APPELLATION HOTEL CONSTRUCTION HEALTH RISK & GREENHOUSE GAS ASSESSMENT

Petaluma, California

September 11, 2023

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Introduction

The purpose of this report is to address the potential health risk and greenhouse gas (GHG) impacts associated with the construction and operation of a proposed hotel development located at 2 Petaluma Boulevard South in Petaluma, California. Air quality and GHG impacts would be associated with demolition of existing uses and construction and operation of the hotel. Air pollutant emissions associated with the construction of the project were estimated using appropriate computer models. In addition, the potential health risk impacts from existing toxic air contaminant (TAC) sources affecting the nearby receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The existing 0.33-acre project site is currently vacant. The project proposes to construct a six-story, 93-room boutique hotel. The building would include a 3,209 square-foot (sf) ground floor seating area within a full-service restaurant, an attached 1,372-sf event space, a 5,514-sf seating area within a rooftop/open air bar, and 58 parking spaces in the below-grade parking garage.

Setting

The project is located in Sonoma County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

<u>Air Pollutants of Concern</u>

High ozone concentrations in the air basin are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form ozone concentrations. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ambient ozone concentrations. The highest ozone concentrations in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone concentrations aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant in the air basin. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter concentrations aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

[1] Bay Area Air Quality Management District, *2022 CEQA Guidelines*, April 2023.

Toxic Air Contaminants

TACs are a broad class of compounds known to cause morbidity or mortality, often because they cause cancer. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure of TACs can result in adverse health effects, they are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects from diesel exhaust exposure a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. Health risks from TACs are estimated using the Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines, which were published in February of 2015 and incorporated in BAAQMD's current CEQA guidance.[2]

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, people over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, infants and small children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are the residents in multi-family housing to the east. There are also additional receptors at further distances to the south of the site. This project would not introduce new sensitive receptors (i.e., residents) to the area.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County, and southern Sonoma County.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The

[2] OEHHA, *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February2015.

District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[3] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program has been implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses has been used to develop emission reduction activities in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. Seven areas have been identified by BAAQMD as impacted communities. They include Eastern San Francisco, Richmond/San Pablo, Western Alameda, San José, Vallejo, Concord, and Pittsburgh/Antioch. The project site is not within any of the BAAQMD CARE areas.

Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[4] The BAAQMD has identified several overburdened areas within its boundaries. However, the project site is not within an overburdened area as the Project site is scored at the 60th percentile on CalEnviroScreen.[5]

BAAQMD CEQA Air Quality Guidelines

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. In 2023, the BAAQMD revised the *California Environmental Quality Act* (*CEQA) Air Quality Guidelines* that include significance thresholds to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The current BAAQMD guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They include assessment methodologies for air toxics, odors, and GHG emissions. The current BAAQMD guidelines and thresholds were used in this analysis and are summarized in Table 1.[6] Air quality impacts and health risks are considered potentially significant if they exceed these thresholds.

[3] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program.
[4] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en.
[5] OEHAA, CalEnviroScreen 4.0 Maps https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/page/CalEnviroScreen-4_0/
[6] Bay Area Air Quality Management District, *2022 CEQA Guidelines*, April 2023.

Table 1. BAAQMD CEQA Significance Thresholds

<table>
<tr><th rowspan="2">Criteria Air Pollutant</th><th colspan="4">Construction Thresholds</th></tr>
<tr><th colspan="4">Average Daily Emissions (lbs./day)</th></tr>
<tr><td>ROG</td><td colspan="4">54</td></tr>
<tr><td>NO_x</td><td colspan="4">54</td></tr>
<tr><td>PM_{10}</td><td colspan="4">82 (Exhaust)</td></tr>
<tr><td>$PM_{2.5}$</td><td colspan="4">54 (Exhaust)</td></tr>
<tr><td>CO</td><td colspan="4">Not Applicable</td></tr>
<tr><td>Fugitive Dust (PM_{10}/$PM_{2.5}$)</td><td colspan="4">Best Management Practices (BMPs)*</td></tr>
<tr><th>Health Risks and Hazards</th><th colspan="2">Single Sources/ Individual Project</th><th colspan="2">Combined Sources (Cumulative from all sources within 1000-foot zone of influence)</th></tr>
<tr><td>Excess Cancer Risk</td><td>>10 in a million</td><td rowspan="3">OR Compliance with Qualified Community Risk Reduction Plan</td><td>>100 in a million</td><td rowspan="3">OR Compliance with Qualified Community Risk Reduction Plan</td></tr>
<tr><td>Hazard Index</td><td>>1.0</td><td>>10.0</td></tr>
<tr><td>Incremental annual $PM_{2.5}$</td><td>>0.3 $\mu g/m^3$</td><td>>0.8 $\mu g/m^3$</td></tr>
<tr><th colspan="5">Greenhouse Gas Emissions</th></tr>
<tr><td>Land Use Projects – (Must Include A or B)</td><td colspan="4">A. Projects must include, at a minimum, the following project design elements:
1. Buildings
a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
2. Transportation
a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
i. Residential projects: 15 percent below the existing VMT per capita
ii. Office projects: 15 percent below the existing VMT per employee
iii. Retail projects: no net increase in existing VMT
a. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.
B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).</td></tr>
<tr><td colspan="5">Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.
* BAAQMD strongly recommends implementing all feasible fugitive dust management practices especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses.</td></tr>
</table>

Source: Bay Area Air Quality Management District, 2022

The BAAQMD recommends all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and consider impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less than significant if BMPs are implemented. The project would be required to implement the following BMPs recommended by BAAQMD, which have been adopted by the City of Petaluma as Standard Permit Conditions, during all phases of construction to reduce dust and other particulate matter emissions.

Basic Best Management Practices / Standard Permit Conditions: **Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. The contractor shall implement the following BMPs that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

BAAQMD strongly encourages enhanced BMPs for construction sites near schools, residential areas, or other sensitive land uses. Enhanced measures include:

- Limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.
- Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Minimize the amount of excavated material or waste materials stored at the site.
- Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.

City of Petaluma General Plan 2025

The City of Petaluma General Plan 2025[7] includes policies and programs to reduce exposure of the City's sensitive population to exposure of air pollution and TACs. The following policies and programs are applicable to the proposed project:

4-P-15 Improve air quality by reducing emissions from stationary point sources of air pollution (e.g., equipment at commercial and industrial facilities) and stationary area sources (e.g., wood-burning fireplaces & gas powered lawn mowers) which cumulatively emit large quantities of emissions.

A. Continue to work with the Bay Area Air Quality Management District to achieve emissions reductions for non-attainment pollutants; including carbon monoxide, ozone, and PM10, by implementation of air pollution control measures as required by State and federal statutes. The BAAQMD's CEQA Guidelines should be used as the foundation for the City's review of air quality impacts under CEQA.

B. Continue to use Petaluma's development review process and the CEQA regulations to evaluate and mitigate the local and cumulative effects of new development on air quality.

C. Continue to require development projects to abide by the standard construction dust abatement measures included in BAAQMD's CEQA Guidelines. These measures would reduce exhaust and particulate emissions from construction and grading activities.

D. Reduce emissions from residential and commercial uses by requiring the following:

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[7] City of Petaluma, City of *Petaluma: General Plan 2025*, May 2008. Web: https://cityofpetaluma.org/documents/general-plan/

- Use of high efficiency heating and other appliances, such as cooking equipment, refrigerators, and furnaces, and low NOx water heaters in new and existing residential units;
- Compliance with or exceed requirements of CCR Title 24 for new residential and commercial buildings;
- Incorporation of passive solar building design and landscaping conducive to passive solar energy use for both residential and commercial uses, i.e., building orientation in a south to southeast direction, encourage planting of deciduous trees on west sides of structures, landscaping with drought resistant species, and use of groundcovers rather than pavement to reduce heat reflection;
- Encourage the use of battery-powered, electric, or other similar equipment that does not impact local air quality for nonresidential maintenance activities;
- Provide natural gas hookups to fireplaces or require residential use of EPA-certified wood stoves, pellet stoves, or fireplace inserts. Current building code standards generally ban the installation of open-hearth, wood burning fireplaces and wood stoves in new construction. It does, however, allow for the use of low-polluting wood stoves and inserts in fireplaces approved by the federal Environmental Protection Agency, as well as fireplaces fueled by natural gas.

4-P-16 To reduce combustion emissions during construction and demolition phases, the contractor of future individual projects shall encourage the inclusion in construction contracts of the following requirements or measures shown to be equally effective:

- Maintain construction equipment engines in good condition and in proper tune per manufacturer's specification for the duration of construction;
- Minimize idling time of construction related equipment, including heavy-duty equipment, motor vehicles, and portable equipment;
- Use alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline);
- Use add-on control devices such as diesel oxidation catalysts or particulate filters;
- Use diesel equipment that meets the ARB's 2000 or newer certification standard for off-road heavy-duty diesel engines;
- Phase construction of the project;
- Limit the hours of operation of heavy-duty equipment.

It is noted the City is in the process of updating its general plan. It began the process in 2020. Plan Vision materials were adopted by the City Council in mid-2022, the City's Housing Element was adopted in March 2023, and other plan elements will continue to be developed through 2023.[8]

[8] City of Petaluma, *General Plan Update*. Web: https://www.planpetaluma.org/documents

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2022 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size were input to CalEEMod. The CalEEMod model output along with construction inputs are included in *Attachment 1*.

CalEEMod Modeling

Land Use Inputs

The proposed project land uses were entered into CalEEMod as described in Table 2.

Table 2. Summary of Project Land Use Inputs[9]

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Hotel	93	Room	41,708	0.33
Quality Restaurant	4.39	1,000-sf	4,394	
Enclosed Parking with Elevator	58	Spaces	12,500	

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario, including equipment quantities, average hours per day, total number of workdays, and schedule, were provided by the project applicant (included in *Attachment 1*). The construction schedule assumed that the earliest possible start date would be November 2024 and would be completed over a period of approximately 19 months, or 414 construction workdays. The earliest year of full operation was assumed to be 2027.

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the soil imported and/or exported to the site and the estimate of concrete truck trips to and from the site. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. Daily haul trips for grading were developed by CalEEMod using the provided soil import/export volumes. The number of total concrete round haul trips were estimated for the project and converted to daily one-way trips, assuming

[9] The CalEEMod model is limited in regard to land use inputs. Therefore, the rooftop bar land use is included as part of the hotel land use. Restaurant square-footage is consistent with the project's traffic analysis, which is slightly less than the total of the proposed restaurant and event space square-footage. However, the difference in square footage is small (i.e., less than 1,000 sf) and would have a negligible increase in construction emissions. Therefore, it would not change the analysis findings.

two trips per delivery. These values are shown in the project construction equipment worksheet included in *Attachment 1*.

<u>Summary of Computed Construction Period Emissions</u>

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions and dividing those emissions by the number of active workdays during that year. Table 3 shows the annualized average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 3, predicted annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

Table 3. Construction Period Emissions

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions (Tons)				
2024-2025*	0.15	1.21	0.03	0.03
2026	0.19	0.06	<0.01	<0.01
Average Daily Construction Emissions (pounds/day)				
2024-2025* (305 construction workdays)	0.95	7.93	0.21	0.20
2026 (109 construction workdays)	3.52	1.15	0.04	0.03
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

* Includes 2 months from 2024.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site deposit mud on local streets, which is an additional source of airborne dust after it dries. The BAAQMD recommends all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and consider impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less than significant if BMPs are implemented. Petaluma General Policy 4-P-15 Part C and Policy 4-P-16 specifies that projects are to abide by the standard construction dust abatement measures included in BAAQMD's CEQA Guidelines to reduce exhaust, combustion, and particulate emissions from construction, demolition, and grading activities. Therefore, the project would be required to implement the following BAAQMD BMPs, which have been adopted by the City as Standard Permit Conditions, during all phases of construction.

***Standard Permit Conditions / Basic BMPs:* Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. The contractor shall implement the following BMPs that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Mitigation Measure AQ-1

The measures above are consistent with BAAQMD-recommended basic BMPs for reducing fugitive dust contained in the BAAQMD CEQA Air Quality Guidelines. For this analysis, only the basic set of BMPs are required as the unmitigated fugitive dust emissions from construction are below the BAAQMD single-source threshold.

Operational Emissions Screening

Chapter 4 of the BAAQMD CEQA Guidelines includes screening levels for criteria air pollutants. These screening levels provide a conservative indication of whether implementing a proposed project of a certain size could result in potentially significant criteria air pollutants impacts. In accordance with BAAQMD CEQA Guidelines, the *Mixed Land Use Screening Tool for Criteria Pollutants* was used. After inputting the project's land uses as described in Table 1, it was estimated the project would not exceed the operational criteria pollutant thresholds and further pollutant analysis was not required. The results of the *Mixed Land Use Screening Tool* are included in *Attachment 1*.

Construction Health Risk Impacts

Project health risk impacts can occur either by generating emissions of TACs and fine particulate matter ($PM_{2.5}$) or by introducing a new sensitive receptor in proximity to an existing source of TACs/$PM_{2.5}$. Construction activity would temporarily generate emissions of DPM from equipment and trucks and dust ($PM_{2.5}$) that could affect nearby sensitive receptors. A construction health risk assessment was conducted to address impacts on the surrounding off-site sensitive receptors.

There may be sources of existing TACs and localized air pollutants in the vicinity of the project. The cumulative impact of the existing sources of TACs upon the existing sensitive receptors, including the project's contribution was assessed.

Health risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations, and computing the Hazard Index (HI) for non-cancer health risks. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust emissions pose health risks for sensitive receptors such as surrounding residents. The primary health risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[10] This assessment included dispersion modeling to predict the offsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction Period Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles. Total uncontrolled DPM emissions were estimated to be 0.03 tons (62 pounds) and fugitive dust emissions ($PM_{2.5}$) to be 0.12 tons (231 pounds) from all construction stages. The on-road emissions are a result of haul truck travel during grading activities, worker travel, and vendor deliveries during construction. A trip length of half a mile was used to represent vehicle travel while at or near the construction site. It was assumed that the emissions from on-road vehicles traveling at or near the site would occur at the construction site.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (i.e., residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis

[10] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

of these types of emission activities for CEQA projects.[11] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

To represent the construction equipment exhaust emissions, an area source was used with an emission release height of 20 feet (6 meters).[12] The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would do for a point source (exhaust stack). Therefore, the release height from an area source used to represent emissions from sources with plume rise, such as construction equipment, was based on the height the exhaust plume is expected to achieve, not just the height of the top of the exhaust pipe.

For modeling fugitive $PM_{2.5}$ emissions, an area source with a near-ground level release height of 7 feet (2 meters) was used. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Figure 1 shows the project construction site and receptors.

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data prepared by Lakes Environmental for modeling in the City of Petaluma for use with AERMOD. Construction emissions were modeled as occurring daily between 7:00 a.m. 4:00 p.m., per the provided construction schedule. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2024-2026 period were calculated at nearby sensitive receptors using the model. Receptor heights of 5 feet (1.5 meters), 20 feet (6.1 meters), and 28 feet (8.7 meters) were used to represent the breathing height on the first through third floors of nearby single- and multi-family residences. [13]

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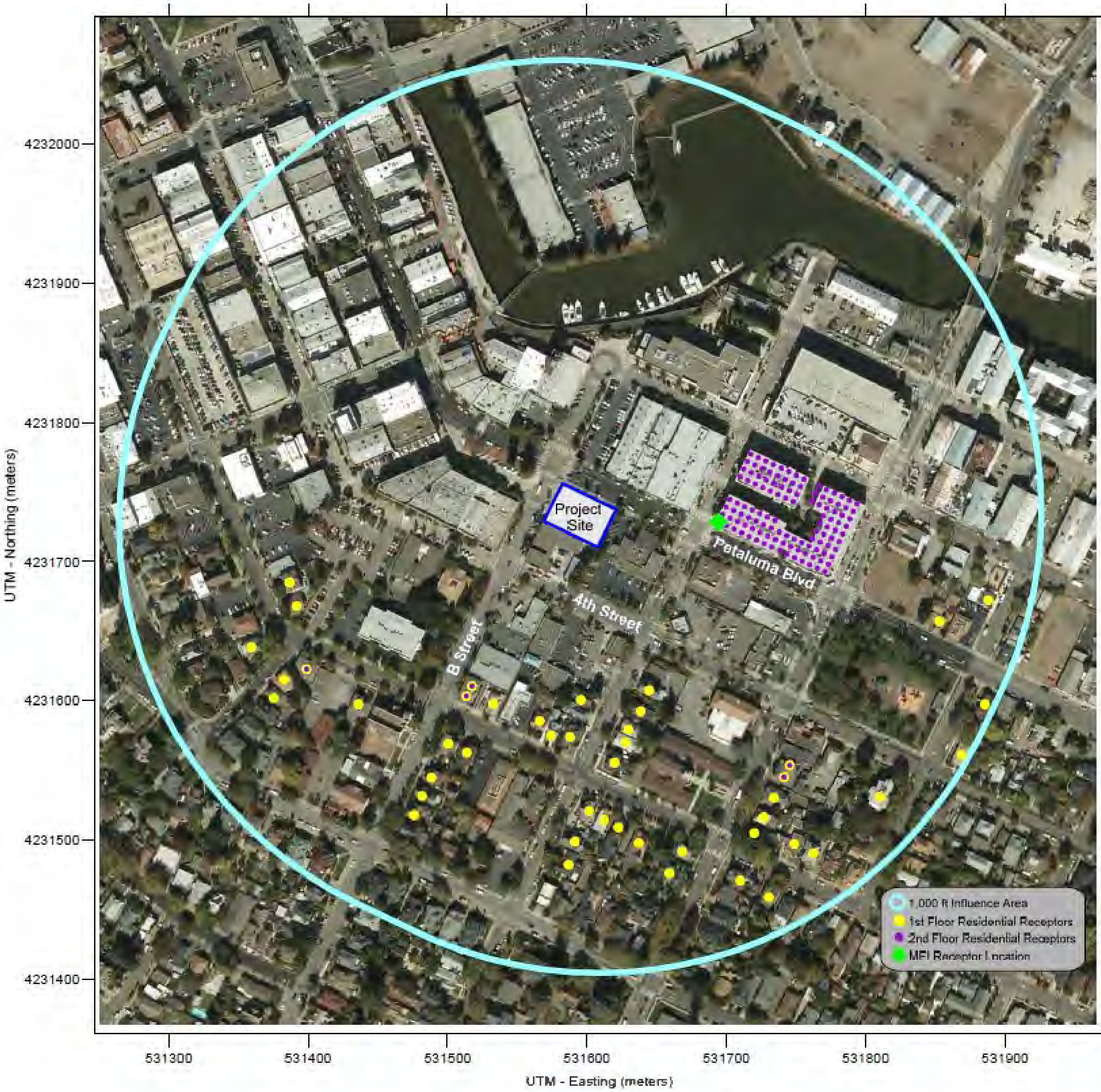
[11] BAAQMD, 2023, *Appendix E of the 2022 BAAQMD CEQA Guidelines.* April.
[12] California Air Resource Board, 2007. *Proposed Regulation for In-Use Off-Road Diesel Vehicles, Appendix D: Health Risk Methodology*. April. Web: https://ww3.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm
[13] Bay Area Air Quality Management District, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0. May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

Figure 1. Locations of Project Construction Site, Off-Site Sensitive Receptors, and Maximum TAC Impacts (MEI)



Summary of Construction Health Risk Impacts at the Off-Site MEI

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the BAAQMD CEQA guidance for age sensitivity factors and exposure parameters. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Infant, child, and adult exposures were assumed to occur at all residences during the entire construction period.

Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated. The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI value was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation refence exposure level of 5 µg/m^3.

The modeled maximum annual DPM and $PM_{2.5}$ concentrations were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEI). Results of this assessment indicated that the construction MEI was located at a unit on the second floor (20 feet above ground) of the multi-family building east of the project site. Table 4 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and HI for project related construction activities affecting the construction MEI. *Attachment 2* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

As shown in Table 4, the maximum cancer risks, annual $PM_{2.5}$ concentration, and Hazard Index from uncontrolled (i.e., unmitigated) construction activities at the MEI location would not exceed the BAAQMD single-source significance threshold.

Table 4. Construction Risk Impacts at the Off-Site MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ (µg/m^3)	Hazard Index
Project Construction	Unmitigated	7.07 (infant)	0.20*	0.01
	BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

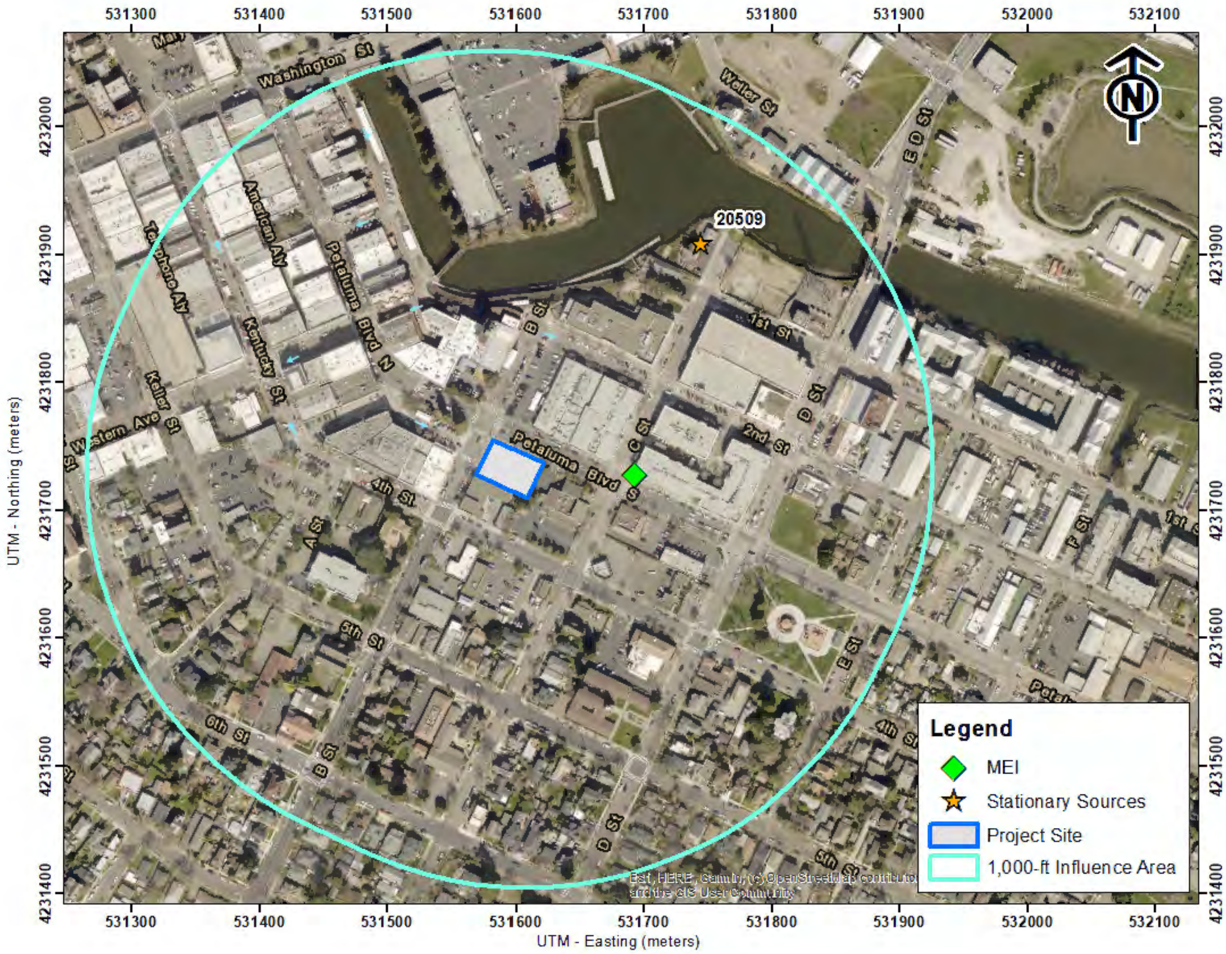
* Annual $PM_{2.5}$ concentration does not include BMPs in the impact.

Cumulative Health Risks of all TAC Sources at the Off-Site Project MEI

Cumulative health risk assessments look at all substantial sources of TACs located within 1,000 feet of a project site (i.e., influence area) that can affect sensitive receptors. These sources include rail lines, highways, busy surface streets, and stationary sources identified by BAAQMD.

A review of BAAQMD's geographic information systems (GIS) screening maps identified the existing health risks from various sources at the MEI. One stationary source with the potential to affect the MEI was located within 1,000 feet of the project site. In addition, screening-level impacts from nearby roadways were estimated. There are no rail lines located within 1,000 feet of the project site, so the screening-level impacts from rail lines were not evaluated. Figure 2 shows the project area included within the influence area and the location of the MEI. Details of the cumulative screening and health risk calculations are included in *Attachment 3.*

Figure 2. Project Site, Project MEI, and Nearby TAC Sources



<u>Local Roadways</u>

The project site is located in the downtown Petaluma area with arterial roadways nearby (see Figure 2). Screening-level cancer risks, $PM_{2.5}$ concentrations, and HI associated with traffic on the local roadways were estimated using BAAQMD's GIS data files (i.e., raster files). BAAQMD raster files were produced using AERMOD and 20x20-meter emissions grid, EMFAC2021 data for vehicle emissions and fleet mix, and includes Appendix E of the Air District's CEQA Air Quality Guidance for risk assessment assumptions. Note that BAAQMD's screening values are not adjusted for age sensitivity or exposure duration and are considered higher than values that would be obtained with refined modeling methods. The local cumulative roadway screening-level cancer risk, $PM_{2.5}$ concentration, and HI impacts at the project MEI are listed in Table 5.

BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2021* GIS map website.[14] This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for OEHHA guidance. One source was identified within 1,000 feet of the project site using this tool, a diesel generator. The BAAQMD GIS website provided screening risks and hazards for this source. Therefore, a stationary source information request was not required to be submitted to BAAQMD.

The screening level risks and hazards provided by BAAQMD for the stationary source was adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. Health risk impacts from the stationary source upon the MEI are reported in Table 5.

Summary of Cumulative Risks at the Project MEI

Table 5 reports both the project and cumulative health risk impacts at the sensitive receptors most affected by construction (i.e., the MEI). As shown, the project would not exceed the single-source or cumulative-source thresholds for cancer risk, annual $PM_{2.5}$ concentration, and HI.

Table 5. Impacts from Combined Sources at Construction MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	7.07 (infant)	0.20	0.01
	BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
Cumulative Impacts				
Cumulative Roadways - BAAQMD Screening Raster Data		21.79	0.22	0.04
City of Petaluma (Facility #20509, Generator), MEI at 600 feet		0.25	<0.01	<0.01
Cumulative Total	Unmitigated	29.11	<0.43	<0.06
	BAAQMD Cumulative Source Threshold	***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

[14] BAAQMD, Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

GREENHOUSE GAS EMISSIONS

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2, CH_4, and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2022, total gross nationwide GHG emissions were 5,215.6 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[15] These emissions were lower than peak

[15] United States Environmental Protection Agency, 2022. *Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2020*. February. Web: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2020 emissions.[16] In 2020, GHG emissions from statewide emitting activities were 369.2 MMT CO_2e. The 2020 emissions have decreased by 25 percent since peak levels in 2004 and are 35.3 MMT CO_2e lower than 2019 emissions level and almost 62 MMT CO_2e below the State's 2020 GHG limit of 431 MMT CO_2e. Per capita GHG emissions in California have dropped from a 2001 peak of 13.8 MT CO_2e per person to 9.3 MT CO_2e per person in 2020.

Recent Regulatory Actions for GHG Emissions

Executive Order S-3-05 – California GHG Reduction Targets

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

Assembly Bill 32 – California Global Warming Solutions Act (2006)

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05, which has a target of reducing GHG emissions 80 percent below 1990 levels.

The first Scoping Plan for AB 32 was adopted by CARB in December 2008. Its most recent update was completed in December of 2022[17]. It contains the State's main strategies to achieve carbon neutrality by 2045. This plan extends and expands upon the earlier versions with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. It also takes the step of adding carbon neutrality as a science-based guide and touchstone for California's climate work. Measures to achieve carbon neutrality include rapidly moving to zero emission vehicles (ZEV), removing natural gas as an option for space conditioning, increasing the number of solar arrays and wind turbines, and scaling up renewable hydrogen for hard-to-electrify end uses.

Senate Bill 375 – California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives

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[16] CARB. 2022. *California Greenhouse Gas Emission for 2000 to 2020*. Web: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf
[17] CARB. 2022. Final 2022 Scoping Plan Update and Appendices. Web: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents

for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g., ABAG and MTC) to align their regional transportation, housing, and land use plans to reduce VMT and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

Senate Bill 350 - Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Executive Order B-30-15 & Senate Bill 32 GHG Reduction Targets – 2030 GHG Reduction Target

In April 2015, Governor Brown signed EO B-30-15, which extended the goals of AB 32, setting a GHG emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed Senate Bill (SB) 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*. [18] While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB has drafted a 2022 Scoping Plan Update to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The 2022 draft plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 or earlier.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as a driving principle.
- Incorporates the contribution of natural and working lands to the state's GHG emissions, as well as its role in achieving carbon neutrality.

[18] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

- Relies on the most up to date science, including the need to deploy all viable tools, including carbon capture and sequestration as well a direct air capture.
- Evaluates multiple options for achieving our GHG and carbon neutrality targets, as well as the public health benefits and economic impacts associated with each.

The Scoping Plan was updated in 2022 and lays out how the state can get to carbon neutrality by 2045 or earlier. It is the first Scoping Plan that adds carbon neutrality as a science-based guide and touchstone beyond statutorily established emission reduction targets.[19]

The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The 2022 Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and to not only obtain the statewide goals, but cost-effectively achieve carbon-neutrality by 2045 or earlier. In the 2022 Scoping Plan, CARB recommends:

- VMT per capita reduced 12% below 2019 levels by 2030 and 22% below 2019 levels by 2045.
- 100% of Light-duty vehicle sales are zero emissions vehicles (ZEV) by 2035.
- 100% of medium duty/heavy duty vehicle sales are ZEV by 2040.
- 100% of passenger and other locomotive sales are ZEV by 2030.
- 100% of line haul locomotive sales are ZEV by 2035.
- All electric appliances in new residential and commercial building beginning 2026 (residential) and 2029 (commercial).
- 80% of residential appliance sales are electric by 2030 and 100% of residential appliance sales are electric by 2035.
- 80% of commercial appliance sales are electric by 2030 and 100% of commercial appliance sales are electric by 2045.

SB 743 Transportation Impacts

Senate Bill 743 required lead agencies to abandon the old "level of service" metric for evaluating a project's transportation impacts, which was based solely on the amount of delay experienced by motor vehicles. In response, the Governor's Office of Planning and Research (OPR) developed a VMT metric that considered other factors such as reducing GHG emissions and developing multimodal transportation[20]. A VMT-per-capita metric was adopted into the CEQA Guidelines Section 15064.3 in November 2017. Given current baseline per-capita VMT levels computed by CARB in the 2030 Scoping Plan of 22.24 miles per day for light-duty vehicles and 24.61 miles per day for all vehicle types, the reductions needed to achieve the 2050 climate goal are 16.8 percent for light-duty vehicles and 14.3 percent for all vehicle types combined. Based on

[19] https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents
[20] Governor's Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December.

this analysis (as well as other factors), OPR recommended using a 15-percent reduction in per capita VMT as an appropriate threshold of significance for evaluating transportation impacts.

Executive Order B-55-18 – Carbon Neutrality

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant state agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal.

Senate Bill 100 – Current Renewable Portfolio Standards

In September 2018, SB 100 was signed by Governor Brown to revise California's RPS program goals, furthering California's focus on using renewable energy and carbon-free power sources for its energy needs. The bill would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retails sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2027 the target would be 52 percent, and by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

California Building Standards Code – Title 24 Part 11 & Part 6

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[21] The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2022 California Building Standard Code) was effective as of January 1, 2023.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2022 Energy Code) replaced the 2019 Energy Code as of January 1,2023. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.[22]

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[21] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.

[22] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

Requirements for electric vehicle (EV) charging infrastructure are set forth in Title 24 of the California Code of Regulations. The CALGreen standards consist of a set of mandatory standards required for new development, as well as two more voluntary standards known as Tier 1 and Tier 2. The CalGreen 2022 standards require deployment of additional EV chargers in various building types, including multifamily residential and nonresidential land uses. They include requirements for both EV capable parking spaces and the installation of Level 2 EV supply equipment for multifamily residential and nonresidential buildings. The 2022 CALGreen standards include requirements for both EV readiness, installation of EV chargers, and include both mandatory requirements and more aggressive voluntary Tier 1 and Tier 2 provisions. Providing EV charging infrastructure that meets current CALGreen requirements will not be sufficient to power the anticipated more extensive level of EV penetration in the future that is needed to meet SB 30 climate goals.

CEC studies have identified the most aggressive electrification scenario as putting the building sector on track to reach the carbon neutrality goal by 2045.[23] Installing new natural gas infrastructure in new buildings will interfere with this goal. To meet the State's goal, communities have been adopting "Reach" codes that prohibit natural gas connections in new and remodeled buildings.

Advanced Clean Cars

The Advanced Clean Cars Program, originally adopted by CARB in 2012, was designed to bring together CARB's traditional passenger vehicle requirements to meet federal air quality standards and also support California's AB 32 goals to develop and implement programs to reduce GHG emissions back down to 1990 levels by 2020, a goal achieved in 2016 as a result of numerous emissions reduction programs.

Advanced Clean Cars II (ACC II) is phase two of the original rule. ACC II establishes a year-by-year process, starting in 2026, so all new cars and light trucks sold in California will be zero-emission vehicles by 2035, including plug-in hybrid electric vehicles. The regulation codifies the light-duty vehicle goals set out in Governor Newsom's Executive Order N-79-20. Currently, 16 percent of new light-duty vehicles sold in California are zero emissions or plug-in hybrids. By 2030, 68 percent of new vehicles sold in California would be zero emissions and 100 percent by 2035.

<u>City of Petaluma General Plan 2025</u>

The City of Petaluma General Plan 2025 includes policies and programs to reduce exposure of the City's sensitive population to exposure of air pollution, TACs, and GHG emissions. The following policies and programs are applicable to the proposed project:

4-P-15 Improve air quality by reducing emissions from stationary point sources of air pollution (e.g., equipment at commercial and industrial facilities) and stationary area sources (e.g.,

[23] California Energy Commission. 2021. F*inal Commission Report: California Building Decarbonization Assessment. Publication Number CEC-400-2021-006-CMF*.August

wood-burning fireplaces & gas powered lawn mowers) which cumulatively emit large quantities of emissions.

A. Continue to work with the Bay Area Air Quality Management District to achieve emissions reductions for non-attainment pollutants; including carbon monoxide, ozone, and PM10, by implementation of air pollution control measures as required by State and federal statutes. The BAAQMD's CEQA Guidelines should be used as the foundation for the City's review of air quality impacts under CEQA.

B. Continue to use Petaluma's development review process and the CEQA regulations to evaluate and mitigate the local and cumulative effects of new development on air quality.

C. Continue to require development projects to abide by the standard construction dust abatement measures included in BAAQMD's CEQA Guidelines. These measures would reduce exhaust and particulate emissions from construction and grading activities.

D. Reduce emissions from residential and commercial uses by requiring the following:
   - Use of high efficiency heating and other appliances, such as cooking equipment, refrigerators, and furnaces, and low NOx water heaters in new and existing residential units;
   - Compliance with or exceed requirements of CCR Title 24 for new residential and commercial buildings;
   - Incorporation of passive solar building design and landscaping conducive to passive solar energy use for both residential and commercial uses, i.e., building orientation in a south to southeast direction, encourage planting of deciduous trees on west sides of structures, landscaping with drought resistant species, and use of groundcovers rather than pavement to reduce heat reflection;
   - Encourage the use of battery-powered, electric, or other similar equipment that does not impact local air quality for nonresidential maintenance activities;
   - Provide natural gas hookups to fireplaces or require residential use of EPA-certified wood stoves, pellet stoves, or fireplace inserts. Current building code standards generally ban the installation of open-hearth, wood burning fireplaces and wood stoves in new construction. It does, however, allow for the use of low-polluting wood stoves and inserts in fireplaces approved by the federal Environmental Protection Agency, as well as fireplaces fueled by natural gas.

4-P-24 Comply with AB 32 and its governing regulations to the full extent of the City's jurisdictional authority.

4-P-25 To the full extent of the City's jurisdictional authority, implement any additional adopted State legislative or regulatory standards, policies and practices designed to reduce greenhouse gas emissions, as those measures are developed.

4-P-26 Implement all measures identified in the municipal Climate Action Plan to meet the municipal target set in Resolution 2005-118 (20% below 2000 levels by 2010).

4-P-30 Continue to monitor new technology and innovative sustainable design practices for applicability to ensure future development minimizes or eliminates the use of fossil fuel and GHG-emitting energy consumption.

Petaluma Climate Emergency Framework

The Climate Emergency Framework[24] is the result of collaboration of the Petaluma Climate Action Commission. Its purpose is to outline principles to guide the City's ongoing response to and discussion about the climate crisis and to guide and inform subsequent policies and implementation strategies. The City Council adopted the Climate Emergency Framework at its January 11, 2021 special meeting, directing staff to incorporate the Framework's goals into future planning, policy, and action to help Petaluma be carbon neutral by 2030. Based on four sections, the framework will guide the City as it works to avoid catastrophic climate change and adapt to its expected impacts.

The following goals and action items from the City of Petaluma's Climate Emergency Framework are applicable to this project:

Mitigation and Sequestration Goals

- Develop a Climate Action Plan outlining the actions the City will take to achieve its climate goals.
- Eliminate emissions from the building sector through zero-emissions new construction (emissions embedded in materials and those emitted during construction and operation), building retrofits, appliance replacements, and use of renewable generated clean electricity.
- Reduce consumption emissions to the level necessary to meet our overall climate goals.

Mitigation and Sequestration Action Items

- Mandate all-electric new construction to eliminate fossil fuel use in new buildings.
- Require all new construction, additions, and major rehab projects to use low-embodied carbon materials, starting with concrete.

BAAQMD GHG Significance Thresholds

On April 20, 2022, BAAQMD adopted new thresholds of significance for operational GHG emissions from land use projects for projects beginning the CEQA process. [25] The current thresholds of significance are:

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[24] City of Petaluma, *Climate Emergency Framework*, January 11, 2021. Web: https://storage.googleapis.com/proudcity/petalumaca/uploads/2021/02/Climate-Action-Framework_Final.pdf

[25] Justification Report: BAAQMD CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Project and Plans. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

A. Projects must include, at a minimum, the following project design elements:
   a. Buildings
      i. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).
      ii. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
   b. Transportation
      i. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) <u>or meet a locally adopted Senate Bill 743 VMT target</u>, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
         1. Residential Projects: 15 percent (16.8 percent in Petaluma) below the existing VMT per capita
         2. Office Projects: 15 percent (16.8 percent in Petaluma) below the existing VMT per employee
         3. Retail Projects: no net increase in existing VMT
      ii. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

New land use projects are required to meet either section A or B from the above list, not both, to be considered less than significant.

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below.

<u>CalEEMod Modeling</u>

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described below. CalEEMod output is included in *Attachment 1*.

Land Uses

All project land uses were subject to CalEEMod as described above in the construction criteria pollutant section.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year of operation would be 2027 if construction begins in late 2024. Emissions associated with build-out later than 2027 would be lower.

Traffic Information

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rate provided by the traffic consultant was entered into the model.[26] The project would produce approximately 1,071 daily trips when including the *25 Percent Valet Increase*. When considering the *12 Percent Internal Capture Reduction* adjustments applied in the traffic analysis, the project would then produce 966 net daily trips. The daily trip generation was calculated using ITE trip generation rates, the size of the project land uses, and the adjusted total automobile trips. The Saturday and Sunday trip rates were derived by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate with the project-specific daily weekday trip rate. The default trip lengths and trip types specified by CalEEMod were used.

Energy

CalEEMod defaults for energy use were used, which include the 2019 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. The CalEEMod default emission factor of 39.46 pounds of CO_2 per megawatt of electricity produced by Sonoma Clean Power was used.

The City of Petaluma adopted a municipal code in May 2021 that prohibits the use of natural gas infrastructure in all new construction projects.[27] Therefore, for this project, natural gas was set to zero and the energy use associated with natural gas was reassigned to electricity use in CalEEMod.

Other Inputs

Default model assumptions for emissions associated with solid waste generation were used. Wastewater treatment was changed to 100-percent aerobic conditions to represent the use of town services (i.e., the project would not send wastewater to septic tanks or facultative lagoons).

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[26] W-Trans, *Traffic Impact Study for the Petaluma Appellation Hotel Project*, July 20, 2023.
[27] City of Petaluma, All-Electric Code, Web: https://cityofpetaluma.org/allelectric/

Construction GHG Emissions

GHG emissions associated with construction were computed at 481 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction related GHG emissions, though the California Office of Planning and Research (OPR) recommends quantifying emissions and disclosing that GHG emissions would occur during construction, even in cases where BAAQMD does not. BAAQMD encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable.

Operational GHG Emissions

The CalEEMod model was used to estimate daily emissions associated with the operation of the proposed project. As shown in Table 6 for informational purposes, annual GHG emissions resulting from the operation of the proposed project are predicted to be 801 MT of CO_2e in 2027.

Table 6. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project in 2027
Mobile	749
Area	1
Energy Consumption	19
Water Usage	3
Solid Waste Generation	17
Refrigerants	12
Total (MT CO_{2e}/year)	801

For this impact to be considered less than significant, it must be consistent with a local GHG reduction strategy (Threshold B) or meet the minimum project design elements recommended by BAAQMD (Threshold A). The City of Petaluma has not adopted a GHG reduction strategy that meets the CEQA Guidelines. Therefore, the project must comply with Threshold A to be considered a less-than-significant impact. Threshold A requires the project:

1. Avoid construction of new natural gas connections,
    - Project Conforms – the Project would comply with the City Municipal Code prohibiting natural gas and only allowing all electric infrastructure in new buildings.
2. Avoid wasteful or inefficient use of electricity,
    - Project Conforms – the Project would meet CALGreen Building Standards Code requirements that are considered to be energy efficient.
3. Include electric vehicle (EV) charging infrastructure that meets current Building Code CALGreen Tier 2 compliance, and
    - Project Conforms – the Project would include electric vehicle charging infrastructure that meets or exceeds current Building Code CALGreen Tier 2 compliance.

4. Reduce VMT per service population by 16.8 percent over regional average.
    - Project Conforms – The City of Petaluma has a VMT analysis methodology and threshold that meets SB 743 targets. The traffic analysis provided by the applicant included a conforming VMT analysis.[28] The site's proximity to the Downtown Petaluma SMART station qualified the project for VMT screening. Beyond VMT screening, proximity to two bus transit hubs, anticipated shifts in hotel guest VMT, and the site's presence in a zone with low employee VMT support a less-than-significant VMT finding. Therefore, the Project meets the VMT threshold.

The project is anticipated to comply with four of the four requirements of Threshold A. This would lead to a less-than-significant impact for the project's GHG emissions.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The City of Petaluma enforces its building codes, which aim to reduce GHG emissions. Therefore, if individual projects conform to City building Codes, they will not conflict with local plans, policies, or regulations applicable to GHG emissions. The project is anticipated to be constructed in conformance with at minimum the 2022 CalGreen and the Title 24 Building Codes, which requires high-efficiency water fixtures, water-efficient irrigation systems, and compliance with current energy efficiency standards. Compliance with these standards ensures compliance with State and federal plans, policies, and regulations applicable to GHG emissions.

[28] W-Trans, *Traffic Impact Study for the Petaluma Appellation Hotel Project,* July 20, 2023.

Supporting Documentation

Attachment 1 includes the CalEEMod output for project construction and operation emissions, as well as any modeling assumptions. The Mixed Land Use Screening Tool is also included.

Attachment 2 is the health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. The AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 3 includes the cumulative health risk calculations from existing sources affecting the construction MEI.

Attachment 1: CalEEMod Modeling Inputs and Outputs and BAAQMD Mixed Land Use Screening Tool

Construction Criteria Air Pollutants							
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	PM2.5 Fugitive	**CO2e**	
Year	Tons					MT	
Construction Equipment							
2024-2025	0.15	1.21	0.03	0.03	0.14	468.87	
2026	0.19	0.06	0.002	0.002	0.001	11.87	
	Total Construction Emissions						
Tons	0.34	1.27	0.03	0.03		480.74	
Pounds/Workdays	*Average Daily Emissions*					Workdays	
2024-2025	0.95	7.93	0.21	0.20			**305**
2026	3.52	1.15	0.04	0.03			**109**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			
	Total Construction Emissions						
Pounds	4.47	9.09	0.25	0.23		0.00	
Average	1.63	6.15	0.17	0.16		0.00	414
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			

Operational Criteria Air Pollutants				
Unmitigated	ROG	NOX	Total PM10	Total PM2.5
Year	Tons			
Total	0.86	0.51	0.74	0.19
	Existing Use Emissions			
Total				
	Net Annual Operational Emissions			
Tons/year	0.86	0.51	0.74	0.19
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**
	Average Daily Emissions			
Pounds Per Day	4.73	2.81	4.03	1.06
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**

Category	**CO2e**			
	Project	Existing	Project 2030	Existing
Mobile	749.22			
Area	0.86			
Energy	19.41			
Water	2.58			
Waste	17.15			
Refrig.	11.93			
TOTAL	801.14	0.00	0.00	0.00
Net GHG Emissions		801.14		0.00

Number of Days Per Year					
2024-2025	11/1/24	12/31/25	426	305	
2026	1/1/26	6/1/26	152	109	
			578	**414**	***Total Workdays***

Phase	**Start Date**	**End Date**	**Days/Week**	**Workdays**
Site Preparation	11/1/2024	11/10/2024	5	6
Grading	11/10/2024	2/12/2025	5	68
Trenching	2/12/2025	6/18/2025	5	91

Air Quality/Noise Construction Information Data Request

Project Name: **Petaluma Appelation Hotel**

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size	**93 Dwelling Units (Rooms**	**0.33 total project acres disturbed**		
	41,708 s.f. residential			**Pile Driving? Y/N? Yes**
	4,394 s.f. Restaurant Bar			
	______ s.f. office/commercial			**Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? Y/N? ___No_**
	______ s.f. other, specify:			**IF YES (if BOTH separate values) -->**
	12,500 s.f. parking garage	**58 spaces**		**Kilowatts/Horsepower: _________**
	______ s.f. parking lot	**______ spaces**		**Fuel Type: ____________**
Construction Days (i.e, M-F)	**M-Saturday**	**to**	**18 Months**	**Location in project (Plans Desired if Available):**
Construction Hours	**7AM**	**am to**	**4PM pm**	

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Demolition	**Start Date:**		**Total phase:**				**Overall Import/Export Volumes**
		End Date:						
		81	0.73			#DIV/0!	0	**Demolition Volume**
		158	0.38			#DIV/0!	0	Square footage of buildings to be demolished
		247	0.4			#DIV/0!	0	(*or* total tons to be hauled)
		97	0.37			#DIV/0!	0	_0_ square feet *or*
	Other Equipment?							_0_ Hauling volume (tons)
								Any pavement demolished and hauled? __0_ cubic yards
	Site Preparation	**Start Date:**	**11/1/2024**	**Total phase:**	**6**			
		End Date:	**11/10/2024**					
		187	0.41			0	0	
		247	0.4			0	0	
1	Tractors/Loaders/Backhoes	97	0.37	7	6	7	1507	
1	*Other Equipment?* Scrapers	423	0.48	8	6	8	9746	
	Grading / Excavation	**Start Date:**	**11/10/2024**	**Total phase:**	**68**			
		End Date:	**2/12/2025**					**Soil Hauling Volume**
		158	0.38			0	0	Export volume = ___15,000__ cubic yards?
		187	0.41			0	0	Import volume =0cubic yards?
1	Rubber Tired Dozers	247	0.4	8	68	8	53747	
		81	0.73			0	0	
1	Tractors/Loaders/Backhoes	97	0.37	7	68	7	17084	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**2/12/2025**	**Total phase:**	**91**			
		End Date:	**6/18/2025**					
		97	0.37			0	0	
1	Concrete Truck/ Pump	158	0.38	8	91	8	43709	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**6/18/2025**	**Total phase:**	**110**			**Cement Trucks? _YES_ Total Round-Trips or 50,000 cubic yards**
		End Date:	**11/18/2025**					
		231	0.29			0	0	Trucks Electric? (Y/N) _N__ Otherwise assumed diesel
2	Forklifts	89	0.2	7	110	7	27412	
1	Generator Sets	84	0.74	8	110	8	54701	Or temporary line power? (Y/N) __Y_
1	Tractors/Loaders/Backhoes	97	0.37	6	110	6	23687	
1	Welders	46	0.45	8	110	8	18216	
	Other Equipment?							
Building - Interior/Architectural Coating		**Start Date:**	**11/18/2025**	**Total phase:**	**130**			
		End Date:	**5/18/2026**					
1	Air Compressors	78	0.48	6	130	6	29203	
	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**5/18/2026**	**Total phase:**	**11**			
		Start Date:	**6/1/2026**					
		9	0.56			0	0	
1	Pavers	130	0.42	8	11	8	4805	**Asphalt? __0_ cubic yards or ___0_ round trips?**
1	Paving Equipment	132	0.36	8	11	8	4182	
1	Rollers	80	0.38	8	11	8	2675	
		97	0.37			0	0	
	Other Equipment?							
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs

Complete one sheet for each project component

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Traffic Consultant Trip Gen							CalEEMod Default		
Land Use			Size	Daily Trips	New Trips	Weekday Trip Gen	Weekday	Sat	Sun
Hotel	Room		93	511	546	***5.87***	8.36	8.19	5.95
Internal Capture Reduction		-12%		*-61*			*Rev*	***5.75***	***4.18***
Valet Additon		12.50%		*96*					
Quality Restaurant	ksf		4.39	368	420	***95.67***	83.84	90.04	71.97
Internal Capture Reduction		-12%		*-44*			*Rev*	***102.75***	***82.13***
Valet Additon		12.50%		*96*					
			Total	*966*					

Table 6 – Trip Generation Summary

Land Use	Units	Daily		PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out
Base Project Trips							
Hotel	93 rooms	5.49	511	0.40	37	18	19
Internal Capture		-12%	*-61*	-12%	*-4*	*-2*	*-2*
Quality Restaurant	4.39 ksf	83.84	368	7.80	34	23	11
*Internal Capture***			*-44*		*-4*	*-2*	*-2*
Base Project Trips Sub-Total			**774**		**63**	**37**	**26**
Valet Trips							
Valet Percentage*		25%	192	25%	16	9	7
Total			**966**		**79**	**46**	**33**

Note: ksf = 1,000 square feet; *Valet Percentage of Base Project Trips Sub-Total; ** Opposite end of internally captured trips generated by the restaurant

Bay Area Air Quality Management District

Multi-land Use Screening Tool Overview

This screening tool helps to determine whether the daily construction or operational emissions associated with a proposed land use development project with multiple land use types would exceed BAAQMD's average daily thresholds.

Instructions

Use the drop-down menus to select the land use category and land use type for each type of land use included in the project. Enter the proposed size of each land use based on the default units that are autopopulated in column D.

The tool will estimate whether the project may exceed the construction thresholds, operational thresholds, or both, and whether further analysis is needed before making a significance determination. This tool will not work for projects which have construction-related activities overlapping with operational activities, and vice versa.

Construction and Operation Screening Tool				
Land Use Category	**Land Use Type**	**Unit**	**Project Land Use Size**	**Has Overlapping Construction Phases?**
Recreational	Hotel	Rooms	93.0	☐
Recreational	Quality Restaurant	KSF	4.4	☐
Parking	Enclosed Parking w/ Elevato	Spaces	58.0	☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
		Exceeds Construction Threshold?	NO	
		Exceeds Operational Threshold?	NO	
		BAAQMD's Recommendation	Further Analysis Not Required	

Developed by

ASCENT ENVIRONMENTAL

23-111 Appellation Hotel Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	23-111 Appellation Hotel
Construction Start Date	11/1/2024
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	3.80
Location	2 Petaluma Blvd S, Petaluma, CA 94952, USA
County	Sonoma-San Francisco
City	Petaluma
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	987
EDFZ	2
Electric Utility	Sonoma Clean Power
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

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

Hotel	93.0	Room	0.33	41,708	0.00	0.00	—	—
Enclosed Parking with Elevator	58.0	Space	0.00	12,500	0.00	0.00	—	—
Quality Restaurant	4.39	1000sqft	0.00	4,394	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	4.25	12.5	0.26	1.53	1.79	0.25	0.42	0.66	6,856
Mit.	3.98	12.6	0.18	1.53	1.70	0.17	0.42	0.59	6,856
% Reduced	6%	-1%	32%	—	5%	31%	—	12%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	4.54	23.9	0.90	8.21	9.11	0.83	3.64	4.47	6,901
Mit.	4.25	13.3	0.18	3.56	3.65	0.17	1.52	1.61	6,901
% Reduced	6%	44%	80%	57%	60%	79%	58%	64%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	1.05	4.99	0.12	1.06	1.18	0.11	0.42	0.53	2,396

Mit.	1.04	4.57	0.06	0.72	0.78	0.06	0.25	0.31	2,396
% Reduced	1%	9%	50%	32%	34%	49%	41%	43%	—
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.19	0.91	0.02	0.19	0.22	0.02	0.08	0.10	397
Mit.	0.19	0.83	0.01	0.13	0.14	0.01	0.05	0.06	397
% Reduced	1%	9%	50%	32%	34%	49%	41%	43%	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2025	0.79	12.5	0.26	1.53	1.79	0.25	0.42	0.66	6,856
2026	4.25	4.45	0.18	0.10	0.29	0.17	0.02	0.19	1,000
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2024	2.16	23.9	0.90	8.21	9.11	0.83	3.64	4.47	6,121
2025	4.54	13.7	0.49	7.13	7.62	0.45	3.52	3.97	6,901
2026	3.84	0.87	0.02	0.04	0.06	0.02	0.01	0.03	174
Average Daily	—	—	—	—	—	—	—	—	—
2024	0.14	1.64	0.06	0.74	0.80	0.06	0.36	0.42	436
2025	0.66	4.99	0.12	1.06	1.18	0.11	0.42	0.53	2,396
2026	1.05	0.34	0.01	0.01	0.02	0.01	< 0.005	0.01	71.7
Annual	—	—	—	—	—	—	—	—	—
2024	0.03	0.30	0.01	0.14	0.15	0.01	0.07	0.08	72.1
2025	0.12	0.91	0.02	0.19	0.22	0.02	0.08	0.10	397
2026	0.19	0.06	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.9

2.3. Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2025	0.50	12.6	0.18	1.53	1.70	0.17	0.42	0.59	6,856
2026	3.98	4.49	0.07	0.10	0.17	0.06	0.02	0.09	1,000
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2024	0.53	13.2	0.10	3.56	3.65	0.10	1.52	1.61	6,121
2025	4.25	13.3	0.18	3.12	3.20	0.17	1.47	1.55	6,901
2026	3.84	0.87	0.02	0.04	0.06	0.02	0.01	0.03	174
Average Daily	—	—	—	—	—	—	—	—	—
2024	0.03	0.86	0.01	0.32	0.33	0.01	0.15	0.16	436
2025	0.50	4.57	0.06	0.72	0.78	0.06	0.25	0.31	2,396
2026	1.04	0.35	0.01	0.01	0.02	0.01	< 0.005	0.01	71.7
Annual	—	—	—	—	—	—	—	—	—
2024	0.01	0.16	< 0.005	0.06	0.06	< 0.005	0.03	0.03	72.1
2025	0.09	0.83	0.01	0.13	0.14	0.01	0.05	0.06	397
2026	0.19	0.06	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.9

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	5.54	3.21	0.06	5.26	5.31	0.05	1.34	1.39	6,504
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Unmit.	4.94	3.67	0.05	5.26	5.31	0.05	1.34	1.39	6,188
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	4.73	2.81	0.04	3.99	4.03	0.04	1.02	1.06	4,839
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.86	0.51	0.01	0.73	0.74	0.01	0.19	0.19	801

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	4.01	3.19	0.05	5.26	5.31	0.05	1.34	1.39	6,185
Area	1.54	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	10.5
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	117
Water	—	—	—	—	—	—	—	—	15.6
Waste	—	—	—	—	—	—	—	—	104
Refrig.	—	—	—	—	—	—	—	—	72.1
Total	5.54	3.21	0.06	5.26	5.31	0.05	1.34	1.39	6,504
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	3.82	3.67	0.05	5.26	5.31	0.05	1.34	1.39	5,880
Area	1.12	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	117
Water	—	—	—	—	—	—	—	—	15.6
Waste	—	—	—	—	—	—	—	—	104
Refrig.	—	—	—	—	—	—	—	—	72.1
Total	4.94	3.67	0.05	5.26	5.31	0.05	1.34	1.39	6,188
Average Daily	—	—	—	—	—	—	—	—	—

Mobile	3.40	2.80	0.04	3.99	4.03	0.04	1.02	1.05	4,525
Area	1.32	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.19
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	117
Water	—	—	—	—	—	—	—	—	15.6
Waste	—	—	—	—	—	—	—	—	104
Refrig.	—	—	—	—	—	—	—	—	72.1
Total	4.73	2.81	0.04	3.99	4.03	0.04	1.02	1.06	4,839
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.62	0.51	0.01	0.73	0.74	0.01	0.19	0.19	749
Area	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.86
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	19.4
Water	—	—	—	—	—	—	—	—	2.58
Waste	—	—	—	—	—	—	—	—	17.1
Refrig.	—	—	—	—	—	—	—	—	11.9
Total	0.86	0.51	0.01	0.73	0.74	0.01	0.19	0.19	801

2.6. Operations Emissions by Sector, Mitigated

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

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	4.01	3.19	0.05	5.26	5.31	0.05	1.34	1.39	6,185
Area	1.54	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	10.5
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	117
Water	—	—	—	—	—	—	—	—	15.6
Waste	—	—	—	—	—	—	—	—	104
Refrig.	—	—	—	—	—	—	—	—	72.1

Total	5.54	3.21	0.06	5.26	5.31	0.05	1.34	1.39	6,504
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	3.82	3.67	0.05	5.26	5.31	0.05	1.34	1.39	5,880
Area	1.12	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	117
Water	—	—	—	—	—	—	—	—	15.6
Waste	—	—	—	—	—	—	—	—	104
Refrig.	—	—	—	—	—	—	—	—	72.1
Total	4.94	3.67	0.05	5.26	5.31	0.05	1.34	1.39	6,188
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	3.40	2.80	0.04	3.99	4.03	0.04	1.02	1.05	4,525
Area	1.32	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.19
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	117
Water	—	—	—	—	—	—	—	—	15.6
Waste	—	—	—	—	—	—	—	—	104
Refrig.	—	—	—	—	—	—	—	—	72.1
Total	4.73	2.81	0.04	3.99	4.03	0.04	1.02	1.06	4,839
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.62	0.51	0.01	0.73	0.74	0.01	0.19	0.19	749
Area	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.86
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	19.4
Water	—	—	—	—	—	—	—	—	2.58
Waste	—	—	—	—	—	—	—	—	17.1
Refrig.	—	—	—	—	—	—	—	—	11.9
Total	0.86	0.51	0.01	0.73	0.74	0.01	0.19	0.19	801

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	9.26	0.36	—	0.36	0.33	—	0.33	2,156
Dust From Material Movement	—	—	—	1.06	1.06	—	0.11	0.11	—
Onsite truck	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	0.15	0.01	—	0.01	0.01	—	0.01	35.4
Dust From Material Movement	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.87
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
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	42.0
Vendor	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
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.70
Vendor	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
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 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
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Site Preparation (2024) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	5.65	0.04	—	0.04	0.04	—	0.04	2,156
Dust From Material Movement	—	—	—	0.41	0.41	—	0.04	0.04	—
Onsite truck	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	0.09	< 0.005	—	< 0.005	< 0.005	—	< 0.005	35.4
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
Annual	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.87
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
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	42.0
Vendor	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
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.70
Vendor	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
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 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
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2024) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.16	11.4	0.51	—	0.51	0.47	—	0.47	1,638
Dust From Material Movement	—	—	—	6.57	6.57	—	3.37	3.37	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.16	0.05	—	0.05	0.05	—	0.05	167
Dust From Material Movement	—	—	—	0.67	0.67	—	0.34	0.34	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.01	—	0.01	0.01	—	0.01	27.6
Dust From Material Movement	—	—	—	0.12	0.12	—	0.06	0.06	—
Onsite truck	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	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	42.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	3.17	0.02	0.50	0.52	0.02	0.14	0.16	2,244
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.31
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.32	< 0.005	0.05	0.05	< 0.005	0.01	0.02	228
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.71

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	37.8

3.4. Grading (2024) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	4.37	0.03	—	0.03	0.03	—	0.03	1,638
Dust From Material Movement	—	—	—	2.56	2.56	—	1.31	1.31	—
Onsite truck	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	0.44	< 0.005	—	< 0.005	< 0.005	—	< 0.005	167
Dust From Material Movement	—	—	—	0.26	0.26	—	0.13	0.13	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	27.6
Dust From Material Movement	—	—	—	0.05	0.05	—	0.02	0.02	—
Onsite truck	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	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	42.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	3.17	0.02	0.50	0.52	0.02	0.14	0.16	2,244
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.31
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.32	< 0.005	0.05	0.05	< 0.005	0.01	0.02	228
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	37.8

3.5. Grading (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	10.0	0.44	—	0.44	0.40	—	0.40	1,638
Dust From Material Movement	—	—	—	6.57	6.57	—	3.37	3.37	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.85	0.04	—	0.04	0.03	—	0.03	138

Dust From Material Movement	—	—	—	0.55	0.55	—	0.28	0.28	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.15	0.01	—	0.01	0.01	—	0.01	22.8
Dust From Material Movement	—	—	—	0.10	0.10	—	0.05	0.05	—
Onsite truck	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	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	41.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	3.05	0.02	0.50	0.52	0.02	0.14	0.16	2,203
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.25	< 0.005	0.04	0.04	< 0.005	0.01	0.01	185
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.05	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	30.7

3.6. Grading (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	4.37	0.03	—	0.03	0.03	—	0.03	1,638
Dust From Material Movement	—	—	—	2.56	2.56	—	1.31	1.31	—
Onsite truck	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	0.37	< 0.005	—	< 0.005	< 0.005	—	< 0.005	138
Dust From Material Movement	—	—	—	0.22	0.22	—	0.11	0.11	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.8
Dust From Material Movement	—	—	—	0.04	0.04	—	0.02	0.02	—
Onsite truck	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	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	41.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	3.05	0.02	0.50	0.52	0.02	0.14	0.16	2,203
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	0.25	< 0.005	0.04	0.04	< 0.005	0.01	0.01	185
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.05	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	30.7

3.7. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	4.25	0.17	—	0.17	0.16	—	0.16	799
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	4.25	0.17	—	0.17	0.16	—	0.16	799
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	1.28	0.05	—	0.05	0.05	—	0.05	241
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.23	0.01	—	0.01	0.01	—	0.01	39.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.00	0.20	0.20	0.00	0.05	0.05	218
Vendor	0.01	0.36	< 0.005	0.07	0.07	< 0.005	0.02	0.02	279
Hauling	0.10	7.14	0.06	1.23	1.29	0.06	0.35	0.41	5,456
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	0.00	0.20	0.20	0.00	0.05	0.05	203
Vendor	0.01	0.37	< 0.005	0.07	0.07	< 0.005	0.02	0.02	278
Hauling	0.09	7.54	0.06	1.23	1.29	0.06	0.35	0.41	5,447
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.00	0.06	0.06	0.00	0.01	0.01	61.7
Vendor	< 0.005	0.11	< 0.005	0.02	0.02	< 0.005	0.01	0.01	83.9
Hauling	0.03	2.24	0.02	0.37	0.39	0.02	0.10	0.12	1,643
Annual	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.2
Vendor	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	13.9
Hauling	0.01	0.41	< 0.005	0.07	0.07	< 0.005	0.02	0.02	272

3.8. Building Construction (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	4.43	0.09	—	0.09	0.08	—	0.08	799
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.21	4.43	0.09	—	0.09	0.08	—	0.08	799
Onsite truck	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	1.33	0.03	—	0.03	0.02	—	0.02	241
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.24	< 0.005	—	< 0.005	< 0.005	—	< 0.005	39.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.00	0.20	0.20	0.00	0.05	0.05	218
Vendor	0.01	0.36	< 0.005	0.07	0.07	< 0.005	0.02	0.02	279
Hauling	0.10	7.14	0.06	1.23	1.29	0.06	0.35	0.41	5,456
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	0.00	0.20	0.20	0.00	0.05	0.05	203
Vendor	0.01	0.37	< 0.005	0.07	0.07	< 0.005	0.02	0.02	278
Hauling	0.09	7.54	0.06	1.23	1.29	0.06	0.35	0.41	5,447
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.00	0.06	0.06	0.00	0.01	0.01	61.7
Vendor	< 0.005	0.11	< 0.005	0.02	0.02	< 0.005	0.01	0.01	83.9
Hauling	0.03	2.24	0.02	0.37	0.39	0.02	0.10	0.12	1,643
Annual	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.2
Vendor	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	13.9
Hauling	0.01	0.41	< 0.005	0.07	0.07	< 0.005	0.02	0.02	272

3.9. Paving (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	3.56	0.16	—	0.16	0.15	—	0.15	758
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.11	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.8
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.78
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.06	0.06	0.00	0.01	0.01	65.2
Vendor	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.84
Vendor	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
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.31
Vendor	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

3.10. Paving (2026) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	3.60	0.04	—	0.04	0.04	—	0.04	758
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.11	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.8
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.78
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.06	0.06	0.00	0.01	0.01	65.2
Vendor	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.84
Vendor	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
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.31
Vendor	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

3.11. Architectural Coating (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	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	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.5
Architectural Coatings	0.32	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.91
Architectural Coatings	0.06	—	—	—	—	—	—	—	—
Onsite truck	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	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	40.5
Vendor	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
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.52
Vendor	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
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Architectural Coating (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	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	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.5
Architectural Coatings	0.32	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.91
Architectural Coatings	0.06	—	—	—	—	—	—	—	—
Onsite truck	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	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	40.5
Vendor	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
Average Daily	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.52
Vendor	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
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	0.02	—	0.02	0.02	—	0.02	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	0.02	—	0.02	0.02	—	0.02	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.23	0.01	—	0.01	0.01	—	0.01	36.2
Architectural Coatings	1.00	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.99
Architectural Coatings	0.18	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.04	0.04	0.00	0.01	0.01	42.8
Vendor	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	39.8
Vendor	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
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.8
Vendor	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
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.80
Vendor	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

3.14. Architectural Coating (2026) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	0.02	—	0.02	0.02	—	0.02	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	0.02	—	0.02	0.02	—	0.02	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.23	0.01	—	0.01	0.01	—	0.01	36.2
Architectural Coatings	1.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.99
Architectural Coatings	0.18	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.04	0.04	0.00	0.01	0.01	42.8

Vendor	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	39.8
Vendor	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
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.8
Vendor	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
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.80
Vendor	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

3.15. Trenching (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.62	0.03	—	0.03	0.02	—	0.02	81.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.62	0.03	—	0.03	0.02	—	0.02	81.9
Onsite truck	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	0.16	0.01	—	0.01	0.01	—	0.01	20.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.38
Onsite truck	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	0.00	0.02	0.02	0.00	< 0.005	< 0.005	22.2
Vendor	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.02	0.02	0.00	< 0.005	< 0.005	20.6
Vendor	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
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.18
Vendor	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
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.86
Vendor	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

3.16. Trenching (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.62	0.03	—	0.03	0.02	—	0.02	81.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.62	0.03	—	0.03	0.02	—	0.02	81.9
Onsite truck	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	0.16	0.01	—	0.01	0.01	—	0.01	20.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.38
Onsite truck	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	0.00	0.02	0.02	0.00	< 0.005	< 0.005	22.2
Vendor	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.02	0.02	0.00	< 0.005	< 0.005	20.6
Vendor	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

Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.18
Vendor	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
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.86
Vendor	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

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	2.19	1.75	0.03	2.88	2.91	0.03	0.73	0.76	3,385
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quality Restaurant	1.81	1.45	0.02	2.38	2.40	0.02	0.61	0.63	2,800
Total	4.01	3.19	0.05	5.26	5.31	0.05	1.34	1.39	6,185
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	2.09	2.01	0.03	2.88	2.91	0.03	0.73	0.76	3,218
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quality Restaurant	1.73	1.66	0.02	2.38	2.40	0.02	0.61	0.63	2,662
Total	3.82	3.67	0.05	5.26	5.31	0.05	1.34	1.39	5,880

Annual	—	—	—	—	—	—	—	—	—
Hotel	0.36	0.33	0.01	0.50	0.51	< 0.005	0.13	0.13	512
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quality Restaurant	0.26	0.18	< 0.005	0.23	0.23	< 0.005	0.06	0.06	237
Total	0.62	0.51	0.01	0.73	0.74	0.01	0.19	0.19	749

4.1.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	2.19	1.75	0.03	2.88	2.91	0.03	0.73	0.76	3,385
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quality Restaurant	1.81	1.45	0.02	2.38	2.40	0.02	0.61	0.63	2,800
Total	4.01	3.19	0.05	5.26	5.31	0.05	1.34	1.39	6,185
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	2.09	2.01	0.03	2.88	2.91	0.03	0.73	0.76	3,218
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quality Restaurant	1.73	1.66	0.02	2.38	2.40	0.02	0.61	0.63	2,662
Total	3.82	3.67	0.05	5.26	5.31	0.05	1.34	1.39	5,880
Annual	—	—	—	—	—	—	—	—	—
Hotel	0.36	0.33	0.01	0.50	0.51	< 0.005	0.13	0.13	512
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quality Restaurant	0.26	0.18	< 0.005	0.23	0.23	< 0.005	0.06	0.06	237
Total	0.62	0.51	0.01	0.73	0.74	0.01	0.19	0.19	749

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	70.6
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	5.24
Quality Restaurant	—	—	—	—	—	—	—	—	41.3
Total	—	—	—	—	—	—	—	—	117
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	70.6
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	5.24
Quality Restaurant	—	—	—	—	—	—	—	—	41.3
Total	—	—	—	—	—	—	—	—	117
Annual	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	11.7
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.87
Quality Restaurant	—	—	—	—	—	—	—	—	6.85
Total	—	—	—	—	—	—	—	—	19.4

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	70.6
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	5.24
Quality Restaurant	—	—	—	—	—	—	—	—	41.3
Total	—	—	—	—	—	—	—	—	117
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	70.6
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	5.24
Quality Restaurant	—	—	—	—	—	—	—	—	41.3
Total	—	—	—	—	—	—	—	—	117
Annual	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	11.7
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.87
Quality Restaurant	—	—	—	—	—	—	—	—	6.85
Total	—	—	—	—	—	—	—	—	19.4

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Quality Restaurant	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Quality Restaurant	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Hotel	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Quality Restaurant	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Quality Restaurant	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Quality Restaurant	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Hotel	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Quality Restaurant	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Consumer Products	0.99	—	—	—	—	—	—	—	—
Architectural Coatings	0.13	—	—	—	—	—	—	—	—
Landscape Equipment	0.42	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	10.5
Total	1.54	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	10.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Consumer Products	0.99	—	—	—	—	—	—	—	—
Architectural Coatings	0.13	—	—	—	—	—	—	—	—
Total	1.12	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—

Consumer Products	0.18	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.86
Total	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.86

4.3.1. Mitigated

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

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Consumer Products	0.99	—	—	—	—	—	—	—	—
Architectural Coatings	0.13	—	—	—	—	—	—	—	—
Landscape Equipment	0.42	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	10.5
Total	1.54	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	10.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Consumer Products	0.99	—	—	—	—	—	—	—	—
Architectural Coatings	0.13	—	—	—	—	—	—	—	—
Total	1.12	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Consumer Products	0.18	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—

Landscape Equipment	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.86
Total	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.86

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	9.95
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	5.63
Total	—	—	—	—	—	—	—	—	15.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	9.95
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	5.63
Total	—	—	—	—	—	—	—	—	15.6
Annual	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	1.65
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	0.93
Total	—	—	—	—	—	—	—	—	2.58

4.4.1. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	9.95
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	5.63
Total	—	—	—	—	—	—	—	—	15.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	9.95
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	5.63
Total	—	—	—	—	—	—	—	—	15.6
Annual	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	1.65
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	0.93
Total	—	—	—	—	—	—	—	—	2.58

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	96.0
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	7.56
Total	—	—	—	—	—	—	—	—	104
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	96.0
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	7.56
Total	—	—	—	—	—	—	—	—	104
Annual	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	15.9
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	1.25
Total	—	—	—	—	—	—	—	—	17.1

4.5.1. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	96.0
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	7.56

Total	—	—	—	—	—	—	—	—	104
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	96.0
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	7.56
Total	—	—	—	—	—	—	—	—	104
Annual	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	15.9
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Quality Restaurant	—	—	—	—	—	—	—	—	1.25
Total	—	—	—	—	—	—	—	—	17.1

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	65.2
Quality Restaurant	—	—	—	—	—	—	—	—	6.87
Total	—	—	—	—	—	—	—	—	72.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	65.2
Quality Restaurant	—	—	—	—	—	—	—	—	6.87
Total	—	—	—	—	—	—	—	—	72.1
Annual	—	—	—	—	—	—	—	—	—

Hotel	—	—	—	—	—	—	—	—	10.8
Quality Restaurant	—	—	—	—	—	—	—	—	1.14
Total	—	—	—	—	—	—	—	—	11.9

4.6.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	65.2
Quality Restaurant	—	—	—	—	—	—	—	—	6.87
Total	—	—	—	—	—	—	—	—	72.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	65.2
Quality Restaurant	—	—	—	—	—	—	—	—	6.87
Total	—	—	—	—	—	—	—	—	72.1
Annual	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	10.8
Quality Restaurant	—	—	—	—	—	—	—	—	1.14
Total	—	—	—	—	—	—	—	—	11.9

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—

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

4.7.2. Mitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	11/1/2024	11/10/2024	5.00	6.00	—
Grading	Grading	11/10/2024	2/12/2025	5.00	68.0	—
Building Construction	Building Construction	6/18/2025	11/18/2025	5.00	110	—
Paving	Paving	5/18/2026	6/1/2026	5.00	11.0	—
Architectural Coating	Architectural Coating	11/18/2025	5/18/2026	5.00	130	—
Trenching	Trenching	2/12/2025	6/18/2025	5.00	91.0	—

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	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45

Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Trenching	Pumps	Diesel	Average	1.00	8.00	11.0	0.74

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Interim	1.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Building Construction	Forklifts	Diesel	Tier 4 Interim	2.00	7.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	6.00	84.0	0.37
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Interim	1.00	8.00	81.0	0.42
Paving	Rollers	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38
Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	8.00	89.0	0.36
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Trenching	Pumps	Diesel	Average	1.00	8.00	11.0	0.74

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	5.00	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	27.6	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	24.6	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	9.60	8.40	HHDT,MHDT
Building Construction	Hauling	68.2	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.92	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—

Trenching	Worker	2.50	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	5.00	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	27.6	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	24.6	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	9.60	8.40	HHDT,MHDT
Building Construction	Hauling	68.2	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.92	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	2.50	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	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	69,153	23,051	—

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	—	—	6.00	0.00	—
Grading	—	15,000	34.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Hotel	0.00	0%
Enclosed Parking with Elevator	0.00	100%
Quality Restaurant	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	39.5	0.03	< 0.005
2025	0.00	39.5	0.03	< 0.005
2026	0.00	39.5	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
Hotel	546	535	389	190,480	4,033	3,951	2,872	1,407,312
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quality Restaurant	420	451	361	151,956	1,231	3,336	2,666	633,871

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year

Hotel	546	535	389	190,480	4,033	3,951	2,872	1,407,312
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quality Restaurant	420	451	361	151,956	1,231	3,336	2,666	633,871

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

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	69,153	23,051	—

5.10.3. Landscape Equipment

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

5.10.4. Landscape Equipment - Mitigated

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)
Hotel	621,549	39.5	0.0330	0.0040	0.00
Enclosed Parking with Elevator	46,143	39.5	0.0330	0.0040	0.00
Quality Restaurant	363,868	39.5	0.0330	0.0040	0.00

5.11.2. Mitigated

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)
Hotel	621,549	39.5	0.0330	0.0040	0.00
Enclosed Parking with Elevator	46,143	39.5	0.0330	0.0040	0.00
Quality Restaurant	363,868	39.5	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)
Hotel	2,359,110	0.00
Enclosed Parking with Elevator	0.00	0.00
Quality Restaurant	1,333,727	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)

Hotel	2,359,110	0.00
Enclosed Parking with Elevator	0.00	0.00
Quality Restaurant	1,333,727	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Hotel	50.9	—
Enclosed Parking with Elevator	0.00	—
Quality Restaurant	4.01	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Hotel	50.9	—
Enclosed Parking with Elevator	0.00	—
Quality Restaurant	4.01	—

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

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

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Hotel	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Hotel	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Hotel	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Quality Restaurant	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Quality Restaurant	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Quality Restaurant	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. Mitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.21	annual days of extreme heat
Extreme Precipitation	11.8	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	13.7	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

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

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	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	N/A	N/A	N/A	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	N/A	N/A	N/A	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	N/A	N/A	N/A	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 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	10.6
AQ-PM	14.4
AQ-DPM	75.4
Drinking Water	17.9
Lead Risk Housing	59.5
Pesticides	43.0
Toxic Releases	23.4
Traffic	79.0
Effect Indicators	—
CleanUp Sites	77.3
Groundwater	93.1
Haz Waste Facilities/Generators	75.5
Impaired Water Bodies	51.2
Solid Waste	60.8

Sensitive Population	—
Asthma	49.5
Cardio-vascular	64.1
Low Birth Weights	50.7
Socioeconomic Factor Indicators	—
Education	57.5
Housing	53.1
Linguistic	20.6
Poverty	52.7
Unemployment	18.3

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	62.22250738
Employed	80.73912486
Median HI	61.27293725
Education	—
Bachelor's or higher	69.9987168
High school enrollment	9.739509817
Preschool enrollment	9.097908379
Transportation	—
Auto Access	34.87745413
Active commuting	75.43949698
Social	—
2-parent households	26.7419479

Voting	94.53355576
Neighborhood	—
Alcohol availability	11.61298601
Park access	81.35506224
Retail density	76.92801232
Supermarket access	57.39766457
Tree canopy	75.46516104
Housing	—
Homeownership	34.21018863
Housing habitability	67.15000642
Low-inc homeowner severe housing cost burden	47.9917875
Low-inc renter severe housing cost burden	83.69049147
Uncrowded housing	74.48992686
Health Outcomes	—
Insured adults	53.31707943
Arthritis	0.0
Asthma ER Admissions	45.9
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	37.7
Cognitively Disabled	46.5
Physically Disabled	68.4
Heart Attack ER Admissions	50.0

Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	92.4
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	31.8
Children	36.4
Elderly	39.0
English Speaking	87.1
Foreign-born	47.8
Outdoor Workers	49.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	30.7
Traffic Density	68.7
Traffic Access	54.6
Other Indices	—
Hardship	34.9
Other Decision Support	—
2016 Voting	98.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	60.0
Healthy Places Index Score for Project Location (b)	59.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	Petaluma clean energy provider = sonoma clean energy
Land Use	Applicant provided land uses, traffic provided restaurant land use
Construction: Construction Phases	Applicant provided construction schedule
Construction: Off-Road Equipment	Applicant provided construction equipment and hours usage
Construction: Trips and VMT	Building construction = 50,000-cy concrete (68 trips/day)
Operations: Vehicle Data	Traffic provided trip gen including reductions
Operations: Energy Use	Petaluma Reach Code - all-electric, no natural gas
Operations: Water and Waste Water	Wastewater treatment 100% aerobic. No septic tanks or lagoons.

23-111 Appellation Hotel HRA Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	23-111 Appellation Hotel HRA
Construction Start Date	11/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	3.80
Location	2 Petaluma Blvd S, Petaluma, CA 94952, USA
County	Sonoma-San Francisco
City	Petaluma
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	987
EDFZ	2
Electric Utility	Sonoma Clean Power
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.16

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
Hotel	93.0	Room	0.33	41,708	0.00	0.00	—	—

Enclosed Parking with Elevator	58.0	Space	0.00	12,500	0.00	0.00	—	—
Quality Restaurant	4.39	1000sqft	0.00	4,394	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	4.24	6.66	0.21	0.04	0.25	0.19	0.01	0.21	1,266
Mit.	3.98	7.15	0.13	0.04	0.18	0.12	0.01	0.13	1,266
% Reduced	6%	-7%	37%	—	31%	37%	—	35%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	4.55	21.2	0.87	7.65	8.52	0.80	3.49	4.29	3,898
Mit.	4.11	10.5	0.13	2.99	3.06	0.12	1.36	1.44	3,898
% Reduced	10%	50%	85%	61%	64%	85%	61%	67%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	1.05	2.94	0.10	0.69	0.75	0.09	0.35	0.40	535
Mit.	1.04	2.61	0.04	0.27	0.27	0.04	0.13	0.16	535

% Reduced	1%	11%	57%	61%	63%	57%	61%	61%	—
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.19	0.54	0.02	0.13	0.14	0.02	0.06	0.07	88.6
Mit.	0.19	0.48	0.01	0.05	0.05	0.01	0.02	0.03	88.6
% Reduced	1%	11%	57%	61%	63%	57%	61%	61%	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2025	0.80	6.66	0.21	0.04	0.25	0.19	0.01	0.21	1,266
2026	4.24	4.43	0.18	< 0.005	0.19	0.17	< 0.005	0.17	899
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2024	2.13	21.2	0.87	7.65	8.52	0.80	3.49	4.29	3,898
2025	4.55	11.1	0.46	6.59	7.05	0.43	3.37	3.80	1,821
2026	3.84	0.86	0.02	< 0.005	0.02	0.02	< 0.005	0.02	137
Average Daily	—	—	—	—	—	—	—	—	—
2024	0.14	1.36	0.06	0.69	0.75	0.05	0.35	0.40	212
2025	0.66	2.94	0.10	0.57	0.67	0.09	0.29	0.38	535
2026	1.05	0.34	0.01	< 0.005	0.01	0.01	< 0.005	0.01	59.9
Annual	—	—	—	—	—	—	—	—	—
2024	0.02	0.25	0.01	0.13	0.14	0.01	0.06	0.07	35.2
2025	0.12	0.54	0.02	0.10	0.12	0.02	0.05	0.07	88.6
2026	0.19	0.06	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.91

2.3. Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2025	0.36	7.15	0.13	0.04	0.18	0.12	0.01	0.13	1,266
2026	3.98	4.47	0.07	< 0.005	0.07	0.06	< 0.005	0.06	899
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2024	0.50	10.5	0.07	2.99	3.06	0.07	1.36	1.44	3,898
2025	4.11	7.47	0.13	2.58	2.64	0.12	1.32	1.37	1,821
2026	3.84	0.86	0.02	< 0.005	0.02	0.02	< 0.005	0.02	137
Average Daily	—	—	—	—	—	—	—	—	—
2024	0.03	0.59	< 0.005	0.27	0.27	< 0.005	0.13	0.14	212
2025	0.45	2.61	0.04	0.23	0.27	0.04	0.11	0.16	535
2026	1.04	0.34	0.01	< 0.005	0.01	0.01	< 0.005	0.01	59.9
Annual	—	—	—	—	—	—	—	—	—
2024	0.01	0.11	< 0.005	0.05	0.05	< 0.005	0.02	0.03	35.2
2025	0.08	0.48	0.01	0.04	0.05	0.01	0.02	0.03	88.6
2026	0.19	0.06	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.91

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	9.26	0.36	—	0.36	0.33	—	0.33	2,156
Dust From Material Movement	—	—	—	1.06	1.06	—	0.11	0.11	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.15	0.01	—	0.01	0.01	—	0.01	35.4
Dust From Material Movement	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.87
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	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

3.2. Site Preparation (2024) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	5.65	0.04	—	0.04	0.04	—	0.04	2,156
Dust From Material Movement	—	—	—	0.41	0.41	—	0.04	0.04	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.09	< 0.005	—	< 0.005	< 0.005	—	< 0.005	35.4
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	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.87
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	—

Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

3.3. Grading (2024) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.16	11.4	0.51	—	0.51	0.47	—	0.47	1,638
Dust From Material Movement	—	—	—	6.57	6.57	—	3.37	3.37	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.12	1.16	0.05	—	0.05	0.05	—	0.05	167
Dust From Material Movement	—	—	—	0.67	0.67	—	0.34	0.34	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.01	—	0.01	0.01	—	0.01	27.6
Dust From Material Movement	—	—	—	0.12	0.12	—	0.06	0.06	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.01	0.47	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—

3.4. Grading (2024) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	4.37	0.03	—	0.03	0.03	—	0.03	1,638
Dust From Material Movement	—	—	—	2.56	2.56	—	1.31	1.31	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.44	< 0.005	—	< 0.005	< 0.005	—	< 0.005	167
Dust From Material Movement	—	—	—	0.26	0.26	—	0.13	0.13	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	27.6
Dust From Material Movement	—	—	—	0.05	0.05	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.01	0.47	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—
Average Daily	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—

3.5. Grading (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	10.0	0.44	—	0.44	0.40	—	0.40	1,638
Dust From Material Movement	—	—	—	6.57	6.57	—	3.37	3.37	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.85	0.04	—	0.04	0.03	—	0.03	138
Dust From Material Movement	—	—	—	0.55	0.55	—	0.28	0.28	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.15	0.01	—	0.01	0.01	—	0.01	22.8

Dust From Material Movement	—	—	—	0.10	0.10	—	0.05	0.05	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.01	0.46	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—

3.6. Grading (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	4.37	0.03	—	0.03	0.03	—	0.03	1,638

Dust From Material Movement	—	—	—	2.56	2.56	—	1.31	1.31	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.37	< 0.005	—	< 0.005	< 0.005	—	< 0.005	138
Dust From Material Movement	—	—	—	0.22	0.22	—	0.11	0.11	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.8
Dust From Material Movement	—	—	—	0.04	0.04	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.01	0.46	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—

3.7. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	4.80	0.18	—	0.18	0.17	—	0.17	903
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	4.80	0.18	—	0.18	0.17	—	0.17	903
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	1.45	0.05	—	0.05	0.05	—	0.05	272
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.26	0.01	—	0.01	0.01	—	0.01	45.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.09	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—
Vendor	< 0.005	0.11	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Hauling	0.04	1.11	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.08	0.03	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—

Vendor	< 0.005	0.11	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Hauling	0.03	1.15	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Hauling	0.01	0.34	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Hauling	< 0.005	0.06	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—

3.8. Building Construction (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	5.29	0.10	—	0.10	0.10	—	0.10	903
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	5.29	0.10	—	0.10	0.10	—	0.10	903
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	1.60	0.03	—	0.03	0.03	—	0.03	272
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.29	0.01	—	0.01	0.01	—	0.01	45.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.09	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—
Vendor	< 0.005	0.11	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Hauling	0.04	1.11	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.08	0.03	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—
Vendor	< 0.005	0.11	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Hauling	0.03	1.15	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Hauling	0.01	0.34	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—
Hauling	< 0.005	0.06	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—

3.9. Paving (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.38	3.56	0.16	—	0.16	0.15	—	0.15	758
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.11	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.8
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.78
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

3.10. Paving (2026) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	3.60	0.04	—	0.04	0.04	—	0.04	758
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.11	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.8
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.78
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

3.11. Architectural Coating (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.5
Architectural Coatings	0.32	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.91
Architectural Coatings	0.06	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

3.12. Architectural Coating (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	0.88	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.5
Architectural Coatings	0.32	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.91
Architectural Coatings	0.06	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—

Vendor	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	—

3.13. Architectural Coating (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	0.02	—	0.02	0.02	—	0.02	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	0.02	—	0.02	0.02	—	0.02	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.23	0.01	—	0.01	0.01	—	0.01	36.2
Architectural Coatings	1.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.99

Architectural Coatings	0.18	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

3.14. Architectural Coating (2026) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.12	0.86	0.02	—	0.02	0.02	—	0.02	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	0.02	—	0.02	0.02	—	0.02	134
Architectural Coatings	3.70	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.23	0.01	—	0.01	0.01	—	0.01	36.2
Architectural Coatings	1.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.99
Architectural Coatings	0.18	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—

Vendor	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	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

3.15. Trenching (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.62	0.03	—	0.03	0.02	—	0.02	81.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.62	0.03	—	0.03	0.02	—	0.02	81.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.16	0.01	—	0.01	0.01	—	0.01	20.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.38
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

3.16. Trenching (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.08	0.62	0.03	—	0.03	0.02	—	0.02	81.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.62	0.03	—	0.03	0.02	—	0.02	81.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.16	0.01	—	0.01	0.01	—	0.01	20.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.38
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—
Vendor	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	—

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	11/1/2024	11/10/2024	5.00	6.00	—
Grading	Grading	11/10/2024	2/12/2025	5.00	68.0	—
Building Construction	Building Construction	6/18/2025	11/18/2025	5.00	110	—
Paving	Paving	5/18/2026	6/1/2026	5.00	11.0	—
Architectural Coating	Architectural Coating	11/18/2025	5/18/2026	5.00	130	—
Trenching	Trenching	2/12/2025	6/18/2025	5.00	91.0	—

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	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38

Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Trenching	Pumps	Diesel	Average	1.00	8.00	11.0	0.74

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Interim	1.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Building Construction	Forklifts	Diesel	Tier 4 Interim	2.00	7.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Interim	1.00	8.00	81.0	0.42
Paving	Rollers	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38
Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	8.00	89.0	0.36
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Trenching	Pumps	Diesel	Average	1.00	8.00	11.0	0.74

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—

Site Preparation	Worker	5.00	0.50	LDA,LDT1,LDT2
Site Preparation	Vendor	—	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	5.00	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	27.6	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	24.6	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	9.60	0.50	HHDT,MHDT
Building Construction	Hauling	68.2	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT
Paving	Hauling	0.00	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.92	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	2.50	0.50	LDA,LDT1,LDT2
Trenching	Vendor	—	0.50	HHDT,MHDT

Trenching	Hauling	0.00	0.50	HHDT
Trenching	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	0.50	LDA,LDT1,LDT2
Site Preparation	Vendor	—	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	5.00	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	27.6	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	24.6	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	9.60	0.50	HHDT,MHDT
Building Construction	Hauling	68.2	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT
Paving	Hauling	0.00	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.92	0.50	LDA,LDT1,LDT2

Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	2.50	0.50	LDA,LDT1,LDT2
Trenching	Vendor	—	0.50	HHDT,MHDT
Trenching	Hauling	0.00	0.50	HHDT
Trenching	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	69,153	23,051	—

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	—	—	6.00	0.00	—
Grading	—	15,000	34.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Hotel	0.00	0%
Enclosed Parking with Elevator	0.00	100%
Quality Restaurant	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	39.5	0.03	< 0.005
2025	0.00	39.5	0.03	< 0.005
2026	0.00	39.5	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.21	annual days of extreme heat
Extreme Precipitation	11.8	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	13.7	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	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	N/A	N/A	N/A	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	N/A	N/A	N/A	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	N/A	N/A	N/A	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 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	10.6
AQ-PM	14.4
AQ-DPM	75.4
Drinking Water	17.9
Lead Risk Housing	59.5
Pesticides	43.0
Toxic Releases	23.4
Traffic	79.0
Effect Indicators	—
CleanUp Sites	77.3
Groundwater	93.1
Haz Waste Facilities/Generators	75.5

Impaired Water Bodies	51.2
Solid Waste	60.8
Sensitive Population	—
Asthma	49.5
Cardio-vascular	64.1
Low Birth Weights	50.7
Socioeconomic Factor Indicators	—
Education	57.5
Housing	53.1
Linguistic	20.6
Poverty	52.7
Unemployment	18.3

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	62.22250738
Employed	80.73912486
Median HI	61.27293725
Education	—
Bachelor's or higher	69.9987168
High school enrollment	9.739509817
Preschool enrollment	9.097908379
Transportation	—
Auto Access	34.87745413
Active commuting	75.43949698

Social	—
2-parent households	26.7419479
Voting	94.53355576
Neighborhood	—
Alcohol availability	11.61298601
Park access	81.35506224
Retail density	76.92801232
Supermarket access	57.39766457
Tree canopy	75.46516104
Housing	—
Homeownership	34.21018863
Housing habitability	67.15000642
Low-inc homeowner severe housing cost burden	47.9917875
Low-inc renter severe housing cost burden	83.69049147
Uncrowded housing	74.48992686
Health Outcomes	—
Insured adults	53.31707943
Arthritis	0.0
Asthma ER Admissions	45.9
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	37.7
Cognitively Disabled	46.5

Physically Disabled	68.4
Heart Attack ER Admissions	50.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	92.4
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	31.8
Children	36.4
Elderly	39.0
English Speaking	87.1
Foreign-born	47.8
Outdoor Workers	49.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	30.7
Traffic Density	68.7
Traffic Access	54.6
Other Indices	—
Hardship	34.9
Other Decision Support	—

2016 Voting	98.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	60.0
Healthy Places Index Score for Project Location (b)	59.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	Petaluma clean energy provider = sonoma clean energy
Land Use	Applicant provided land uses, traffic provided restaurant land use
Construction: Construction Phases	Applicant provided construction schedule
Construction: Off-Road Equipment	Applicant provided construction equipment and hours usage
Construction: Trips and VMT	Building construction = 50,000-cy concrete (68 trips/day). HRA 0.5 miles for localized emissions.
Operations: Vehicle Data	Traffic provided trip gen including reductions

Operations: Energy Use	Petaluma Reach Code - all-electric, no natural gas
Operations: Water and Waste Water	Wastewater treatment 100% aerobic. No septic tanks or lagoons.

Attachment 2: Project Construction Emissions and Health Risk Calculations

Petaluma Appelltion Hotel - Petaluma, CA
DPM and PM2.5 Emissions for HRA Modeling

Unmitigated Construction Criteria Air Pollutants		
Unmitigated	PM10 Exhaust	PM2.5 Fugitive
Year		
Construction Equipment		
2024-2025	0.0290	0.1155
2026	0.0020	0.00002
Tons	0.03	0.12

Petaluma Appelltion Hotel - Petaluma, CA

DPM Emissions and Modeling Emission Rates - Uncontrolled

Emissions Model Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2025*	Construction	0.0290	23_DPM	58.0	0.01765	2.22E-03	1,278	**1.74E-06**
2026	Construction	0.0020	24_DPM	4.0	0.00123	1.55E-04	1,278	**1.21E-07**
Total		***0.0310***		***62.0***	***0.0189***	***0.0024***		

* Includes 2 months of emissions from 2024

Modeled Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

PM2.5 Fugitive Dust Emissions for Modeling - Uncontrolled

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2025*	Construction	23_FUG	0.11549	231.0	0.07031	8.86E-03	1,278	**6.94E-06**
2026	Construction	24_FUG	0.00002	0.0	0.00001	1.80E-06	1,278	**1.41E-09**
Total			***0.1155***	***231.0***	***0.0703***	***0.0089***		

* Includes 2 months of emissions from 2024

Modeled Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

Petaluma Appelltion Hotel - Petaluma, CA
Construction Health Impacts Summary

Maximum Impacts at Construction MEI Location - Uncontrolled

Emissions Year	Maximum Concentrations Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million) Child	Cancer Risk (per million) Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2025	0.0374	0.1613	6.64	0.11	0.007	0.199
2026	0.0026	0.0000	0.43	0.01	0.001	0.003
Total	-	-	**7.1**	**0.1**	-	-
Maximum	0.0374	0.1613	**-**	**-**	**0.007**	**0.20**

* Includes 2 months of emissions from 2024

Petaluma Appelltion Hotel - Petaluma, CA - Uncontrolled Emissions
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors-1st Floor (1.5 meter receptor heights)

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	Adult - Exposure Information Modeled DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	at MEI Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2025	0.0050	10	0.07	-	-	-	-		
1	1	0 - 1	2025	0.0050	10	0.82	2025	0.0050	1	0.01	0.0213	0.0263
2	1	1 - 2	2026	0.0004	10	0.06	2026	0.0004	1	0.00	0.00000	0.0004
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**0.95**				**0.02**		

* Third trimester of pregnancy

Petaluma Appelltion Hotel - Petaluma, CA - Uncontrolled Emissions
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors-2nd Floor (1.5 & 6.1 meter receptor heights)

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	at MEI	
	Exposure				Age	Cancer	Modeled		Age	Cancer		
Exposure	Duration		DPM Conc (ug/m3)		Sensitivity	Risk	DPM Conc (ug/m3)		Sensitivity	Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2025	0.0374	10	0.51	-	-	-	-		
1	1	0 - 1	2025	0.0374	10	6.14	2025	0.0374	1	0.11	0.1613	0.1987
2	1	1 - 2	2026	0.0026	10	0.43	2026	0.0026	1	0.01	0.00003	0.0026
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**7.07**				**0.11**		

* Third trimester of pregnancy

Petaluma Appelltion Hotel - Petaluma, CA - Uncontrolled Emissions
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 3rd Floor (8.7 meter receptor heights)

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	at MEI	
	Exposure				Age	Cancer	Modeled		Age	Cancer		
Exposure	Duration		DPM Conc (ug/m3)		Sensitivity	Risk	DPM Conc (ug/m3)		Sensitivity	Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2025	0.0355	10	0.48	-	-	-	-		
1	1	0 - 1	2025	0.0355	10	5.82	2025	0.0355	1	0.10	0.1552	0.1906
2	1	1 - 2	2026	0.0025	10	0.41	2026	0.0025	1	0.01	0.00003	0.0025
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**6.71**				**0.11**		

* Third trimester of pregnancy

Attachment 3: Health Risk Screening Information and Calculations

BAAQMD RASTER Screening Data – Roadway Cancer Risk Impacts at the MEI

BAAQMD RASTER Screening Data – Roadway $PM_{2.5}$ Concentration Impacts at the MEI

BAAQMD RASTER Screening Data – Roadway Hazard Index Impacts at the MEI

Bay Area Air Quality Management District

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

Click here for guidance on coducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requester Contact Information

Date of Request	**7/12/2023**
Contact Name	Jordyn Bauer
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x103
Email	jbauer@illingworthrodkin.com
Project Name	Appellation Hotel
Address	2 Petaluma Blvd S
City	Petaluma
County	Sonoma
Type (residential, commercial, mixed use, industrial, etc.)	Hotel
Project Size (# of units or building square feet)	93 rooms
Comments:	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.

2. Download and install the free program Google Earth, **http://www.google.com/earth/download/ge/,** and then download the county specific Google Earth stationary source application files from the District's website, **http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.** The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.

3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in Table B blue section only.

6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Matthew Hanson at 415-749-8733, or mhanson@baaqmd.gov

Table B: Google Earth data

Project Site

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
600	20509	City of Petaluma	6 C Street	2.774	0.001	0.004		Generator		2021 Dataset	0.09	0.25	0.0001	0.0004

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.

8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010.
    Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

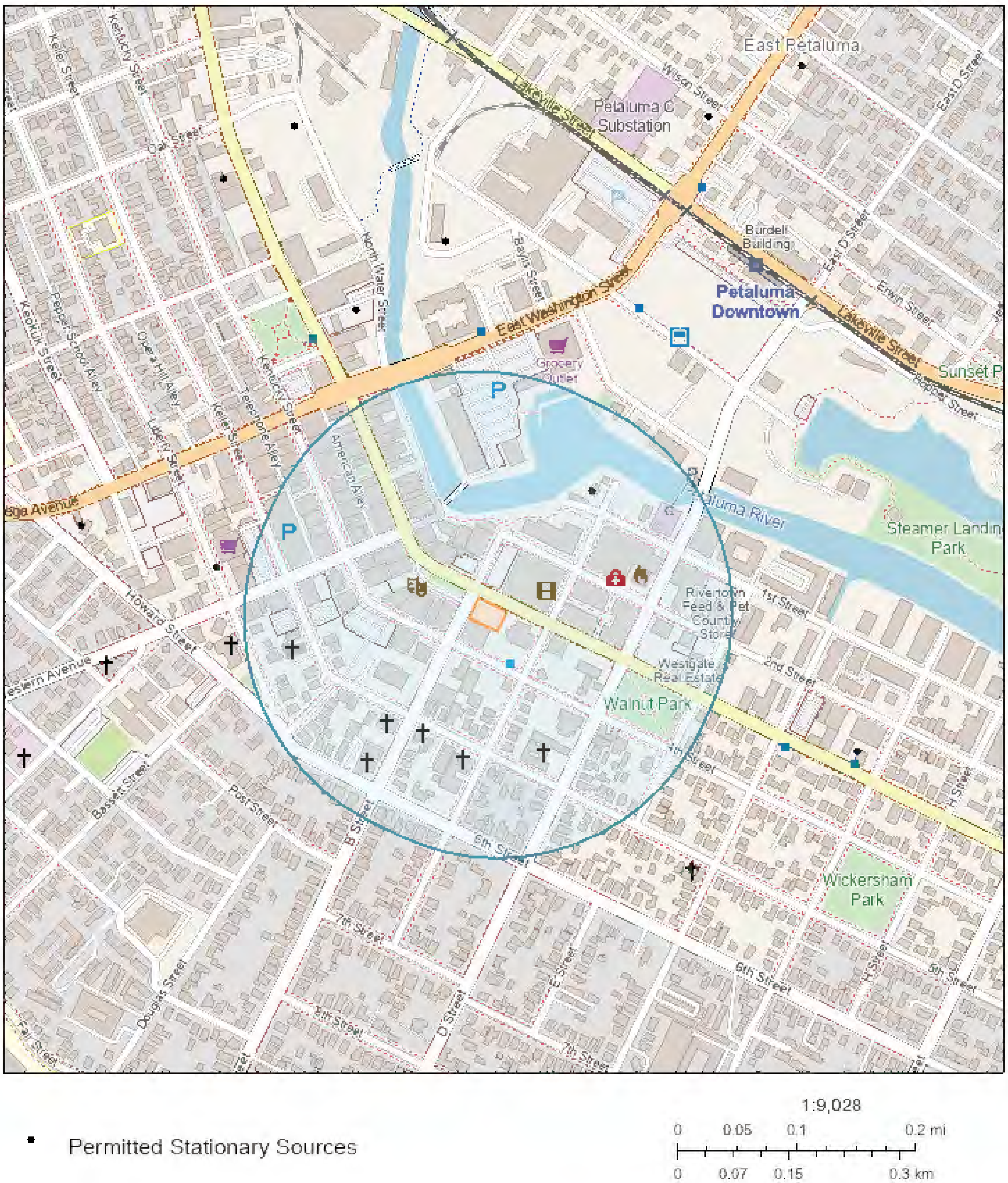
Date last updated:
03/13/2018

Screening Report

Area of Interest (AOI) Information

Area : 3,624,202.92 ft²

Jul 12 2023 11:23:20 Pacific Daylight Time



Summary

Name	Count	Area(ft^2)	Length(ft)
Permitted Stationary Sources	1	N/A	N/A

Permitted Stationary Sources

#	Facility_I	Facility_N	Address	City	State
1	20509	City of Petaluma	6 C Street	Petaluma	CA

#	Zip	County	Latitude	Longitude	Details
1	94952	Sonoma	38.234543	-122.637393	Generator

#	NAICS	NAICS_Sect	NAICS_Subs	NAICS_Indu	Cancer_Ris
1	237110	Construction	Heavy and Civil Engineering Construction	Water and Sewer Line and Related Structures Construction	2.774000

#	Chronic_Ha	PM25	Count
1	0.001000	0.004000	1

NOTE: A larger buffer than 1000 feet may be warranted depending on proximity to significant sources.