75 Percent Diversion Goal	
Forests	Sustainable Forests	Cap and Trade Offset Projects	<b>Not Applicable.</b> The project site does not include forested lands and is in an urban area.
High Global Warming Potential	High Global Warming Potential Gases	CARB Refrigerant Management Program CCR 95380	<b>Consistent.</b> The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage systems. The project would not conflict with the refrigerant management regulations adopted by CARB.
Agriculture	Agriculture	Cap and Trade Offset Projects for Livestock and Rice Cultivation	<b>Not Applicable.</b> No grazing, feedlot, or other agricultural activities that generate manure occur currently on site or are proposed by the project.
Notes: GHG = greenhouse gas; CEQA = California Environmental Quality Act; SCAG = Southern California Association of Government; LEV = Low-Emissions Vehicle; RTP/SCS = Regional Transportation Plan/ Sustainable Communities Strategy; SCE = Southern California Edison; MTCO <sub>2</sub> e= metric tons of CO <sub>2</sub> equivalents; CARB = California Air Resource Board; CALGreen = California Green Building Standards; SB = Senate Bill			
Source: California Air Resources Board, <i>California's 2017 Climate Change Scoping Plan</i> , November 2017; California Air Resources Board, <i>Climate Change Scoping Plan</i> , December 2008.			

As presented in **Table 10**, the project would be consistent with the applicable CARB 2017 Scoping Plan measures. Impacts would be less than significant, and no mitigation is required.

California Air Resource Board 2022 Scoping Plan Consistency

The 2022 Scoping Plan sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045 in accordance with AB 1279. The 2022 Scoping Plan aims to achieve the AB 1279 targets primarily through zero-emissions transportation (e.g., electrifying cars, buses, trains, and trucks) and decarbonizing the electricity and industrial sectors. The project would be required to comply with applicable current and future regulatory requirements promulgated through the 2022 Scoping Plan.

Statewide strategies to reduce GHG emissions in the latest 2022 Scoping Plan include implementing Senate Bill (SB) 100, which would achieve 100 percent clean electricity by 2045; achieving 100 percent

zero-emissions vehicles in 2035 through Advanced Clean Cars II<sup>11</sup>; and implementing the Advanced Clean Fleets regulation to deploy zero-emissions vehicle buses and trucks.<sup>12</sup> Additional transportation policies include the Potential Phased Advanced Clean Equipment Regulation, Clean Off-Road Fleet Recognition Program, In-use Off-Road Diesel-Fueled Fleets Regulation, and Amendments to the In-use Off-Road Diesel-Fueled Fleets Regulation. The 2022 Scoping Plan would continue to implement SB 375. Project GHG emissions would be further reduced through the Cap-and-Trade Program carbon pricing and SB 905, which requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate CO<sub>2</sub> removal projects and technology.

As shown in **Table 8**, approximately 81 percent of the project's emissions are from energy and mobile sources, which would be further reduced by the 2022 Scoping Plan actions described above. The Town has no control over vehicle emissions (approximately 74 percent of the project's total emissions). However, these emissions would decline in the future due to Statewide measures, as well as cleaner technology and fleet turnover. Furthermore, the project would not obstruct or interfere with efforts to increase zero-emission vehicles or State efforts to improve system efficiency. Compliance with applicable State standards (e.g., continuation of the Cap-and-Trade regulation; CARB's Mobile Source Strategy, and Sustainable Freight Action Plan; Executive Order N-79-20; SB 100: renewable electricity portfolio improvements that require 60 percent renewable electricity by 2030 and 100 percent renewable by 2045, etc.) would ensure consistency with State and regional GHG reduction planning efforts. The project would additionally comply with the Energy Code and California Green Building Standards (CALGreen) Code and implement energy efficient measures established by the Regional Greenhouse Gas Reduction Plan. It is also noted that the project would not convert any Natural and Working Lands and/or decrease the State's urban forest carbon stock, which are areas of emphasis in the 2022 Scoping Plan.

Regarding the 2050 goals under Executive Order S-3-05, it is not possible at this time to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that project operations would benefit from applicable measures enacted to meet State GHG reduction goals. Impacts would be less than significant, and no mitigation is required.

#### Southern California Association of Governments 2024 Connect SoCal Consistency

On April 4, 2024, the SCAG Regional Council adopted 2024 Connect SoCal (*2024 - 2050 Regional Transportation Plan/Sustainable Communities Strategy*); establishes GHG emissions goals to reduce

<sup>11</sup> On May 22, 2025, the U.S. Senate voted to revoke the waiver granted by the Biden administration for the Advanced Clean Cars II program. On June 12, 2025, the Trump Administration formally nullified the Advanced Clean Cars II program.

<sup>12</sup> On January 13, 2025, CARB withdrew their requests for Clean Air Act waivers from the U.S. EPA needed to support four recently adopted vehicle emissions regulations: (1) the Advanced Clean Fleets Regulations; (2) the In-Use Locomotive Regulations; (3) part of the Commercial Harbor Craft and Ocean-Going Vessels At-Berth Regulations; and (4) part of the Transport Refrigeration Unit Engine Standards Regulations. Therefore, implementation of these regulations is currently unknown.

GHG emissions in the region by eight percent from 2005 levels by 2020 and by 19 percent by 2035. Connect SoCal is a long-range vision plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2024 Connect SoCal is supported by a combination of transportation and land use strategies that help the region achieve state GHG emissions reduction goals and FCAA requirements, increased housing production, improved equity and resilience, the preservation of natural lands, improvement of public health, increased transportation safety, support for the region’s vital goods movement industries and more efficient use of resources. GHG emissions resulting from land development-related mobile sources are the most potent source of emissions, and therefore project comparison to the 2024 Connect SoCal is an appropriate indicator of whether the project would inhibit the post-2020 GHG reduction goals promulgated by the state.

**Table 11: 2024 Connect SoCal Consistency** summarizes the project’s consistency with the 2024-Connect SoCal.

<b>Table 11: 2024 Connect SoCal Consistency</b>	
<b>SCAG Goals</b>	<b>Compliance</b>
<b>Mobility: Build and maintain an integrated multimodal transportation network.</b>	
Support investments that are well-maintained and operated, coordinated, resilient and result in improved safety, improved air quality and minimized greenhouse gas emissions	<b>Consistent:</b> This measure is to be taken at the regional level. Project implementation would not conflict with the goal. As discussed above, the project would be constructed in accordance with the Title 24 of the California Building Standards Code, Title 20 of the California Code of Regulations, and CALGreen Code standards. Furthermore, the project would include three electric charging stations.
Ensure that reliable, accessible, affordable, and appealing travel options are readily available, while striving to enhance equity in the offerings in high-need communities	<b>Consistent:</b> This measure is to be taken at the regional level. Project implementation would not conflict with the goal. The project proposes a fuel station and convenience store in an urban area near existing transit routes and 29 Palms Highway, reducing VMT.
Support planning for people of all ages, abilities, and backgrounds	<b>Not Applicable:</b> This is not a project-specific policy and is therefore not applicable.
<b>Communities: Develop, connect, and sustain communities that are livable and thriving</b>	
Create human-centered communities in urban, suburban, and rural settings to increase mobility options and reduce travel distances	<b>Consistent:</b> The project proposes a fuel station and convenience store in an urban area near existing transit routes and 29 Palms Highway, reducing VMT.
Produce and preserve diverse housing types in an effort to improve affordability, accessibility, and opportunities for all households	<b>Not Applicable:</b> The project does not propose residential uses.
<b>Environment: Create a healthy region for the people of today and tomorrow</b>	
Develop communities that are resilient and can mitigate, adapt to, and respond to chronic and acute stresses and	<b>Consistent.</b> The project would be developed in an urban area

Table 11: 2024 Connect SoCal Consistency	
SCAG Goals	Compliance
disruptions, such as climate change	<p>near transit services, reducing VMT.</p> <p>The project would be constructed in accordance with Title 24 of the California Building Standards Code, Title 20 of the California Code of Regulations, and CALGreen Code standards. In addition, the project would comply with all applicable efficiency requirements and provide three electric vehicle charging stations.</p> <p>The project is located approximately 85.8 miles inland and would therefore not be subject to risks associated with sea level rise.</p> <p>As stated above, the project would not exceed the MDAQMD’s emission or TAC threshold. Therefore, project implementation would not result in significant health effects.</p> <p>The project thus promotes GHG-reduction strategies and is well suited to maintaining resiliency against the effects of climate change and associated health impacts.</p>
Integrate the region’s development pattern and transportation network to improve air quality, reduce greenhouse gas emissions and enable more sustainable use of energy and water	<p><b>Consistent.</b> Although the project does not include transportation improvements, the project site is located within an urban area near public transit services and 29 Palms Highway. The project location would reduce trip lengths, which would reduce GHG and air quality emissions. The reduction of energy use, improvement of air quality, and promotion of more environmentally sustainable development are encouraged through the development of alternative transportation methods, green design techniques for buildings, and other energy-reducing techniques, such as, compliance with the provisions of the California Building Energy Efficiency Standards and the CALGreen Code.</p>
Conserve the region’s resources	<p><b>Consistent.</b> The project site is vacant and not designated for agricultural uses, natural resources, or conservation. Project implementation would not result in a loss of the region’s resources.</p>
<b>Economy: Support a sustainable, efficient, and productive regional economic environment that provides opportunities for all people in the region</b>	
Improve access to jobs and educational resources	<p><b>Consistent.</b> The project proposes a fuel station and convenience store in an urban area with residential and retail land uses. Therefore, the project location would improve access to job opportunities.</p>
Advance a resilient and efficient goods movement system that supports the economic vitality of the region,	<p><b>Consistent:</b> This measure is to be taken at the regional level. Project implementation would not conflict with the goal. As</p>

Table 11: 2024 Connect SoCal Consistency	
SCAG Goals	Compliance
attainment of clean air and quality of life for our communities	stated above, the project would result in less than significant air quality and health risk impacts.
VMT = vehicle miles traveled; CALGreen = California Green Building Standards; SCAG = Southern California Association of Governments; MDAQMD = Mojave Desert Air Quality Management District; TAC = toxic air contaminant	
Source: Southern California Association of Governments, <i>Connect SoCal (2024 – 2050 Regional Transportation Plan/Sustainable Communities Strategy)</i> , 2024.	

As presented in Table 11, the project would be consistent with the stated goals of the 2024 Connect SoCal. Therefore, the project would not result in any significant impacts or interfere with SCAG’s ability to achieve the region’s GHG emission reduction targets. Impacts would be less than significant, and no mitigation is required.

Regional Greenhouse Gas Reduction Plan Consistency

The Regional Greenhouse Gas Reduction Plan is a foundational guide that includes Town-selected measures aimed at reducing Townwide GHG emissions to achieve State regulatory requirements. The Regional Greenhouse Gas Reduction Plan measures are focused on energy efficiency, on-road transportation, off-road equipment, non-transportation land use, solid waste, and water conveyance. Project contributions to climate goals in relation to the applicable measures are discussed further below:

- **Energy Efficiency:** The project would comply with Title 24 and CALGreen Code energy standards.
- **On-Road Transportation:** The project is located in an urban area near public transit routes, residential uses, and commercial uses. The project would include short-term biking facilities and electrical vehicle charging stations. The project site location and inclusion of alternative transportation infrastructure would reduce vehicle miles traveled.
- **Off-Road Equipment:** The project would comply with CARB’s and the Town’s off-road equipment idling regulation, which limits idling to five minutes or less.
- **Non-Transportation Land Use:** The project would plant 23 trees along the northern, eastern, and southern boundary.
- **Solid Waste:** The project would comply with CALGreen Code waste construction and demolition waste regulations.
- **Water Conveyance:** The project would comply with the Landscaping Ordinance within the Town’s Municipal Code, which requires planting drought tolerant plants and automatic smart irrigation systems that respond to changing environmental conditions.

As discussed herein, the project would include features consistent with the Town-selected measures within the Regional Greenhouse Gas Reduction Plan and would not impede the Town's progress towards the Statewide GHG emissions goal by 2030. Impacts would be less than significant, and no mitigation is required.

**Conclusion**

The project would result in less than significant construction and operational air quality and greenhouse gas emissions impacts because the project-generated emissions would not exceed their respective MDAQMD thresholds. No mitigation is required. Therefore, the project's approval would not result in any significant effects relating to air quality or greenhouse gas emissions.

## **Appendix A**

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### **Air Quality and Greenhouse Gas Emissions Modeling Data**

# Yucca Valley Circle K Detailed Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	Yucca Valley Circle K
Construction Start Date	1/28/2027
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	14.4
Location	34.133762806707935, -116.3879982522061
County	San Bernardino-Mojave Desert
City	Yucca Valley
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5144
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

## 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Convenience Market (24 hour)	5.20	1000sqft	0.75	5,200	27,682	—	—	—

Parking Lot	82.7	1000sqft	1.90	0.00	0.00	—	—	—
Other Asphalt Surfaces	6.01	1000sqft	0.14	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.	1.78	1.50	16.4	15.5	0.05	0.61	3.94	4.56	0.57	1.63	2.20	—	6,322	6,322	0.10	0.62	7.75	6,519
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.02	4.99	9.11	11.1	0.03	0.39	0.72	1.11	0.36	0.09	0.45	—	2,809	2,809	0.11	0.03	0.02	2,820
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.72	0.62	4.08	4.96	0.01	0.13	0.11	0.24	0.12	0.04	0.16	—	981	981	0.04	0.02	0.11	988
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.11	0.74	0.90	< 0.005	0.02	0.02	0.04	0.02	0.01	0.03	—	162	162	0.01	< 0.005	0.02	164

### 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.78	1.50	16.4	15.5	0.05	0.61	3.94	4.56	0.57	1.63	2.20	—	6,322	6,322	0.10	0.62	7.75	6,519
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	5.02	4.99	9.11	11.1	0.03	0.39	0.72	1.11	0.36	0.09	0.45	—	2,809	2,809	0.11	0.03	0.02	2,820
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.72	0.62	4.08	4.96	0.01	0.13	0.11	0.24	0.12	0.04	0.16	—	981	981	0.04	0.02	0.11	988
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.13	0.11	0.74	0.90	< 0.005	0.02	0.02	0.04	0.02	0.01	0.03	—	162	162	0.01	< 0.005	0.02	164

## 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.	4.57	4.28	3.62	33.9	0.08	0.06	6.86	6.92	0.06	1.74	1.80	9.16	8,513	8,522	1.21	0.35	1,103	9,760
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.05	3.76	3.90	26.2	0.07	0.06	6.86	6.92	0.06	1.74	1.80	9.16	7,801	7,810	1.23	0.36	1,079	9,026
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.60	3.41	2.56	18.3	0.04	0.04	3.68	3.72	0.03	0.93	0.97	9.16	4,569	4,578	1.16	0.23	1,084	5,760
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.66	0.62	0.47	3.34	0.01	0.01	0.67	0.68	0.01	0.17	0.18	1.52	756	758	0.19	0.04	179	954

## 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	4.40	4.11	3.60	33.6	0.08	0.06	6.86	6.92	0.06	1.74	1.80	—	8,127	8,127	0.27	0.34	25.4	8,261
Area	0.17	0.17	< 0.005	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.93	0.93	< 0.005	< 0.005	—	0.93
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	378	378	0.02	< 0.005	—	380
Water	—	—	—	—	—	—	—	—	—	—	—	0.74	7.02	7.76	0.08	< 0.005	—	10.2
Waste	—	—	—	—	—	—	—	—	—	—	—	8.42	0.00	8.42	0.84	0.00	—	29.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,078	1,078
Total	4.57	4.28	3.62	33.9	0.08	0.06	6.86	6.92	0.06	1.74	1.80	9.16	8,513	8,522	1.21	0.35	1,103	9,760
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.92	3.63	3.88	26.1	0.07	0.06	6.86	6.92	0.06	1.74	1.80	—	7,415	7,415	0.28	0.35	0.66	7,529
Area	0.13	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	378	378	0.02	< 0.005	—	380
Water	—	—	—	—	—	—	—	—	—	—	—	0.74	7.02	7.76	0.08	< 0.005	—	10.2
Waste	—	—	—	—	—	—	—	—	—	—	—	8.42	0.00	8.42	0.84	0.00	—	29.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,078	1,078
Total	4.05	3.76	3.90	26.2	0.07	0.06	6.86	6.92	0.06	1.74	1.80	9.16	7,801	7,810	1.23	0.36	1,079	9,026
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.45	3.26	2.54	18.1	0.04	0.04	3.68	3.71	0.03	0.93	0.97	—	4,183	4,183	0.22	0.23	5.94	4,262
Area	0.15	0.15	< 0.005	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.46	0.46	< 0.005	< 0.005	—	0.46
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	378	378	0.02	< 0.005	—	380
Water	—	—	—	—	—	—	—	—	—	—	—	0.74	7.02	7.76	0.08	< 0.005	—	10.2
Waste	—	—	—	—	—	—	—	—	—	—	—	8.42	0.00	8.42	0.84	0.00	—	29.5

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,078	1,078
Total	3.60	3.41	2.56	18.3	0.04	0.04	3.68	3.72	0.03	0.93	0.97	9.16	4,569	4,578	1.16	0.23	1,084	5,760
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.63	0.59	0.46	3.31	0.01	0.01	0.67	0.68	0.01	0.17	0.18	—	693	693	0.04	0.04	0.98	706
Area	0.03	0.03	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.08	0.08	< 0.005	< 0.005	—	0.08
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	62.6	62.6	< 0.005	< 0.005	—	62.9
Water	—	—	—	—	—	—	—	—	—	—	—	0.12	1.16	1.28	0.01	< 0.005	—	1.69
Waste	—	—	—	—	—	—	—	—	—	—	—	1.39	0.00	1.39	0.14	0.00	—	4.88
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	178	178
Total	0.66	0.62	0.47	3.34	0.01	0.01	0.67	0.68	0.01	0.17	0.18	1.52	756	758	0.19	0.04	179	954

### 3. Construction Emissions Details

#### 3.1. Site Preparation (2027) - Unmitigated

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

Location	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	1.29	1.08	9.07	10.8	0.03	0.39	—	0.39	0.36	—	0.36	—	2,716	2,716	0.11	0.02	—	2,725
Dust From Material Movement	—	—	—	—	—	—	0.62	0.62	—	0.07	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	—	22.3	22.3	< 0.005	< 0.005	—	22.4
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	—	3.70	3.70	< 0.005	< 0.005	—	3.71
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.36	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	—	93.3	93.3	< 0.005	< 0.005	0.01	94.5
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

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	—	0.79	0.79	< 0.005	< 0.005	< 0.005	0.80
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	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
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

### 3.3. Grading (2027) - Unmitigated

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

Location	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	1.63	1.37	12.2	13.9	0.02	0.54	—	0.54	0.50	—	0.50	—	2,455	2,455	0.10	0.02	—	2,464
Dust From Material Movement	—	—	—	—	—	—	2.78	2.78	—	1.34	1.34	—	—	—	—	—	—	—
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	0.03	0.03	0.23	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.1	47.1	< 0.005	< 0.005	—	47.3
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	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	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.80	7.80	< 0.005	< 0.005	—	7.82
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 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	0.05	0.05	0.04	0.71	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	141	141	< 0.005	< 0.005	0.44	142
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	0.10	0.09	4.17	0.93	0.03	0.08	1.03	1.11	0.08	0.26	0.34	—	3,727	3,727	< 0.005	0.60	7.31	3,912
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	2.46	2.46	< 0.005	< 0.005	< 0.005	2.49
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	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	71.5	71.5	< 0.005	0.01	0.06	75.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.41
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	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.01	12.4

### 3.5. Building Construction (2027) - Unmitigated

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

Location	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	1.35	1.13	9.70	11.7	0.02	0.32	—	0.32	0.30	—	0.30	—	2,201	2,201	0.09	0.02	—	2,208
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	0.43	0.36	3.05	3.69	0.01	0.10	—	0.10	0.09	—	0.09	—	693	693	0.03	0.01	—	696
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	0.08	0.06	0.56	0.67	< 0.005	0.02	—	0.02	0.02	—	0.02	—	115	115	< 0.005	< 0.005	—	115

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	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.4	23.4	< 0.005	< 0.005	0.07	23.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.0	26.0	< 0.005	< 0.005	0.06	27.1
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	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.72	6.72	< 0.005	< 0.005	0.01	6.81
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.21	8.21	< 0.005	< 0.005	0.01	8.54
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	< 0.005	< 0.005	—	1.11	1.11	< 0.005	< 0.005	< 0.005	1.13
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.36	1.36	< 0.005	< 0.005	< 0.005	1.41
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. Paving (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	0.77	0.65	5.74	8.20	0.01	0.23	—	0.23	0.21	—	0.21	—	1,244	1,244	0.05	0.01	—	1,248
Paving	0.53	0.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.77	0.65	5.74	8.20	0.01	0.23	—	0.23	0.21	—	0.21	—	1,244	1,244	0.05	0.01	—	1,248
Paving	0.53	0.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.1	34.1	< 0.005	< 0.005	—	34.2
Paving	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.64	5.64	< 0.005	< 0.005	—	5.66
Paving	< 0.005	< 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	0.08	0.07	0.06	1.07	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	211	211	< 0.005	0.01	0.66	214
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	0.07	0.06	0.07	0.72	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	187	187	< 0.005	0.01	0.02	189
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.26	5.26	< 0.005	< 0.005	0.01	5.34
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	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.88
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

### 3.9. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	4.88	4.88	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67
Architectural Coatings	0.13	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.14	4.14	< 0.005	< 0.005	< 0.005	4.19
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.12
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	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
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

### 3.11. Infrastructure Improvements (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	0.51	0.42	3.48	4.25	0.01	0.09	—	0.09	0.09	—	0.09	—	593	593	0.02	< 0.005	—	595
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	0.51	0.42	3.48	4.25	0.01	0.09	—	0.09	0.09	—	0.09	—	593	593	0.02	< 0.005	—	595
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	0.06	0.05	0.43	0.52	< 0.005	0.01	—	0.01	0.01	—	0.01	—	73.1	73.1	< 0.005	< 0.005	—	73.4
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	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.1	12.1	< 0.005	< 0.005	—	12.2
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	0.03	0.03	0.53	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	105	105	< 0.005	< 0.005	0.33	107
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	0.36	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	93.3	93.3	< 0.005	< 0.005	0.01	94.5

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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.02	12.0
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.96	1.96	< 0.005	< 0.005	< 0.005	1.99
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	4.40	4.11	3.60	33.6	0.08	0.06	6.86	6.92	0.06	1.74	1.80	—	8,127	8,127	0.27	0.34	25.4	8,261
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
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	4.40	4.11	3.60	33.6	0.08	0.06	6.86	6.92	0.06	1.74	1.80	—	8,127	8,127	0.27	0.34	25.4	8,261
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	3.92	3.63	3.88	26.1	0.07	0.06	6.86	6.92	0.06	1.74	1.80	—	7,415	7,415	0.28	0.35	0.66	7,529
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
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	3.92	3.63	3.88	26.1	0.07	0.06	6.86	6.92	0.06	1.74	1.80	—	7,415	7,415	0.28	0.35	0.66	7,529
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	0.63	0.59	0.46	3.31	0.01	0.01	0.67	0.68	0.01	0.17	0.18	—	693	693	0.04	0.04	0.98	706
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
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	0.63	0.59	0.46	3.31	0.01	0.01	0.67	0.68	0.01	0.17	0.18	—	693	693	0.04	0.04	0.98	706

## 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Conveni Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	—	245	245	0.02	< 0.005	—	246
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	106	106	0.01	< 0.005	—	106
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	350	350	0.02	< 0.005	—	352
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Conveni ence Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	—	245	245	0.02	< 0.005	—	246
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	106	106	0.01	< 0.005	—	106
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	350	350	0.02	< 0.005	—	352
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Conveni ence Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	—	40.5	40.5	< 0.005	< 0.005	—	40.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	17.5	17.5	< 0.005	< 0.005	—	17.5
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	58.0	58.0	< 0.005	< 0.005	—	58.2

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.1	28.1	< 0.005	< 0.005	—	28.2
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
Other Asphalt Surfaces	0.00	0.00	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	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.1	28.1	< 0.005	< 0.005	—	28.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.1	28.1	< 0.005	< 0.005	—	28.2
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
Other Asphalt Surfaces	0.00	0.00	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	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.1	28.1	< 0.005	< 0.005	—	28.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.66	4.66	< 0.005	< 0.005	—	4.67
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

Other Asphalt Surfaces	0.00	0.00	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	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.66	4.66	< 0.005	< 0.005	—	4.67

### 4.3. Area Emissions by Source

#### 4.3.1. Unmitigated

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

Source	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	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	0.04	< 0.005	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.93	0.93	< 0.005	< 0.005	—	0.93
Total	0.17	0.17	< 0.005	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.93	0.93	< 0.005	< 0.005	—	0.93
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.13	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.08	0.08	< 0.005	< 0.005	—	0.08
Total	0.03	0.03	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.08	0.08	< 0.005	< 0.005	—	0.08

#### 4.4. Water Emissions by Land Use

##### 4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	0.74	7.02	7.76	0.08	< 0.005	—	10.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.74	7.02	7.76	0.08	< 0.005	—	10.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	0.74	7.02	7.76	0.08	< 0.005	—	10.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.74	7.02	7.76	0.08	< 0.005	—	10.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	0.12	1.16	1.28	0.01	< 0.005	—	1.69
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.12	1.16	1.28	0.01	< 0.005	—	1.69

### 4.5. Waste Emissions by Land Use

#### 4.5.1. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	8.42	0.00	8.42	0.84	0.00	—	29.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.42	0.00	8.42	0.84	0.00	—	29.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	8.42	0.00	8.42	0.84	0.00	—	29.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.42	0.00	8.42	0.84	0.00	—	29.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	1.39	0.00	1.39	0.14	0.00	—	4.88
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.39	0.00	1.39	0.14	0.00	—	4.88

### 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,078	1,078
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,078	1,078
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,078	1,078
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,078	1,078
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market (24 hour)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	178	178
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	178	178

### 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)

Equipm 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)

Equipm ent 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)

Equipm ent 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)

Vegetati on	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
Site Preparation	Site Preparation	1/28/2027	2/1/2027	5.00	3.00	—
Grading	Grading	4/6/2027	4/14/2027	5.00	7.00	—
Building Construction	Building Construction	4/15/2027	9/22/2027	5.00	115	—

Paving	Paving	9/23/2027	10/6/2027	5.00	10.0	—
Architectural Coating	Architectural Coating	10/7/2027	10/20/2027	5.00	10.0	—
Infrastructure Improvements	Trenching	2/2/2027	4/5/2027	5.00	45.0	—

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Back hoes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Back hoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
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
Paving	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37

Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Infrastructure Improvements	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Infrastructure Improvements	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Infrastructure Improvements	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73

### 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	7.50	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	57.1	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	1.66	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	0.85	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	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	0.33	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
Infrastructure Improvements	—	—	—	—
Infrastructure Improvements	Worker	7.50	18.5	LDA,LDT1,LDT2
Infrastructure Improvements	Vendor	—	10.2	HHDT,MHDT
Infrastructure Improvements	Hauling	0.00	20.0	HHDT
Infrastructure Improvements	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	7,800	2,600	5,323

## 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	—	—	4.50	0.00	—

Grading	3,200	—	7.00	0.00	—
Paving	0.00	0.00	0.00	0.00	2.04

### 5.6.2. Construction Earthmoving Control Strategies

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

### 5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Convenience Market (24 hour)	0.00	0%
Parking Lot	1.90	100%
Other Asphalt Surfaces	0.14	100%

### 5.8. Construction Electricity Consumption and Emissions Factors

#### kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2027	0.00	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
Convenience Market (24 hour)	882	882	882	321,930	3,479	9,720	9,720	1,920,687
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## 5.10. Operational Area Sources

### 5.10.1. Hearths

#### 5.10.1.1. Unmitigated

### 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	7,800	2,600	5,323

### 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)
Convenience Market (24 hour)	167,840	532	0.0330	0.0040	87,776
Parking Lot	72,448	532	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	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)
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Convenience Market (24 hour)	385,177	612,836
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

### 5.13. Operational Waste Generation

#### 5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Convenience Market (24 hour)	15.6	—
Parking Lot	0.00	—
Other Asphalt Surfaces	0.00	—

### 5.14. Operational Refrigeration and Air Conditioning Equipment

#### 5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Convenience Market (24 hour)	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Convenience Market (24 hour)	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0

### 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
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### 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
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5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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5.17. User Defined

Equipment Type	Fuel Type
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5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.9	annual days of extreme heat
Extreme Precipitation	0.65	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.41	annual hectares burned

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

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

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

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

### 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	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	4	1	1	4
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.

### 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	93.6

AQ-PM	1.48
AQ-DPM	4.00
Drinking Water	51.3
Lead Risk Housing	30.2
Pesticides	0.00
Toxic Releases	4.86
Traffic	21.6
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	22.1
Haz Waste Facilities/Generators	51.7
Impaired Water Bodies	0.00
Solid Waste	81.2
Sensitive Population	—
Asthma	62.9
Cardio-vascular	96.2
Low Birth Weights	48.0
Socioeconomic Factor Indicators	—
Education	51.5
Housing	89.6
Linguistic	5.64
Poverty	90.1
Unemployment	98.0

## 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	25.2662646
Employed	2.592069806
Median HI	10.93288849
Education	—
Bachelor's or higher	14.50019248
High school enrollment	100
Preschool enrollment	12.10060311
Transportation	—
Auto Access	39.18901578
Active commuting	70.80713461
Social	—
2-parent households	23.32862826
Voting	64.16014372
Neighborhood	—
Alcohol availability	63.63403054
Park access	27.73001412
Retail density	13.55062235
Supermarket access	41.55010907
Tree canopy	0.449121006
Housing	—
Homeownership	44.28333119
Housing habitability	53.0347748
Low-inc homeowner severe housing cost burden	46.7855768
Low-inc renter severe housing cost burden	34.64647761
Uncrowded housing	55.19055563
Health Outcomes	—
Insured adults	37.58501219
Arthritis	0.0

Asthma ER Admissions	34.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	5.5
Cognitively Disabled	24.2
Physically Disabled	6.0
Heart Attack ER Admissions	5.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	95.5
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	41.4
SLR Inundation Area	0.0
Children	25.4
Elderly	16.8
English Speaking	91.0
Foreign-born	9.6

Outdoor Workers	22.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	93.2
Traffic Density	31.8
Traffic Access	23.0
Other Indices	—
Hardship	79.5
Other Decision Support	—
2016 Voting	60.0

### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	46.0
Healthy Places Index Score for Project Location (b)	17.0
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	lot acreage based on site plan footprint
Construction: Construction Phases	construction start and end date per client input
Construction: Off-Road Equipment	trenching equipment assumed for infrastructure improvements
Operations: Vehicle Data	per traffic study

## Potential To Emit Calculator for Gasoline Dispensing Facilities - Inputs

5/8/2024 - Version 2.0

This workbook is designed to calculate the potential to emit of your gasoline dispensing facility.

The gasoline dispensing facility (GDF) owner/operator shall provide two pieces of information. These include whether or not the GDF is in a designated ozone nonattainment area and the number of vehicle refueling positions at the GDF for both gasoline and diesel vehicles. Ozone attainment/nonattainment designation status can be found at <http://www.epa.gov/oar/oaqps/greenbk/hindex.html>.

**Directions - Enter the facility's information in the yellow-highlighted boxes below. To determine the PTE of all new and/or existing equipment enter information for the entire GDF. To determine the emissions increases of your modified existing GDF, only enter information related to the equipment being modified or newly installed.**

The facility wide emissions will be displayed on the "Output" sheet.

### Facility Profile - User Inputs

**What is the number of gasoline only refueling positions at your dispensing facility?**

A vehicle refueling position is a single gasoline dispensing machine and its associated nozzle(s). The total number of vehicle refueling positions at your GDF is the number of gasoline-fueled vehicles that can be refueled simultaneously.

**What is the number of automotive/ nonroad diesel only refueling positions at your facility?**

A vehicle refueling position is a single diesel fuel dispenser and its associated nozzle(s). The total number of automotive/nonroad only diesel refueling positions at your facility is the number of automotive-type vehicles (passenger car, light truck) or nonroad equipment that can be refueled simultaneously. This count would include free standing aboveground tanks used to refuel nonroad equipment.

**What is the number of refueling positions at dispensers capable of refueling with either gasoline or diesel?**

These are normally multi-grade dispensers with separate gasoline and diesel fuel nozzles on the same dispenser. These are used primarily to refuel automotive and light truck type vehicles.

**What is the number of heavy-duty (HD) truck diesel refueling positions at your facility?**

A HD truck (e.g., over the road) refueling position is a single diesel fuel dispenser and its associated nozzle(s). The total number of HD truck refueling positions at your facility is the number of HD trucks that can be refueled simultaneously.

**What is your ozone designation status?**

Select either attainment or nonattainment based on the ozone designation status at the location of your gasoline dispensing facility. Ozone designation status can be found at <https://www.epa.gov/green-book> or you can contact your reviewing authority.

**What is the current year?**

Enter the current year (a number between 2013 and 2030).

## Potential To Emit Calculator for Gasoline Dispensing Facilities

5/8/2024 - Version 2.0

This sheet calculates the maximum fuel throughput, based on the number of vehicle refueling positions at your GDF. The calculations use fixed values for hours of operation, the time required for each refueling event, and the average amount of fuel dispensed per refueling event. The sheet then calculates the emissions of VOC from your GDF, based on emissions factors and the attainment status of your location. Note that while this calculator is designed primarily to address emissions of gasoline vapor, it includes algorithms to account for diesel fuel vapor as well and could even be used if the sole fuel dispensed was diesel.

HD truck diesel refueling positions	0			
Automotive dispensers with gasoline or diesel	0			
Automotive/Nonroad Diesel Refueling Positions	0			
Gasoline Vehicle Refueling Positions	14			
Location - Ozone Attainment Status	Nonattainment Area			
Max. Gasoline Throughput If No Automotive/nonroad Diesel	5,396,160	gallons/year	Max. Automotive/Nonroad Diesel Throughput	0 gallons/year
Max. Combined Automotive plus HD Truck Diesel Throughput	0	gallons/year	Max. HD Truck Diesel	0 gallons/year

Average time between start of refueling events	0.25	hours
Number of hours of GDF operation per day	24	hours/day
Number of days per year open for business	365	days/year
Number of gallons per refueling event	11	gal/refueling event
Percent of refueling events which use automotive diesel dispensers	5	%/year

Average time between start of refueling events	0.33	hours
Number of hours of GDF operation per day	24	hours/day
Number of days per year open for business	365	days/year
Number of gallons per refueling event	110	gal/refueling event

### Gasoline VOC Emissions -- apply these values to GDFs using USTs or ASTs<sup>7</sup>

Description <sup>4</sup>	VOC Emission factor (lb/1,000 gal)	Potential to Emit VOC (tons/yr)
Add'l Emissions for Small Volume GDFs <sup>6</sup>	11.5	0.000
Storage Tank Filling <sup>1</sup>	0.30	0.809
Storage Tank Breathing Losses <sup>2</sup>	0.25	0.675
Dispensing <sup>3</sup>	0.32	0.863
<b>Totals</b>	<b>0.870</b>	<b>2.347</b>

### Diesel VOC Emissions -- apply these values to GDFs using USTs or ASTs

Description <sup>4</sup>	VOC Emission factor <sup>5</sup> (lb/1,000 gal)	Potential to Emit VOC (ton/yr)
Storage Tank Filling	0.040	0.000
Storage Tank Breathing Losses	0.028	0.000
Dispensing	0.040	0.000
<b>Totals</b>	<b>0.108</b>	<b>0.000</b>

### Methodology

Maximum Throughput (gal/yr) = vehicle refueling positions / refueling event time (hrs) x hours of operation (hr/yr) x fuel dispensed (gal/refueling event)  
 Potential to Emit of VOC (tons/yr) = Maximum Throughput (gal/yr) x VOC Emission Factor (lb/1,000 gal) x 1 ton/2,000 lbs

### Notes:

Emission factors are from AP 42, Chapter 5.2, Transportation and Marketing of Petroleum Liquids, Table 5.2-7, (June 2008), except where noted.

<sup>1</sup> Assume Stage 1 controls are in place. 40 CFR 63, Subpart CCCCC requires that new or modified gasoline dispensing facilities with a monthly throughput greater than 100,000 gallons per month install Stage 1 vapor balance system that achieves a 90% emissions reduction.

<sup>2</sup> 40 CFR 63, Subpart CCCCC requires that new or modified gasoline dispensing facilities with a monthly throughput greater than 100,000 gallons per month install pressure/vacuum (PV) vent valves on the storage tank vent pipes. This model uses a 75 percent efficiency for PV valves in reducing breathing losses.

<sup>3</sup> The displacement VOC emission rate in lbs/1000 gallons depends on the gasoline Reid Vapor Pressure, the dispensed fuel temperature, and the difference between the temperature of the fuel in the tank and the dispensed fuel. For these purposes EPA calculated the uncontrolled displacement VOC emission rate in lbs/1000 gallons. EPA has used 10 psi RVP and national average summer-time temperatures for ozone attainment areas. This yields a value of about 10.8 lbs/1000 gallons. EPA has used 7 psi RVP and temperatures representative of the summer-time western US for ozone non-attainment areas. This yields a value of about 7.5 lbs/1000 gallons. In 76 FR 41723, EPA determined that 80% of the vehicle fleet will have ORVR installed as of 2014, and widespread use will be achieved on a national basis on June 30, 2013. Therefore, this value has been reduced by 80% for 2014 and increases each year subsequent to 2014 as fleet turnover occurs.

See memorandum to Public Docket EPA-HQ-OAR-2010-1076, Updated Data for ORVR Widespread Use Assessment, Glenn Passavant, OTAQ, 2012 and U.S.EPA, Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures, EPA-457/B-12-001, August 7, 2012.

<sup>4</sup> Even though spillage is a specific category of emissions related to fuel dispensing in AP-42, it is considered a fugitive emission for purposes of NSR permits and thus is not included here.

<sup>5</sup> Diesel emission factors were derived using the no.2 diesel true vapor pressure and vapor molecular weight from AP-42 Table 7.1-2 at 70F and equation 1 of section 5.2.2 with an S factor value of 1.45 for storage tank and vehicle tank filling and an S factor of 1.0 for breathing losses.

<sup>6</sup> GDFs with a gasoline throughput of < 10,000 gallons per month have higher storage tank filling and breathing loss emissions because they are not required to install Stage I vapor recovery controls under 40 CFR 63 CCCCC.

<sup>7</sup> Using these values for an AST assumes a 45% average ullage in a 2000 gal AST

Emissions Summary

This sheet shows the calculated pollutant specific emissions used to calculate risk. This is provided for comparison purposes. Emissions will automatically be calculated based on the inputs specified in the Variable Met Tool.

Annual Emissions						
Pollutant	Loading (lb/year)	Breathing (lb/year)	Refueling (lb/year)	Spillage (lb/year)	Hose Permeation (lb/year)	Total (lb/year)
Benzene	3.70E+00	5.92E-01	2.19E+00	9.16E+00	2.22E-01	1.59E+01
Ethyl Benzene	8.67E-01	1.39E-01	5.14E-01	1.67E+01	5.26E-02	1.89E+01
n-Hexane	1.48E+01	2.36E+00	8.76E+00	2.40E+01	8.86E-01	5.08E+01
Naphthalene	1.60E-03	5.76E-04	2.14E-03	2.25E+00	2.16E-04	2.26E+00
Propylene	2.91E+02	4.65E-03	1.73E+02	1.58E+03	1.75E-03	5.43E+02
Xylenes	3.31E+00	5.30E-01	1.97E+00	8.54E+01	1.99E-01	9.14E+01
Toluene	9.01E+00	1.44E+00	5.35E+00	7.28E+01	5.41E-01	8.92E+01

Hourly Emissions						
Pollutant	Loading (lb/hr)	Breathing (lb/hr)	Refueling (lb/hr)	Spillage (lb/hr)	Hose Permeation (lb/hr)	Total (lb/hr)
Benzene	7.25E-03	8.12E-05	3.01E-04	1.04E-03	3.05E-05	8.70E-03
Xylenes	6.72E-03	7.53E-05	2.79E-04	1.02E-02	2.82E-05	1.73E-02
Toluene	1.78E-02	1.99E-04	7.38E-04	8.58E-03	7.47E-05	2.74E-02

Emission Factors					
Scenario Selected	Loading (lb VOC/1000 gallons)	Breathing (lb VOC/1000 gallons)	Refueling (lb VOC/1000 gallons)	Spillage (lb VOC/1000 gallons)	Hose Permeation (lb VOC/1000 gallons)
EVR Phase I and EVR Phase II	0.15	0.024	0.089	0.24	0.009

Annual Emissions Weight % (Summer/Winter Average)			
CAS	Chemical	Vapor Weight %	Liquid Weight %
71432	Benzene	0.46%	0.71%
100414	Ethyl Benzene	0.11%	1.92%
110543	n-Hexane	1.82%	1.86%
91203	Naphthalene	0.00044%	0.17%
115071	Propylene	0.00036%	0.00023%
1330207	Xylenes	0.41%	6.59%
108883	Toluene	1.11%	5.63%

Hourly Emissions Weight % (Summer Fuel)			
CAS	Chemical	Vapor Weight %	Liquid Weight %
71432	Benzene	0.55%	0.70%
1330207	Xylenes	0.51%	6.91%
108883	Toluene	1.95%	5.90%

Throughput Summary		
Annual Throughput	5396160	gallons per year
Hourly Dispensing Throughput	616	gallons per hour
Hourly Loading Throughput	8800	gallons per hour

Emission Calculations Details

In order to calculate emissions for a particular pollutant use the following formulas:

- Annual Loading Emissions = Loading Emission Factor \* Annual Throughput \* Vapor Weight % Pollutant / 1000
- Annual Breathing Emissions = Breathing Emission Factor \* Annual Throughput \* Vapor Weight % Pollutant / 1000
- Annual Refueling Emissions = Refueling Emission Factor \* Annual Throughput \* Vapor Weight % Pollutant / 1000
- Annual Spillage Emissions = Spillage Emission Factor \* Annual Throughput \* Liquid Weight % Pollutant / 1000
- Annual Hose Permeation Emissions = Hose Permeation Emission Factor \* Annual Throughput \* Vapor Weight % Pollutant / 1000
- Total Annual Emissions = Annual Loading Emissions + Annual Breathing Emissions + Annual Refueling Emissions + Annual Spillage Emissions + Annual Hose Permeation Emissions

- Hourly Loading Emissions = Loading Emission Factor \* Hourly Loading Throughput \* Vapor Weight % Pollutant / 1000
- Hourly Breathing Emissions = Breathing Emission Factor \* Hourly Dispensing Throughput \* Vapor Weight % Pollutant / 1000
- Hourly Refueling Emissions = Refueling Emission Factor \* Hourly Dispensing Throughput \* Vapor Weight % Pollutant / 1000
- Hourly Spillage Emissions = Spillage Emission Factor \* Hourly Dispensing Throughput \* Liquid Weight % Pollutant / 1000
- Hourly Hose Permeation Emissions = Hose Permeation Emission Factor \* Hourly Dispensing Throughput \* Vapor Weight % Pollutant / 1000
- Total Hourly Emissions = Hourly Loading Emissions + Hourly Breathing Emissions + Hourly Refueling Emissions + Hourly Spillage Emissions + Hourly Hose Permeation Emissions

EVR Phase I & EVR Phase II				
Receptor Distance	Cancer Risk (chances/million)		Chronic	Acute
	Resident	Worker	HI	HI
118.9	2.6	0.2	0.0	0.0
183.2	1.3	0.1	0.0	0.0
248.4	0.8	0.1	0.0	0.0
84	4.5	0.4	0.0	0.1
Not Selected	0.0	0.0	0.0	0.0
Not Selected	0.0	0.0	0.0	0.0

### Summary of Inputs

Annual Throughput	5396160	gallons/year		
Max Hourly Dispensing	616	gallons/hour		
Max Hourly Loading	8800	gallons/hour		
Surface File Name	"C:\Gas Station HRA Spreadsheet Tool\KTRM_V9_ADJU\KTRM_v9.SFC"			
Profile File Name	"C:\Gas Station HRA Spreadsheet Tool\KTRM_V9_ADJU\KTRM_v9.pfl"			
Building downwash included	yes			
Emission Factors				
CARB default emission factors used	Loading	0.15	lb/gal	
	Breathing	0.024	lb/gal	
	Refueling	0.089	lb/gal	
	Spillage	0.24	lb/gal	
	Hose Permeation	0.009	lb/gal	
Fraction of time at home for >16	0.73	unitless		
Exposure Duration Resident	30	years		
Exposure Duration Worker	25	years		
Operating Schedule				
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
Dispersion Type	Urban Population 2035210			
Tool version	Version 1.0 - February 18, 2022			