Air Quality and Greenhouse Gas Assessment
2008 Grant Street Project
City of Calistoga, California

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LIST OF ABBREVIATED TERMS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
AADT	Annual Average Daily Traffic
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AT	averaging time
ATCM	Air Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
BCDC	Bay Conservation and Development Commission
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	methane
CMP	congestion management plan
CO_2e	Carbon dioxide equivalent
DPM	Diesel Particulate Matter
EPA	U.S. Environmental Protection Agency
ºF	Fahrenheit
FCAA	Federal Clean Air Act
GHG	Greenhouse gas
HFCs	hydrofluorocarbons
mg	milligrams
MT	metric tons
MTC	Metropolitan Transportation Commission
N/A	Not Applicable
NAAQS	National Ambient Air Quality Standards
N_2O	nitrous oxide
NOA	naturally occurring asbestos
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
O_3	ozone
OEHHA	Office Environmental Health Hazard Assessment
PDA	Priority Development Area
PFCs	perfluorocarbons
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
ppm	parts per million
RCPA	Regional Climate Protection Authority
RTP	Regional Transportation Plan
SB	Senate Bill
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride

1 INTRODUCTION

This report documents the results of an Air Quality and Greenhous Gas (GHG) Assessment completed for the 2008 Grant Street Project (project). The purpose of this Air Quality and GHG Assessment is to evaluate the potential construction and operational emissions associated with the proposed project and to determine the level of impact the project would have on the environment.

1.1 PROJECT LOCATION

The project site is generally located approximately 0.3 miles west of Lake County Highway (State Route 29) and about one mile east of Foothill Boulevard (State Route 128) in the City of Calistoga, California.

The project site is specifically located on the north side of Grant Street at the terminus of Redwood Avenue. The property actually has no frontage on Grant Street. Redwood Avenue leads to the "land-locked" property. Three homes face Grant Street to the east of Redwood Avenue, while a church occupies the property on the west side of Redwood Avenue, and one home faces Redwood Avenue. The 5.8-acre property is bordered to the south by single-family detached homes (the ones facing Grant Street and Redwood Avenue) and the parking lot of the church on Grant Street; to the east by single-family detached homes along Michael Way; to the north by a single-family home and its associated retention basin and other open space; and to the west by single-family homes on Maggie Avenue.

1.2 PROJECT DESCRIPTION

The project proposing to create a 15-lot single-family detached residential community consistent with the City's R-1 (One Family Residential) zoning. The proposed homes range in size from 2,320 to 3,518 square feet (sq. ft.) with three different plans. Although the entire property area is 5.84 acres, the actual proposed developable area of the site (the area that would be graded and improved with the street, homes and bio-retention basin) is less than five acres; refer to **Exhibit 1: Site Plan.**

The developer has attempted to leave as much of the existing drainage channel and surrounding vegetation intact and in a natural state, located in parcels that would remain undeveloped in perpetuity. These undeveloped parcels account for 1.12 acres of the property, yielding a developed area of just 4.72 acres.

The single point of access from Redwood Avenue requires a cul-de-sac large enough for fire vehicles to turn around. The private street is nearly an acre in area, which, subtracted from the project area of 4.72 acres, yields a net developable area of 3.74 acres. Therefore, the resulting density is 4 units per acre, consistent with the General Plan, and 15 residential lots conforming to the R-1 development standards.

The property has a General Plan designation of Medium Density Residential (4-10 dwelling units (du) per acre) and a zoning designation of R-1 (6000 sq. ft. minimum lot size), the combination of which could allow a maximum of 42 units on this 5.84 gross-acre site.

Exhibit 1: Site Plan

TREE LEGEND

BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS
STREET TREES			
PISTACIA CHINENSIS 'KEITH DAVEY'	CHINESE PISTACHE	15 GAL.	LOW
OPEN SPACE TREES			
LARGE SPECIMEN TREE			
QUERCUS AGRIFOLIA	COAST LIVE OAK	24" BOX	V. LOW
QUERCUS LOBATA	VALLEY OAK	24" BOX	LOW
SMALL SPECIMEN TREE			
CERCIS OCCIDENTALIS	WESTERN REDBUD	24" BOX	V. LOW
ACCENT TREES			
LAGERSTROEMIA SPP.	CRAPE MYRTLE	24" BOX	LOW
PRUNUS CERASIFERA 'KRAUTER VESUVIUS'	PURPLE LEAF PLUM	24" BOX	MOD
EXISTING TREES			
EXISTING TREES TO REMAIN			

* WATER NEEDS BASED ON THE WATER USE CLASSIFICATION OF LANDSCAPE SPECIES (WUCOLS) BY THE UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION.

IRRIGATION CONCEPT STATEMENT

THE IRRIGATION DESIGN FOR THE SITE SHALL COMPLY WITH THE STATE OF CALIFORNIA MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (TITLE 23 - DIVISION 2-CHAPTER 2.7) AND THE CITY OF CALISTOGA.

THE IRRIGATION SYSTEMS WILL BE AUTOMATICALLY CONTROLLED BY AN ET IRRIGATION CONTROLLER CAPABLE OF MULTIPLE PROGRAMMING AND INDEPENDENT TIMING OF INDIVIDUAL IRRIGATION SYSTEMS. THE CONTROLLER WILL HAVE A 24-HOUR CLOCK TO ALLOW MULTIPLE START TIMES AND REPEAT CYCLES TO ADJUST FOR SOIL PERCOLATION RATES.

THE IRRIGATION SYSTEMS WILL CONSIST PRIMARILY OF LOW VOLUME, LOW FLOW BUBBLERS FOR TREES, POINT SOURCE DRIP IRRIGATION FOR SHRUBS AND GROUNDCOVERS, AND LOW-VOLUME SPRAY IRRIGATION FOR TURF PLANTINGS.

PLANTS WILL BE GROUPED ONTO SEPARATE VALVES ACCORDING TO SUN EXPOSURE AND WATER USE TO ALLOW FOR IRRIGATION APPLICATION BY HYDROZONE. THE IRRIGATION SCHEDULING WILL REFLECT THE REGIONAL EVAPO-TRANSPIRATION RATES. THE ENTIRE SITE WILL BE DESIGNED TO RUN DURING NIGHTTIME HOURS WHEN IRRIGATION IS MOST EFFICIENT.

CALLOUT LEGEND

1. CONCRETE ENTRY WALK, TYP.
2. DRIVEWAY PER CIVIL ENGINEER
3. CONCRETE SIDEWALK PER CIVIL ENGINEER
4. PLANTING AREA, TYP. REFER TO PROPOSED PLANT PALETTE, SHEET L-2.
5. EXISTING NATURAL VEGETATION TO REMAIN, TYP.
6. BIO-RETENTION AREA PER CIVIL ENGINEER
7. EXISTING DRAINAGE, TYP.
8. WOOD GOOD NEIGHBOR FENCE, TYP. REFER TO DETAIL A, SHEET L-3.
9. WOOD & WIRE VIEW FENCE, TYP. REFER TO DETAIL D, SHEET L-3.
10. GOOD NEIGHBOR FENCE ON RETAINING WALL, TYP. REFER TO DETAIL C, SHEET L-3.
11. WOOD & WIRE FENCE ON RETAINING WALL, TYP. REFER TO DETAIL C, SHEET L-3.
12. WOOD GATE, TYP. REFER TO DETAIL B, SHEET L-3.
13. REAR YARD, PER HOMEOWNER, TYP.
14. LOT PROPERTY LINE, TYP.
15. RETAINING WALL PER CIVIL ENGINEER.

DeNova Homes
1500 WILLOW PASS COURT
CONCORD, CALIFORNIA 94520
(925)686-0110

GRANT STREET
Calistoga, California

OVERALL LANDSCAPE PLAN
CONCEPTUAL LANDSCAPE PLAN
JANUARY 20, 2021

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Suite 240
Napa, CA 94558
tel: 707.224.2299
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VTA

SCALE: 1" = 30'-0" NORTH

L-1
Project No. 05620

2 ENVIRONMENTAL SETTING

2.1 CLIMATE AND METEOROLOGY

The California Air Resources Board (CARB) divides the State into 15 air basins that share similar meteorological and topographical features. The proposed project is located within the San Francisco Bay Area Air Basin (SFBAAB/Basin). This Basin comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern portion of Sonoma County, and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.

The Basin is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold-water band resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

2.2 AIR POLLUTANTS OF CONCERN

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as “criteria air pollutants” and are categorized into primary and secondary pollutants.

Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_X), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead are primary air pollutants. Of these, CO, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. For example, the criteria pollutant ozone (O_3) is formed by a chemical reaction between ROG and NOx in the presence of sunlight. O_3 and nitrogen dioxide (NO_2) are the principal secondary pollutants. Sources and health effects commonly associated with criteria pollutants are summarized in Table 1: Air Contaminants and Associated Public Health Concerns.

Table 1: Air Contaminants and Associated Public Health Concerns		
Pollutant	**Major Man-Made Sources**	**Human Health Effects**
Particulate Matter (PM_{10} and $PM_{2.5}$)	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; asthma; chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases/volatile organic compounds (ROG or VOC)[1] and nitrous oxides (NO_X) in the presence of sunlight. Motor vehicle exhaust industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
Sulfur Dioxide (SO_2)	A colorless gas formed when fuel containing sulfur is burned and when gasoline is extracted from oil. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Notes: 1. Volatile Organic Compounds (VOCs or Reactive Organic Gases [ROG]) are hydrocarbons/organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including ROGs and VOCs. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation).		
Source: California Air Pollution Control Officers Association, *Health Effects*, http://www.capcoa.org/health-effects/, Accessed April 27, 2021.		

Ambient Air Quality

CARB monitors ambient air quality at approximately 250 air monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The closest air monitoring station to the proposed project in Napa County is the Napa-Jefferson Avenue Monitoring Station (located approximately 19 miles to the southeast of the project site). Local air quality data from 2017 to 2019 are provided in Table 2: Ambient Air Quality Data. As the Napa-Jefferson Avenue Monitoring Station does not collects data for PM_{10}, Table 2 also includes data from the Napa-Valley College Monitoring Station, which is located in Napa County (located approximately 23 miles to the southeast of the project site). Table 2 lists the monitored maximum concentrations and number of exceedances of federal/state air quality standards for each year.

Table 2: Ambient Air Quality Data

Pollutant	Napa-Valley College [1]			Napa-Jefferson Avenue [2]		
	2017	2018	2019	2017	2018	2019
Ozone (O_3)						
1-hour Maximum Concentration (ppm)	*	0.083	0.095	0.098	0.047	*
8-hour Maximum Concentration (ppm)	*	0.068	0.076	0.084	0.042	*
Number of Days Standard Exceeded						
CAAQS 1-hour (>0.09 ppm)	*	0	1	1	0	*
NAAQS 8-hour (>0.070 ppm)	*	0	2	2	0	*
Nitrogen Dioxide (NO_2)						
1-hour Maximum Concentration (ppm)	*	0.0432	0.0366	0.0526	0.039	*
Number of Days Standard Exceeded						
NAAQS 1-hour (>100 ppm)	0	0	0	0	0	0
CAAQS 1-hour (>0.18 ppm)	0	0	0	0	0	0
Particulate Matter Less Than 10 Microns (PM_{10})						
National 24-hour Maximum Concentration	*	25.5	37.5	--	--	--
State 24-hour Maximum Concentration	*	26.0	39.0	--	--	--
State Annual Average Concentration (CAAQS=20 µg/m³)	--	--	--	--	--	--
Number of Days Standard Exceeded						
NAAQS 24-hour (>150 µg/m³)	0	0	0	--	--	--
CAAQS 24-hour (>50 µg/m³)	0	0	0	--	--	--
Particulate Matter Less Than 2.5 Microns ($PM_{2.5}$)						
National 24-hour Maximum Concentration	*	117.9	21.5	199.1	30.2	*
State 24-hour Maximum Concentration	*	117.9	21.5	199.1	30.2	*
Number of Days Standard Exceeded						
NAAQS 24-hour (>35 µg/m³)	0	12	0	13	0	0

NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; µg/m³ = micrograms per cubic meter; NM = not measured

Notes:
1. Measurements taken at the Napa-Valley College Monitoring Station located at Magnolia Drive and Highway 221, Napa, California 94558 (CARB# 28785).
2. Measurements taken at the Napa-Jefferson Avenue Monitoring Station located at 2552 Jefferson Ave., Napa, California 94558 (CARB #28783).

Source: All pollutant measurements are from the California Air Resources Board Aerometric Data Analysis and Management system database (https://www.arb.ca.gov/adam).

2.3 SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of air pollution than is the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Sensitive receptors in the vicinity of the project site primarily consist of residences and a church adjacent to the project site. Table 3: Sensitive Receptors, lists the distances and locations of sensitive receptors within the Project vicinity.

Table 3: Sensitive Receptors	
Receptor Type/Description	**Distance and Direction from the Project Site[1]**
Single Family Residences	30 feet west and northwest
Single Family Residences	40 feet east and southeast
Single Family Residences	40 feet north
Seventh-day Adventist Church	60 feet southwest
Single Family Residences	90 feet south
[1] Distance calculated from property line of proposed project site and property line of the sensitive receptors Source: Google Earth	

3 REGULATORY SETTING

3.1 FEDERAL

Federal Clean Air Act

Air quality is federally protected by the Clean Air Act and its amendments. Under the Federal Clean Air Act (FCAA), the U.S. Environmental Protection Agency (EPA) developed the primary and secondary National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants including ozone, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead. Proposed projects in or near nonattainment areas could be subject to more stringent air-permitting requirements. The Clean Air Act requires each state to prepare a State Implementation Plan (SIP) to demonstrate how it will attain the NAAQS within the federally imposed deadlines.

The EPA can withhold certain transportation funds from states that fail to comply with the planning requirements of the Clean Air Act. If a state fails to correct these planning deficiencies within two years of Federal notification, the EPA is required to develop a Federal implementation plan for the identified nonattainment area or areas. The provisions of 40 CFR Parts 51 and 93 apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan. The EPA has designated enforcement of air pollution control regulations to the individual states. The SFBAAB attainment status with respect to federal standards is summarized in Table 4: State and Federal Ambient Air Quality Standards.

3.2 STATE OF CALIFORNIA

California Air Resources Board

CARB administers the air quality policy in California. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the National Ambient Air Quality Standards (NAAQS) in Table 4, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates.

The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMPs also serve as the basis for the preparation of the SIP for meeting federal clean air standards for the State of California. Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events such as wildfires, volcanoes, etc. are not considered violations of a State standard, and are not used as a basis for designating areas as nonattainment. The Basin attainment status with respect to state standards is summarized in Table 4.

Table 4: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	State Standards[1]		Federal Standards[2]	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone (O_3) [2, 5, 7]	8 Hour	0.070 ppm (137 µg/m³)	N[9]	0.070 ppm	N[4]
	1 Hour	0.09 ppm (180 µg/m³)	N	NA	N/A[5]
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	A	9 ppm (10 mg/m³)	A
	1 Hour	20 ppm (23 mg/m³)	A	35 ppm (40 mg/m³)	A[6]
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m³)	A	0.10 ppm[11]	U
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	-	0.053 ppm (100 µg/m³)	A
Sulfur Dioxide (SO_2) [8]	24 Hour	0.04 ppm (105 µg/m³)	A	0.14 ppm (365 µg/m³)	A
	1 Hour	0.25 ppm (655 µg/m³)	A	0.075 ppm (196 µg/m³)	A
	Annual Arithmetic Mean	NA	-	0.03 ppm (80 µg/m³)	A
Particulate Matter (PM_{10}) [1, 3, 6]	24-Hour	50 µg/m³	N	150 µg/m³	-
	Annual Arithmetic Mean	20 µg/m³	N[7]	NA	U
Fine Particulate Matter ($PM_{2.5}$) [3, 4, 6, 9]	24-Hour	NA	-	35 µg/m³	U/A
	Annual Arithmetic Mean	12 µg/m³	N[7]	12 µg/m³	N
Sulfates (SO_{4-2})	24 Hour	25 µg/m³	A	NA	-
Lead (Pb) [10, 11]	30-Day Average	1.5 µg/m³	-	NA	A
	Calendar Quarter	NA	-	1.5 µg/m³	A
	Rolling 3-Month Average	NA	-	0.15 µg/m³	-
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (42 µg/m³)	U	NA	-
Vinyl Chloride (C_2H_3Cl) [10]	24 Hour	0.01 ppm (26 µg/m³)	-	NA	-
Visibility Reducing Particles[8]	8 Hour (10:00 to 18:00 PST)	-	U	-	-

A = attainment; N = nonattainment; U = unclassified; N/A = not applicable or no applicable standard; ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; – = not indicated or no information available.

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.
2. National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m_3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m³.

Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

3. National air quality standards are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.
4. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.
5. The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.
6. In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
7 In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.
8 Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.
9. The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.
10. On January 9, 2013, EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a "redesignation request" and a "maintenance plan" to EPA, and EPA approves the proposed redesignation.
11. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010). The US Environmental Protection Agency (EPA) expects to make a designation for the Bay Area by the end of 2017.
12. On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following U.S. EPA initial designations of the new 1-hour SO_2 NAAQS.
13. CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined.
14. National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.
15. In December 2012, EPA strengthened the annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter ($\mu g/m^3$). In December 2014, EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

Source: Bay Area Air Quality Management District, *Air Quality Standards and Attainment Status*, http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status, Accessed April 28, 2021.

3.3 REGIONAL

Bay Area Air Quality Management District

The BAAQMD is the regional agency with jurisdiction over the nine-county region located in the Basin. The Association of Bay Area Governments (ABAG), Metropolitan Transportation Commission (MTC), county transportation agencies, cities and counties, and various nongovernmental organizations also join in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs.

As seen in Table 4, in general, the Bay Area experiences low concentrations of most pollutants when compared to federal standards, except for O_3 and particulate matter (PM), for which standards are exceeded periodically. With respect to federal standards, the Bay Area's attainment status for 8-hour ozone is classified as "marginal nonattainment" and "nonattainment" for $PM_{2.5}$. As a designated "marginal" nonattainment area for the federal 8-hour ozone standard, preparation of a SIP is currently not required. However, in response to the EPA's designation of the Basin for the previous nonattainment 8-hour federal ozone standard, the BAAQMD, ABAG, and MTC were required to develop an ozone attainment plan to meet this standard. The *1999 Ozone Attainment Plan* was prepared and adopted by

these agencies in June 1999 and this federal plan was updated in 2001. The most recent state ozone plan is the Bay Area *2017 Clean Air Plan.* The *2017 Clean Air Plan* was developed as a multi-pollutant plan that provides an integrated control strategy to reduce ozone, PM, toxic air contaminants, and greenhouse gases. In 1998, after many years without violations of any CO standards, the attainment status for CO was upgraded to "attainment."

Under CEQA, the BAAQMD is a commenting responsible agency on air quality within its jurisdiction or impacting its jurisdiction. The BAAQMD reviews projects to ensure that they would: (1) support the primary goals of the latest Air Quality Plan; (2) include applicable control measures from the Air Quality Plan; and (3) not disrupt or hinder implementation of any Air Quality Plan control measures.

Bay Area Air Quality Planning Relative to State and Federal Standards

Air quality plans developed to meet federal requirements are referred to as State Implementation Plans. The federal and state Clean Air Acts require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM10 standard). The *2017 Clean Air Plan: Spare the Air, Cool the Climate* was adopted on April 19, 2019, by the BAAQMD.

The 2017 Clean Air Plan provides a regional strategy to protect public health and protect the climate. To protect public health, the plan describes how the BAAQMD will continue progress toward attaining all state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the 2017 Clean Air Plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas (GHG) reduction targets for 2030 and 2050 and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG reduction targets.

The 2017 Clean Air Plan includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other “super-GHGs” that are potent climate pollutants in the near-term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

3.4 GREENHOUSE GAS EMISSIONS SETTING AND REGULATIONS

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of Greenhouse Gases (GHGs) have a broader, global impact. Global warming associated with the “greenhouse effect” is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth’s atmosphere. Climate change is the observed increase in the average temperature of the Earth’s atmosphere and oceans along with other substantial changes in climate—such as wind patterns, precipitation, and storms—over an extended period of time. Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/ manufacturing, utility, residential, commercial, and agricultural sectors.

To date, no national standards have been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

U.S. Environmental Protection Agency Endangerment Finding

The EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Assembly Bill 32

The primary act that has driven GHG regulation and analysis in California include the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599), which instructs CARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. AB 32 directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner. The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020.

CARB adopted its latest Scoping Plan on December 14, 2017. The Scoping Plan functions as a roadmap to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's Scoping Plan contains the main strategies California will implement to reduce carbon dioxide equivalent (CO_2e)[1] emissions by 174 million metric tons (MT), or approximately 30 percent, from the State's projected 2020 emissions level of 596 million $MTCO_2e$ under a business as usual (BAU) scenario. This is a reduction of 42 million $MTCO_2e$, or almost ten percent, from 2002 to 2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.

Senate Bill 32

Signed into law in September 2016, Senate Bill (SB) 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions to achieve 40 percent below 1990 levels by 2030.

[1] Carbon dioxide equivalent (CO_2e) is defined as a quantity that is used to compare the emissions from various greenhouse gases based upon their global warming potential.

Senate Bill 375

SB 375, known as the Sustainable Communities Strategy and Climate Protection Act, was signed into law in September 2008. SB 375 builds upon AB 32 by requiring CARB to develop regional GHG reduction targets for automobile and light truck sectors for 2020 and 2035, as compared to 2005 emissions levels. The per-capita GHG emissions reduction targets for passenger vehicles in the San Francisco Bay Area include a seven percent reduction by 2020 and a 15 percent reduction by 2035.

Consistent with the requirements of SB 375, Metropolitan Transportation Commission (MTC) partnered with the Association of Bay Area Governments (ABAG), BAAQMD, and Bay Conservation and Development Commission (BCDC) to prepare the region's Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan (RTP) process. The SCS is referred to as Plan Bay Area.

Originally adopted in 2013 Plan Bay Area, established a course for reducing per-capita GHG emissions through the promotion of compact, mixed-use residential and commercial neighborhoods near transit, particularly within identified Priority Development Areas (PDAs). Building upon the development strategies outlined in the original plan, Plan Bay Area 2040 was adopted in July 2017 as a focused update with revised planning assumptions based current demographic trends. Target areas in the Plan Bay Area 2040 Action Plan area related to reducing GHG emissions, improving transportation access, maintaining the region's infrastructure, and enhancing resilience to climate change (including fostering open space as a means to reduce flood risk and enhance air quality).

Bay Area Clean Air Plan

BAAQMD adopted the 2017 Bay Area Clean Air Plan, (2017 CAP) in April 2017. This plan updates the previous 2010 Clean Air Plan and focuses on two closely-related goals: protecting public health and protecting the climate. To protect the climate, the 2017 CAP defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG reduction targets for 2030 and 2050 and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG targets. The 2017 CAP includes a wide range of control measures designed to decrease emissions of methane and other "super-GHGs" that are potent climate pollutants in the near-term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations. The appliance efficiency regulations (California Code of Regulations [CCR] Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

Title 24 Building Energy Efficiency Standards. California's Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6), was first adopted in 1978 in response to a legislative

mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and went into effect on January 1, 2020. Under the 2019 standards, homes will use about 53 percent less energy and nonresidential buildings will use about 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code. The California Green Building Standards Code (CCR Title 24, Part 11 code) commonly referred to as the CALGreen Code, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2020 (2019 CALGreen). The 2019 CALGreen standards continue to improve upon the existing standards for new construction of, and additions and alterations to, residential and nonresidential buildings.

City of Calistoga

The City of Calistoga instated its commitment to reducing GHG emissions through the adoption of following goals and policies related to minimizing greenhouse gas emissions:

Goal OSC-6	Protect and improve Calistoga's existing high standard of air quality.
Objective OSC-6.1	Minimize air pollution emissions.
Policy 1	The City should support efforts to reduce vehicular emissions in the Calistoga Planning area by reducing congestion and dependence on automobile related forms of transportation.
Policy 4	The use of alternatively fueled vehicles for City operations shall be explored.
Goal OSC-7	Work to preserve the global environment.
Objective OSC-7.1	Minimize Calistoga's contribution to impacts on the global environment such as dependence on fossil fuels, consumption of non-renewable resources and discharge of toxins and pollutants.
Policy 1	The City shall promote the conservation of non-renewable energy resources and encourage the use of solar energy.
Policy 2	The City's own activities should emphasize minimization of impacts to the environment. Examples include wastewater

reclamation, use of passive solar energy and use of alternately-fueled City vehicles.

Policy 3 The City shall promote decreased reliance on motor vehicle travel through effective land use policies, improved public transit and facilities to accommodate bicycle and pedestrian modes of travel.

Policy 4 New building construction to minimize consumption of energy resources shall be encouraged through adoption of energy-efficient building codes and regulations.

4 SIGNIFICANCE CRITERIA

4.1 CEQA THRESHOLDS

The proposed project qualifies for exemption from CEQA in accordance with Section 15332 of the State CEQA Guidelines for in-fill development projects. The exemption applies because the project is located in an urbanized area.

The environmental analysis in this memorandum is patterned after the Initial Study Checklist recommended by the *CEQA Guidelines*, as amended, to support the CEQA exemption and demonstrate that the project would not result in air quality impacts. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant environmental impact if it causes one or more of the following to occur:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for O_3 precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people;
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

5 POTENTIAL IMPACTS AND MITIGATION

5.1 AIR QUALITY IMPACTS

Threshold 5.1 Would the project conflict with or obstruct implementation of the applicable air quality plan?

A project would be consistent with the 2017 Clean Air Plan Progress Report if the project would not exceed the growth assumptions in the plan. The primary method of determining consistency with the 2017 Clean Air Plan growth assumptions is consistency with the General Plan land use designations and zoning ordinance designations for the site. If the General Plan growth forecast was adopted prior to the adoption of the 2017 Clean Air Plan, then it can be assumed that the 2017 Clean Air Plan incorporates the growth forecast from the General Plan.

The Clean Air Plan assumptions for projected air emissions and pollutants in the City are based on the land use and development projection assumptions in the General Plan. The project is a proposed residential community designed to be consistent with the Calistoga Residential land use and zoning guidelines, and the existing character of the surrounding community and the City of Calistoga. The project is conforming with City regulations (i.e., consistent with the current land use designations for the project site). Additionally, as described below in Threshold 5.2, construction and operational air quality emissions generated by the proposed project would not exceed the BAAQMD's screening thresholds. These thresholds are established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. Because the proposed project would not exceed these thresholds, the proposed project would not be considered by the BAAQMD to be a substantial emitter of criteria air pollutants and would not contribute to any non-attainment areas in the San Francisco Bay Area Air Basin. Therefore, the project would be in compliance with the 2017 Clean Air Plan and impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant.

Threshold 5.2 Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

The BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO_X, PM_{10}, and $PM_{2.5}$. Developments below the significant thresholds are not expected to generate sufficient criteria air pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality violation. The proposed project would include a 15-lot single-family detached residential community (15 residential lots, and 5 other parcels: one for the private street, one for the bio-retention area, and three for open space).

Construction Emissions

Construction of the project is anticipated to begin in March 2022 and would occur approximately over an 18-month period. The estimated site grading earth work would be about 25,400 cubic yards of fill. Construction equipment would include concrete/industrial saws, graders, tractors, loaders, and backhoes during demolition and grading, pavers and rollers during paving, cranes, forklifts, generator sets, tractors,

loaders, backhoes, and welders during building construction, and air compressors during architectural coating. Emissions for each construction phase have been quantified based upon the phase durations and equipment types. The analysis of daily construction emissions has been prepared utilizing the California Emissions Estimator Model version 2016.3.2 (CalEEMod). Although the project includes single-family units and accessory dwelling units, the single-family land use type was used to be conservative. Refer to Appendix A: Air Quality and Greenhouse Gas Emissions Data, for the CalEEMod outputs and results. Project construction emissions are shown in Table 5: Construction Emissions, presents the maximum daily construction emissions. It should be noted that the BAAQMD construction thresholds are for average daily emissions. However, this analysis conservatively compares the modeled maximum emissions to the average daily thresholds.

Table 5: Construction Emissions

Emissions Source	Pollutant (pounds per day)[1, 2]					
			Exhaust		Fugitive Dust	
	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_X)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
2022 Construction Emissions	3.24	33.13	1.61	1.48	18.21	9.97
2023 Construction Emissions	10.12	15.16	0.70	0.66	0.25	0.07
Maximum Unmitigated	**10.12**	**33.13**	**1.61**	**1.48**	**18.21**	**9.97**
BAAQMD Significance Threshold	54	54	82	54	N/A	N/A
Exceed BAAQMD Threshold?	**No**	**No**	**No**	**No**	**N/A**	**N/A**

Notes:
1. Emissions were calculated using CalEEMod. Maximum daily emissions are conservatively reported. Fugitive dust emissions include the implementation of BAAQMD Basic Construction Mitigation Measures (watering exposed surfaces twice daily, cover haul trucks, clean track-outs, etc.), which are required for all projects.
2. Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, updated May 2017.
Source: Refer to the CalEEMod outputs provided in Appendix A, *Air Quality and Greenhouse Gas Emissions Data*.

Emitted pollutants would include ROG, NO_X, PM_{10}, and $PM_{2.5}$. ROG emissions would be the greatest during the architectural coating phase of construction. The largest amount of NO_X emissions would occur during the site preparation phase. PM_{10} and $PM_{2.5}$ emissions would occur from fugitive dust and from construction equipment exhaust. The majority of PM_{10} and $PM_{2.5}$ emissions would be generated by fugitive dust from earthwork activities. Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site.

Table 5 shows that unmitigated emissions would not exceed significance thresholds; therefore, a less than significant impact would occur with regard to construction emissions. It should be noted that although the proposed project would result in construction emissions below BAAQMD thresholds, Basic Construction Mitigation Measures would be required to be implemented during construction including dust control procedures (watering, covering/stabilizing disturbed areas, limiting on-site vehicle speeds, etc.) to further reduce emissions. As the proposed project would be required to comply with City and BAAQMD standards, impacts are less than significant.

Operational Emissions

Operational emissions for residential developments are typically generated from mobile sources (burning of fossil fuels in cars); energy sources (cooling, heating, and cooking); and area sources (landscape equipment and household products). According to Table 6: Operational Emissions, project operational emission would not exceed BAAQMD Thresholds. Impacts would be less than significant.

Table 6: Operational Emissions

Emission Source	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_X)	Exhaust		Fugitive	
			Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Annual Emissions (maximum tons per year)						
Area Source Emissions	0.14	0.00	0.01	0.01	--	--
Energy Emissions	0.00	0.02	0.00	0.00	--	--
Mobile Emissions	0.04	0.18	0.00	0.00	0.12	0.03
Total Project Unmitigated Emissions	**0.18**	**0.2**	**0.01**	**0.01**	**0.12**	**0.03**
BAAQMD Threshold[1]	*10*	*10*	*15*	*10*	*N/A*	*N/A*
Is Threshold Exceeded?	**No**	**No**	**No**	**No**	**N/A**	**N/A**
Daily Emissions (pounds per day)						
Area Source Emissions	1.12	0.14	0.56	0.56	--	--
Energy Emissions	0.01	0.11	0.01	0.01	--	--
Mobile Emissions	0.23	1.09	0.01	0.01	0.73	0.20
Total Project Unmitigated Emissions	**1.36**	**1.34**	**0.58**	**0.58**	**0.73**	**0.2**
BAAQMD Threshold[1]	*54*	*54*	*82*	*54*	*N/A*	*N/A*
Is Threshold Exceeded?	**No**	**No**	**No**	**No**	**N/A**	**N/A**

Notes:
1. Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, 2017.
Source: Refer to the CalEEMod outputs provided in Appendix A, *Air Quality and Greenhouse Gas Emissions Modeling Data*.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant.

Threshold 5.3 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

The SFBAAB is designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards and nonattainment for O_3 and $PM_{2.5}$ for Federal standards. As discussed above, the project's construction and operational emissions by themselves would not have the potential to exceed the BAAQMD significance thresholds for criteria pollutants.

Since these thresholds indicate whether an individual project's emissions have the potential to affect cumulative regional air quality, it can be expected that the project-related construction emissions would not be cumulatively considerable. The BAAQMD recommends Basic Construction Control Measures for all projects whether or not construction-related emissions exceed the thresholds of significance. Compliance with BAAQMD construction-related requirements are considered to reduce cumulative impacts at a Basin-wide level. As project emissions would be below the BAAQMD screening criteria, the project would not exceed the BAAQMD's construction or operational thresholds of significance. Therefore, project emissions would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.4 Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. As noted above, the closest sensitive receptors are the existing residential uses and a church surrounding the project site.

Toxic Air Contaminants

Construction would result in the generation of diesel particulate matter (DPM) emissions from the use of off-road diesel equipment required. The amount to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to toxic air contaminant (TAC) emission levels that exceed applicable standards). Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer.

Construction equipment and associated heavy-duty truck traffic generate diesel exhaust, which is a known TAC. Diesel exhaust from construction equipment operating at the site poses a health risk to nearby sensitive receptors. For construction activity, DPM is the primary toxic air contaminant of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations. Diesel exhaust

from construction equipment operating at the site poses a health risk to nearby sensitive receptors. The BAAQMD provides guidance for evaluating impacts from TACs in its *CEQA Air Quality Guidelines* document. As noted therein, an incremental cancer risk of greater than 10 cases per million at the Maximally Exposed Individual (MEI) would result in a significant impact. The BAAQMD considers exposure to annual $PM_{2.5}$ concentrations that exceed 0.3 $\mu g/m^3$ from a single source to be significant. The BAAQMD significance threshold for non-cancer hazards is 1.0.

Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. The use of diesel-powered construction equipment would be episodic and would occur throughout the site. Additionally, construction activities would be subject to and would comply with California regulations limiting idling to no more than 5 minutes, which would further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions. Furthermore, even during the most intense year of construction, emissions of DPM would be generated from different locations on the project site rather than in a single location because different types of construction activities (e.g., site preparation and building construction) would not occur at the same place at the same time.

During operations, the proposed residential development would not be expected to result in any localized emissions that could expose sensitive receptors in the surrounding environment to unhealthy air pollutant levels. Residences are not stationary sources of toxic air contaminants, and do not involve TAC emissions. Once construction is complete, operation of the future development would not be a source of TAC emissions and, therefore, would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant, and no mitigation is required.

Localized Carbon Monoxide Hotspots

The primary mobile-source criteria pollutant of local concern is carbon monoxide. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Transport of this criteria pollutant is extremely limited; CO disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. CO concentration modeling is therefore typically conducted for intersections that are projected to operate at unacceptable levels of service during peak commute hours.

The SFBAAB is designated as attainment for carbon monoxide (CO). Emissions and ambient concentrations of CO have decreased dramatically in the SFBAAB with the introduction of the catalytic converter in 1975. No exceedances of the CAAQS or NAAQS for CO have been recorded at nearby monitoring stations since 1991. As a result, the BAAQMD screening criteria notes that CO impacts may be determined to be less than significant if a project is consistent with the applicable congestion management plan (CMP) and would not increase traffic volumes at local intersections to more than 44,000 vehicles per hour, or 24,000 vehicles per hour for locations in heavily urban areas, where "urban canyons" formed by buildings tend to reduce air circulation. Based on the scope of the proposed project (15-lot single-family detached residential community), traffic would increase along surrounding roadways during long-term operational activities.

However, according to the Traffic Impact Study for the proposed project, 15 dwelling units would generate 149 daily vehicle trips. The City's General Plan Circulation Element has classified the Grant Street as a local Collector Street and therefore, the project would not involve intersections with more than 24,000 or 44,000 vehicles per hour. As a result, the project would not generate a significant number of vehicle trips and impacts associated with CO concentrations would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.5 Would the project create objectionable odors affecting a substantial number of people?

Construction Odors

Potential odors could arise from the diesel construction equipment used on-site, as well as from architectural coatings and asphalt off-gassing. Odors generated from the referenced sources are common in the man-made environment and are not known to be substantially offensive to adjacent receptors. Additionally, odors generated during construction activities would be temporary and would disperse rapidly.

Odors are typically regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health, or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance. In addition, BAAQMD's thresholds for odors are qualitative based on BAAQMD's Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Therefore, construction odors are not considered to be a significant impact.

According to the BAAQMD, land uses associated with odor complaints typically include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The proposed project does not include any uses identified by the BAAQMD as being associated with odors. Therefore, there would be no impacts from the proposed project.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.2 GREENHOUSE GAS EMISSIONS IMPACTS

Threshold 5.6 Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction Greenhouse Gas Emissions

The project would include direct and indirect GHG emissions. Direct operational-related GHG emissions for the proposed project would include emissions from area and mobile sources, while indirect emissions are from energy consumption, water demand, and solid waste.

Construction of the project would result in direct emissions of CO_2, N_2O, and CH_4 from the operation of construction equipment and the transport of materials and construction workers to and from the project site. Construction GHG emissions are typically summed and amortized over the lifetime of the project (assumed to be 30 years), then added to the operational emissions.[2] BAAQMD does not have a threshold for construction GHG emissions. However, the BAAQMD advises that construction GHG should be disclosed and a determination on the significance of construction GHG emissions in relation to meeting AB 32 GHG reduction goals should be made. Project construction GHG emissions are shown in Table 7: Construction Greenhouse Gas Emissions.

Table 7: Construction Greenhouse Gas Emissions

Emissions Source	$MTCO_2e$
2022	397
2023	157
Total	**554**
Construction Amortized Over 30 Years	18

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

Operational Greenhouse Gas Emissions

Operational or long-term emissions occur over the life of the proposed project. GHG emissions would result from direct emissions such as project generated vehicular traffic, on-site combustion of natural gas, operation of any landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power over the life of the project, the energy required to convey water to, and wastewater from the project site, the emissions associated with solid waste generated from the project site, and any fugitive refrigerants from air conditioning or refrigerators. Table 8: Operational Greenhouse Gas Emissions, summarizes the total GHG emissions associated with proposed project. As shown, the project would generate approximately 194 $MTCO_2e$/year, which is below the BAAQMD's 1,100 $MTCO_2e$ per year threshold.

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

Table 8: Operational Greenhouse Gas Emissions	
Emissions Source	**$MTCO_2e$ per Year**
Construction Amortized Over 30 Years	18
Area Source	2
Energy	32
Mobile	131
Waste	9
Water and Wastewater	2
Total	**194**
Threshold	1,100
Threshold Exceeded?	**No**
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.	

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.7 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As discussed above, the City of Calistoga Climate Action Plan includes goals and policies to mitigate, to the extent feasible at the local level, the potential impacts of climate change. Many of the strategies in the plan (e.g., reducing automobile dependence, promoting renewable energy, increasing energy efficiency, conserving water, and eliminating waste, etc.) provide co-benefits to the community. They have the potential not only to reduce GHG emissions, but also to improve air quality, lower energy and water bills, reduce dependence on imported oil, and enhance Calistoga's quality of life. Following all the applicable rules and policies and compliance with building codes and regulations would decrease the energy consumption and GHG emissions related to the proposed project. Furthermore, it should be noted that the project is an infill development and surrounded by similar land uses which would decrease vehicle miles traveled by locating residents near existing development and services.

The state and regional measures include increasing building energy efficiency, increasing renewable energy use, encouraging a shift toward low-carbon transportation options, increasing vehicle and equipment efficiency, encouraging a shift toward low-carbon fuels, increasing solid waste diversion, increasing capture and use of methane from landfills, reducing water consumption, increasing water and wastewater infrastructure efficiency, and increasing use of renewable energy in water and wastewater systems. The local measures include increasing building energy efficiency, increasing renewable energy use, reducing travel demand through focused growth, encouraging a shift toward low-carbon transportation options, encouraging a shift toward low-carbon fuels, reducing idling, reducing water consumption, and increasing recycled water and greywater. These measures, as described in the City's Climate Action Plan are primarily municipal measures that require improved and efficient infrastructure, and/or building efficiency.

The proposed project would be required to comply with all building codes in effect at the time of construction which include energy conservation measures mandated by Title 24 of the California Building Standards Code – Energy Efficiency Standards. Because Title 24 standards require energy conservation features in new construction (e.g., high- efficiency lighting, high-efficiency heating, ventilating, and air-conditioning [HVAC] systems, thermal insulation, double-glazed windows, water conserving plumbing fixtures), they indirectly regulate and reduce GHG emissions. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2019 standards improved upon the 2016 standards for new construction of, and additions and alterations to, residential, commercial, and industrial buildings. The 2019 Building Energy Efficiency Standards went into effect on January 1, 2020. Under the 2019 standards, homes use about 53 percent less energy and nonresidential buildings use about 30 percent less energy than buildings under the 2016 standards.

The project would incorporate several energy efficiency design features that would comply with Title 24 requirements as well as the California Green Building Code standards that are consistent with the City's efficiency measures in Climate Action Plan. The project is an infill project within a developed area and would generate GHG emissions well below BAAQMD screening levels. The proposed project demonstrates consistency with the goals, measures, and emission reduction targets of Climate Action Plan and would not conflict with the municipal measures. Therefore, the proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. Impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Conclusion

Project implementation would result in less than significant short-term, long-term regional, and localized air quality impacts. Additionally, the proposed project would result in less than significant GHG impacts. No mitigation measures would be required. Therefore, the proposed project would not result in significant effects related to Section 15332(d) of the State CEQA Guidelines.

6 REFERENCES

1. Bay Area Air Quality Management District, *Planning Healthy Places*, 2016.
2. Bay Area Air Quality Management District, *CEQA Air Quality Guidelines,* 2017.
3. Bay Area Air Quality Management District, *Clean Air Plan*, 2017.
4. Bay Area Air Quality Management District, *Air Quality Standards and Attainment Status,* 2017.
5. Bay Area Air Quality Management District, *Current Rules*, Accessed April 27, 2021.
6. California Air Pollution Control Officers Association, *Health Effects*, http://www.capcoa.org/health-effects/, Accessed April 27, 2021.
7. California Air Resources Board (CARB), *Aerometric Data Analysis and Measurement System (ADAM) Top Four Summaries from 2017 to 2018*, 2019.
8. City of Calistoga, *Climate Action Plan Adopted by the Calistoga City Council*, April 2014.
9. United States Environmental Protection Agency (U.S. EPA), *Policy Assessment for the Review of the Lead National Ambient Air Quality Standards*, 2013.
10. Vander Toolen Associates (VTA), *Overall Landscape Plan,* January 20, 2021.

Appendix A

Air Quality and Greenhouse Gas Emissions Data

Residential Community in Calistoga

Napa County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	15.00	Dwelling Unit	3.74	27,000.00	43
Other Asphalt Surfaces	0.98	Acre	0.98	42,688.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	160.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Residential Community in Calistoga - Napa County, Summer

Project Characteristics - Adjusted per the PGE 2020 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 163-25*0.029-298*0.00617=531.4363 to avoid double counting.

Land Use - Land uses

Construction Phase - anticipated construction schedule

Grading -

Woodstoves - BAAQMD prohibits the use of wood burning.

Energy Use - Title 24

Construction Off-road Equipment Mitigation - BAAQMD Rule Compliance

Water Mitigation -

Waste Mitigation -

Residential Community in Calistoga - Napa County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	45.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	8.00	90.00
tblConstructionPhase	NumDays	18.00	30.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	PhaseEndDate	4/21/2023	8/2/2023
tblConstructionPhase	PhaseEndDate	3/2/2023	5/9/2023
tblConstructionPhase	PhaseEndDate	3/28/2022	2/28/2022
tblConstructionPhase	PhaseEndDate	4/14/2022	8/2/2022
tblConstructionPhase	PhaseEndDate	3/28/2023	6/20/2023
tblConstructionPhase	PhaseEndDate	4/4/2022	3/29/2022
tblConstructionPhase	PhaseStartDate	3/29/2023	6/1/2023
tblConstructionPhase	PhaseStartDate	4/15/2022	8/3/2022
tblConstructionPhase	PhaseStartDate	4/5/2022	3/30/2022
tblConstructionPhase	PhaseStartDate	3/3/2023	5/10/2023
tblConstructionPhase	PhaseStartDate	3/29/2022	3/2/2022
tblEnergyUse	LightingElect	1,608.84	1,126.19
tblEnergyUse	T24E	325.76	228.03
tblFireplaces	NumberWood	6.45	0.00
tblGrading	MaterialImported	0.00	25,400.00
tblLandUse	LotAcreage	4.87	3.74
tblProjectCharacteristics	CO2IntensityFactor	641.35	160.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2329	33.1189	20.1630	0.0523	18.2141	1.6135	19.8276	9.9699	1.4844	11.4543	0.0000	5,283.8384	5,283.8384	1.1954	0.0000	5,309.9437
2023	10.1193	15.1307	16.9798	0.0310	0.2498	0.7017	0.9515	0.0676	0.6603	0.7279	0.0000	2,969.3531	2,969.3531	0.6223	0.0000	2,984.9109
Maximum	**10.1193**	**33.1189**	**20.1630**	**0.0523**	**18.2141**	**1.6135**	**19.8276**	**9.9699**	**1.4844**	**11.4543**	**0.0000**	**5,283.8384**	**5,283.8384**	**1.1954**	**0.0000**	**5,309.9437**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2329	33.1189	20.1630	0.0523	7.8635	1.6135	9.4770	4.2827	1.4844	5.7671	0.0000	5,283.8384	5,283.8384	1.1954	0.0000	5,309.9437
2023	10.1193	15.1307	16.9798	0.0310	0.2374	0.7017	0.9391	0.0646	0.6603	0.7248	0.0000	2,969.3531	2,969.3531	0.6223	0.0000	2,984.9109
Maximum	**10.1193**	**33.1189**	**20.1630**	**0.0523**	**7.8635**	**1.6135**	**9.4770**	**4.2827**	**1.4844**	**5.7671**	**0.0000**	**5,283.8384**	**5,283.8384**	**1.1954**	**0.0000**	**5,309.9437**

Residential Community in Calistoga - Napa County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.13**	**0.00**	**49.87**	**56.69**	**0.00**	**46.71**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1157	0.1414	4.6108	0.0114		0.5579	0.5579		0.5579	0.5579	80.4693	94.8756	175.3449	0.3801	1.7000e-003	185.3535
Energy	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593
Mobile	0.2333	1.0335	2.3739	8.5900e-003	0.7301	6.6400e-003	0.7367	0.1953	6.2100e-003	0.2015		872.0349	872.0349	0.0320		872.8354
Total	**1.3619**	**1.2850**	**7.0315**	**0.0207**	**0.7301**	**0.5734**	**1.3035**	**0.1953**	**0.5730**	**0.7683**	**80.4693**	**1,107.4347**	**1,187.9040**	**0.4148**	**4.2800e-003**	**1,199.5482**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1157	0.1414	4.6108	0.0114		0.5579	0.5579		0.5579	0.5579	80.4693	94.8756	175.3449	0.3801	1.7000e-003	185.3535
Energy	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593
Mobile	0.2333	1.0335	2.3739	8.5900e-003	0.7301	6.6400e-003	0.7367	0.1953	6.2100e-003	0.2015		872.0349	872.0349	0.0320		872.8354
Total	**1.3619**	**1.2850**	**7.0315**	**0.0207**	**0.7301**	**0.5734**	**1.3035**	**0.1953**	**0.5730**	**0.7683**	**80.4693**	**1,107.4347**	**1,187.9040**	**0.4148**	**4.2800e-003**	**1,199.5482**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2022	2/28/2022	5	0	
2	Site Preparation	Site Preparation	3/2/2022	3/29/2022	5	20	
3	Grading	Grading	3/30/2022	8/2/2022	5	90	
4	Building Construction	Building Construction	8/3/2022	5/9/2023	5	200	
5	Paving	Paving	5/10/2023	6/20/2023	5	30	
6	Architectural Coating	Architectural Coating	6/1/2023	8/2/2023	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 45

Acres of Paving: 0.98

Residential Indoor: 54,675; Residential Outdoor: 18,225; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,561 (Architectural Coating – sqft)

OffRoad Equipment

Residential Community in Calistoga - Napa County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,511.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	23.00	9.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0628	0.0354	0.4652	1.3500e-003	0.1479	9.3000e-004	0.1488	0.0392	8.6000e-004	0.0401		134.6983	134.6983	3.2400e-003		134.7793
Total	**0.0628**	**0.0354**	**0.4652**	**1.3500e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.6000e-004**	**0.0401**		**134.6983**	**134.6983**	**3.2400e-003**		**134.7793**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**7.7233**	**1.6126**	**9.3359**	**4.2454**	**1.4836**	**5.7289**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0628	0.0354	0.4652	1.3500e-003	0.1402	9.3000e-004	0.1411	0.0373	8.6000e-004	0.0382		134.6983	134.6983	3.2400e-003		134.7793
Total	**0.0628**	**0.0354**	**0.4652**	**1.3500e-003**	**0.1402**	**9.3000e-004**	**0.1411**	**0.0373**	**8.6000e-004**	**0.0382**		**134.6983**	**134.6983**	**3.2400e-003**		**134.7793**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**6.5523**	**0.9409**	**7.4932**	**3.3675**	**0.8656**	**4.2331**		**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2037	6.9017	1.4640	0.0215	0.4865	0.0207	0.5072	0.1332	0.0198	0.1530		2,299.5434	2,299.5434	0.1126		2,302.3593
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0523	0.0295	0.3877	1.1300e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		112.2486	112.2486	2.7000e-003		112.3160
Total	**0.2560**	**6.9311**	**1.8516**	**0.0226**	**0.6097**	**0.0215**	**0.6312**	**0.1659**	**0.0205**	**0.1864**		**2,411.7920**	**2,411.7920**	**0.1153**		**2,414.6754**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**2.8011**	**0.9409**	**3.7420**	**1.4396**	**0.8656**	**2.3052**	**0.0000**	**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2037	6.9017	1.4640	0.0215	0.4643	0.0207	0.4850	0.1278	0.0198	0.1476		2,299.5434	2,299.5434	0.1126		2,302.3593
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0523	0.0295	0.3877	1.1300e-003	0.1168	7.7000e-004	0.1176	0.0311	7.1000e-004	0.0318		112.2486	112.2486	2.7000e-003		112.3160
Total	**0.2560**	**6.9311**	**1.8516**	**0.0226**	**0.5811**	**0.0215**	**0.6026**	**0.1589**	**0.0205**	**0.1794**		**2,411.7920**	**2,411.7920**	**0.1153**		**2,414.6754**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0278	0.9200	0.2200	2.4100e-003	0.0609	1.9100e-003	0.0628	0.0175	1.8300e-003	0.0193		255.7421	255.7421	0.0123		256.0502
Worker	0.0802	0.0452	0.5944	1.7300e-003	0.1889	1.1900e-003	0.1901	0.0501	1.0900e-003	0.0512		172.1145	172.1145	4.1400e-003		172.2179
Total	**0.1080**	**0.9652**	**0.8144**	**4.1400e-003**	**0.2498**	**3.1000e-003**	**0.2529**	**0.0676**	**2.9200e-003**	**0.0706**		**427.8566**	**427.8566**	**0.0165**		**428.2681**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0278	0.9200	0.2200	2.4100e-003	0.0583	1.9100e-003	0.0602	0.0169	1.8300e-003	0.0187		255.7421	255.7421	0.0123		256.0502
Worker	0.0802	0.0452	0.5944	1.7300e-003	0.1791	1.1900e-003	0.1803	0.0477	1.0900e-003	0.0488		172.1145	172.1145	4.1400e-003		172.2179
Total	**0.1080**	**0.9652**	**0.8144**	**4.1400e-003**	**0.2374**	**3.1000e-003**	**0.2404**	**0.0646**	**2.9200e-003**	**0.0675**		**427.8566**	**427.8566**	**0.0165**		**428.2681**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0207	0.7054	0.1921	2.3500e-003	0.0609	8.1000e-004	0.0617	0.0175	7.8000e-004	0.0183		248.6521	248.6521	0.0108		248.9215
Worker	0.0745	0.0404	0.5436	1.6600e-003	0.1889	1.1500e-003	0.1901	0.0501	1.0600e-003	0.0512		165.4911	165.4911	3.6900e-003		165.5834
Total	**0.0952**	**0.7458**	**0.7358**	**4.0100e-003**	**0.2498**	**1.9600e-003**	**0.2518**	**0.0676**	**1.8400e-003**	**0.0695**		**414.1431**	**414.1431**	**0.0145**		**414.5049**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0207	0.7054	0.1921	2.3500e-003	0.0583	8.1000e-004	0.0591	0.0169	7.8000e-004	0.0177		248.6521	248.6521	0.0108		248.9215
Worker	0.0745	0.0404	0.5436	1.6600e-003	0.1791	1.1500e-003	0.1802	0.0477	1.0600e-003	0.0488		165.4911	165.4911	3.6900e-003		165.5834
Total	**0.0952**	**0.7458**	**0.7358**	**4.0100e-003**	**0.2374**	**1.9600e-003**	**0.2393**	**0.0646**	**1.8400e-003**	**0.0664**		**414.1431**	**414.1431**	**0.0145**		**414.5049**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9181	8.7903	12.1905	0.0189		0.4357	0.4357		0.4025	0.4025		1,805.4304	1,805.4304	0.5673		1,819.6122
Paving	0.0856					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0037**	**8.7903**	**12.1905**	**0.0189**		**0.4357**	**0.4357**		**0.4025**	**0.4025**		**1,805.4304**	**1,805.4304**	**0.5673**		**1,819.6122**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0648	0.0352	0.4727	1.4400e-003	0.1643	1.0000e-003	0.1653	0.0436	9.2000e-004	0.0445		143.9053	143.9053	3.2100e-003		143.9855
Total	**0.0648**	**0.0352**	**0.4727**	**1.4400e-003**	**0.1643**	**1.0000e-003**	**0.1653**	**0.0436**	**9.2000e-004**	**0.0445**		**143.9053**	**143.9053**	**3.2100e-003**		**143.9855**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9181	8.7903	12.1905	0.0189		0.4357	0.4357		0.4025	0.4025	0.0000	1,805.4304	1,805.4304	0.5673		1,819.6122
Paving	0.0856					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0037**	**8.7903**	**12.1905**	**0.0189**		**0.4357**	**0.4357**		**0.4025**	**0.4025**	**0.0000**	**1,805.4304**	**1,805.4304**	**0.5673**		**1,819.6122**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0648	0.0352	0.4727	1.4400e-003	0.1557	1.0000e-003	0.1567	0.0415	9.2000e-004	0.0424		143.9053	143.9053	3.2100e-003		143.9855
Total	**0.0648**	**0.0352**	**0.4727**	**1.4400e-003**	**0.1557**	**1.0000e-003**	**0.1567**	**0.0415**	**9.2000e-004**	**0.0424**		**143.9053**	**143.9053**	**3.2100e-003**		**143.9855**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.8430					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**9.0346**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0162	8.7900e-003	0.1182	3.6000e-004	0.0411	2.5000e-004	0.0413	0.0109	2.3000e-004	0.0111		35.9763	35.9763	8.0000e-004		35.9964
Total	**0.0162**	**8.7900e-003**	**0.1182**	**3.6000e-004**	**0.0411**	**2.5000e-004**	**0.0413**	**0.0109**	**2.3000e-004**	**0.0111**		**35.9763**	**35.9763**	**8.0000e-004**		**35.9964**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.8430					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**9.0346**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0162	8.7900e-003	0.1182	3.6000e-004	0.0389	2.5000e-004	0.0392	0.0104	2.3000e-004	0.0106		35.9763	35.9763	8.0000e-004		35.9964
Total	**0.0162**	**8.7900e-003**	**0.1182**	**3.6000e-004**	**0.0389**	**2.5000e-004**	**0.0392**	**0.0104**	**2.3000e-004**	**0.0106**		**35.9763**	**35.9763**	**8.0000e-004**		**35.9964**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2333	1.0335	2.3739	8.5900e-003	0.7301	6.6400e-003	0.7367	0.1953	6.2100e-003	0.2015		872.0349	872.0349	0.0320		872.8354
Unmitigated	0.2333	1.0335	2.3739	8.5900e-003	0.7301	6.6400e-003	0.7367	0.1953	6.2100e-003	0.2015		872.0349	872.0349	0.0320		872.8354

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	142.80	148.65	129.30	327,288	327,288
Total	142.80	148.65	129.30	327,288	327,288

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.593730	0.035302	0.167493	0.109091	0.021115	0.005747	0.017044	0.037455	0.003901	0.001761	0.005404	0.001027	0.000929
Single Family Housing	0.593730	0.035302	0.167493	0.109091	0.021115	0.005747	0.017044	0.037455	0.003901	0.001761	0.005404	0.001027	0.000929

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593
NaturalGas Unmitigated	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1194.46	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593
Total		**0.0129**	**0.1101**	**0.0468**	**7.0000e-004**		**8.9000e-003**	**8.9000e-003**		**8.9000e-003**	**8.9000e-003**		**140.5242**	**140.5242**	**2.6900e-003**	**2.5800e-003**	**141.3593**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.19446	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593
Total		**0.0129**	**0.1101**	**0.0468**	**7.0000e-004**		**8.9000e-003**	**8.9000e-003**		**8.9000e-003**	**8.9000e-003**		**140.5242**	**140.5242**	**2.6900e-003**	**2.5800e-003**	**141.3593**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1157	0.1414	4.6108	0.0114		0.5579	0.5579		0.5579	0.5579	80.4693	94.8756	175.3449	0.3801	1.7000e-003	185.3535
Unmitigated	1.1157	0.1414	4.6108	0.0114		0.5579	0.5579		0.5579	0.5579	80.4693	94.8756	175.3449	0.3801	1.7000e-003	185.3535

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5929					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3765	0.1271	3.3729	0.0114		0.5511	0.5511		0.5511	0.5511	80.4693	92.6471	173.1164	0.3780	1.7000e-003	183.0714
Landscaping	0.0373	0.0143	1.2379	7.0000e-005		6.8500e-003	6.8500e-003		6.8500e-003	6.8500e-003		2.2285	2.2285	2.1400e-003		2.2821
Total	**1.1157**	**0.1414**	**4.6108**	**0.0114**		**0.5579**	**0.5579**		**0.5579**	**0.5579**	**80.4693**	**94.8756**	**175.3449**	**0.3801**	**1.7000e-003**	**185.3535**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5929					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3765	0.1271	3.3729	0.0114		0.5511	0.5511		0.5511	0.5511	80.4693	92.6471	173.1164	0.3780	1.7000e-003	183.0714
Landscaping	0.0373	0.0143	1.2379	7.0000e-005		6.8500e-003	6.8500e-003		6.8500e-003	6.8500e-003		2.2285	2.2285	2.1400e-003		2.2821
Total	**1.1157**	**0.1414**	**4.6108**	**0.0114**		**0.5579**	**0.5579**		**0.5579**	**0.5579**	**80.4693**	**94.8756**	**175.3449**	**0.3801**	**1.7000e-003**	**185.3535**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Residential Community in Calistoga

Napa County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	15.00	Dwelling Unit	3.74	27,000.00	43
Other Asphalt Surfaces	0.98	Acre	0.98	42,688.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	160.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Residential Community in Calistoga - Napa County, Winter

Project Characteristics - Adjusted per the PGE 2020 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 163-25*0.029-298*0.00617=531.4363 to avoid double counting.

Land Use - Land uses

Construction Phase - anticipated construction schedule

Grading -

Woodstoves - BAAQMD prohibits the use of wood burning.

Energy Use - Title 24

Construction Off-road Equipment Mitigation - BAAQMD Rule Compliance

Water Mitigation -

Waste Mitigation -

Residential Community in Calistoga - Napa County, Winter

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	45.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	8.00	90.00
tblConstructionPhase	NumDays	18.00	30.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	PhaseEndDate	4/21/2023	8/2/2023
tblConstructionPhase	PhaseEndDate	3/2/2023	5/9/2023
tblConstructionPhase	PhaseEndDate	3/28/2022	2/28/2022
tblConstructionPhase	PhaseEndDate	4/14/2022	8/2/2022
tblConstructionPhase	PhaseEndDate	3/28/2023	6/20/2023
tblConstructionPhase	PhaseEndDate	4/4/2022	3/29/2022
tblConstructionPhase	PhaseStartDate	3/29/2023	6/1/2023
tblConstructionPhase	PhaseStartDate	4/15/2022	8/3/2022
tblConstructionPhase	PhaseStartDate	4/5/2022	3/30/2022
tblConstructionPhase	PhaseStartDate	3/3/2023	5/10/2023
tblConstructionPhase	PhaseStartDate	3/29/2022	3/2/2022
tblEnergyUse	LightingElect	1,608.84	1,126.19
tblEnergyUse	T24E	325.76	228.03
tblFireplaces	NumberWood	6.45	0.00
tblGrading	MaterialImported	0.00	25,400.00
tblLandUse	LotAcreage	4.87	3.74
tblProjectCharacteristics	CO2IntensityFactor	641.35	160.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2361	33.1284	20.1451	0.0518	18.2141	1.6135	19.8276	9.9699	1.4844	11.4543	0.0000	5,238.3339	5,238.3339	1.1952	0.0000	5,264.5847
2023	10.1235	15.1463	16.9835	0.0308	0.2498	0.7017	0.9515	0.0676	0.6603	0.7279	0.0000	2,950.9009	2,950.9009	0.6230	0.0000	2,966.4756
Maximum	**10.1235**	**33.1284**	**20.1451**	**0.0518**	**18.2141**	**1.6135**	**19.8276**	**9.9699**	**1.4844**	**11.4543**	**0.0000**	**5,238.3339**	**5,238.3339**	**1.1952**	**0.0000**	**5,264.5847**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2361	33.1284	20.1451	0.0518	7.8635	1.6135	9.4770	4.2827	1.4844	5.7671	0.0000	5,238.3339	5,238.3339	1.1952	0.0000	5,264.5847
2023	10.1235	15.1463	16.9835	0.0308	0.2374	0.7017	0.9391	0.0646	0.6603	0.7249	0.0000	2,950.9009	2,950.9009	0.6230	0.0000	2,966.4756
Maximum	**10.1235**	**33.1284**	**20.1451**	**0.0518**	**7.8635**	**1.6135**	**9.4770**	**4.2827**	**1.4844**	**5.7671**	**0.0000**	**5,238.3339**	**5,238.3339**	**1.1952**	**0.0000**	**5,264.5847**

Residential Community in Calistoga - Napa County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.13**	**0.00**	**49.87**	**56.69**	**0.00**	**46.71**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1157	0.1414	4.6108	0.0114		0.5579	0.5579		0.5579	0.5579	80.4693	94.8756	175.3449	0.3801	1.7000e-003	185.3535
Energy	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593
Mobile	0.1997	1.0855	2.4536	8.0900e-003	0.7301	6.6900e-003	0.7368	0.1953	6.2500e-003	0.2016		821.1018	821.1018	0.0332		821.9312
Total	**1.3283**	**1.3369**	**7.1112**	**0.0202**	**0.7301**	**0.5735**	**1.3036**	**0.1953**	**0.5731**	**0.7684**	**80.4693**	**1,056.5016**	**1,136.9709**	**0.4160**	**4.2800e-003**	**1,148.6439**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1157	0.1414	4.6108	0.0114		0.5579	0.5579		0.5579	0.5579	80.4693	94.8756	175.3449	0.3801	1.7000e-003	185.3535
Energy	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593
Mobile	0.1997	1.0855	2.4536	8.0900e-003	0.7301	6.6900e-003	0.7368	0.1953	6.2500e-003	0.2016		821.1018	821.1018	0.0332		821.9312
Total	**1.3283**	**1.3369**	**7.1112**	**0.0202**	**0.7301**	**0.5735**	**1.3036**	**0.1953**	**0.5731**	**0.7684**	**80.4693**	**1,056.5016**	**1,136.9709**	**0.4160**	**4.2800e-003**	**1,148.6439**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2022	2/28/2022	5	0	
2	Site Preparation	Site Preparation	3/2/2022	3/29/2022	5	20	
3	Grading	Grading	3/30/2022	8/2/2022	5	90	
4	Building Construction	Building Construction	8/3/2022	5/9/2023	5	200	
5	Paving	Paving	5/10/2023	6/20/2023	5	30	
6	Architectural Coating	Architectural Coating	6/1/2023	8/2/2023	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 45

Acres of Paving: 0.98

Residential Indoor: 54,675; Residential Outdoor: 18,225; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,561 (Architectural Coating – sqft)

OffRoad Equipment

Residential Community in Calistoga - Napa County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,511.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	23.00	9.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0660	0.0449	0.4473	1.2500e-003	0.1479	9.3000e-004	0.1488	0.0392	8.6000e-004	0.0401		124.5908	124.5908	3.0600e-003		124.6674
Total	**0.0660**	**0.0449**	**0.4473**	**1.2500e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.6000e-004**	**0.0401**		**124.5908**	**124.5908**	**3.0600e-003**		**124.6674**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**7.7233**	**1.6126**	**9.3359**	**4.2454**	**1.4836**	**5.7289**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0660	0.0449	0.4473	1.2500e-003	0.1402	9.3000e-004	0.1411	0.0373	8.6000e-004	0.0382		124.5908	124.5908	3.0600e-003		124.6674
Total	**0.0660**	**0.0449**	**0.4473**	**1.2500e-003**	**0.1402**	**9.3000e-004**	**0.1411**	**0.0373**	**8.6000e-004**	**0.0382**		**124.5908**	**124.5908**	**3.0600e-003**		**124.6674**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**6.5523**	**0.9409**	**7.4932**	**3.3675**	**0.8656**	**4.2331**		**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2091	7.0671	1.5703	0.0212	0.4865	0.0211	0.5076	0.1332	0.0202	0.1534		2,262.4618	2,262.4618	0.1186		2,265.4268
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0550	0.0374	0.3727	1.0400e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		103.8257	103.8257	2.5500e-003		103.8895
Total	**0.2641**	**7.1045**	**1.9431**	**0.0222**	**0.6097**	**0.0219**	**0.6316**	**0.1659**	**0.0209**	**0.1868**		**2,366.2875**	**2,366.2875**	**0.1212**		**2,369.3163**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**2.8011**	**0.9409**	**3.7420**	**1.4396**	**0.8656**	**2.3052**	**0.0000**	**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2091	7.0671	1.5703	0.0212	0.4643	0.0211	0.4854	0.1278	0.0202	0.1480		2,262.4618	2,262.4618	0.1186		2,265.4268
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0550	0.0374	0.3727	1.0400e-003	0.1168	7.7000e-004	0.1176	0.0311	7.1000e-004	0.0318		103.8257	103.8257	2.5500e-003		103.8895
Total	**0.2641**	**7.1045**	**1.9431**	**0.0222**	**0.5811**	**0.0219**	**0.6030**	**0.1589**	**0.0209**	**0.1798**		**2,366.2875**	**2,366.2875**	**0.1212**		**2,369.3163**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0295	0.9296	0.2538	2.3600e-003	0.0609	1.9800e-003	0.0628	0.0175	1.8900e-003	0.0194		249.5255	249.5255	0.0134		249.8604
Worker	0.0843	0.0573	0.5715	1.6000e-003	0.1889	1.1900e-003	0.1901	0.0501	1.0900e-003	0.0512		159.1994	159.1994	3.9100e-003		159.2973
Total	**0.1138**	**0.9869**	**0.8253**	**3.9600e-003**	**0.2498**	**3.1700e-003**	**0.2530**	**0.0676**	**2.9800e-003**	**0.0706**		**408.7249**	**408.7249**	**0.0173**		**409.1576**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0295	0.9296	0.2538	2.3600e-003	0.0583	1.9800e-003	0.0602	0.0169	1.8900e-003	0.0188		249.5255	249.5255	0.0134		249.8604
Worker	0.0843	0.0573	0.5715	1.6000e-003	0.1791	1.1900e-003	0.1803	0.0477	1.0900e-003	0.0488		159.1994	159.1994	3.9100e-003		159.2973
Total	**0.1138**	**0.9869**	**0.8253**	**3.9600e-003**	**0.2374**	**3.1700e-003**	**0.2405**	**0.0646**	**2.9800e-003**	**0.0676**		**408.7249**	**408.7249**	**0.0173**		**409.1576**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0221	0.7101	0.2193	2.2900e-003	0.0609	8.5000e-004	0.0617	0.0175	8.1000e-004	0.0183		242.6164	242.6164	0.0117		242.9080
Worker	0.0784	0.0513	0.5202	1.5400e-003	0.1889	1.1500e-003	0.1901	0.0501	1.0600e-003	0.0512		153.0746	153.0746	3.4800e-003		153.1615
Total	**0.1005**	**0.7614**	**0.7395**	**3.8300e-003**	**0.2498**	**2.0000e-003**	**0.2518**	**0.0676**	**1.8700e-003**	**0.0695**		**395.6910**	**395.6910**	**0.0152**		**396.0695**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0221	0.7101	0.2193	2.2900e-003	0.0583	8.5000e-004	0.0591	0.0169	8.1000e-004	0.0177		242.6164	242.6164	0.0117		242.9080
Worker	0.0784	0.0513	0.5202	1.5400e-003	0.1791	1.1500e-003	0.1802	0.0477	1.0600e-003	0.0488		153.0746	153.0746	3.4800e-003		153.1615
Total	**0.1005**	**0.7614**	**0.7395**	**3.8300e-003**	**0.2374**	**2.0000e-003**	**0.2394**	**0.0646**	**1.8700e-003**	**0.0665**		**395.6910**	**395.6910**	**0.0152**		**396.0695**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9181	8.7903	12.1905	0.0189		0.4357	0.4357		0.4025	0.4025		1,805.4304	1,805.4304	0.5673		1,819.6122
Paving	0.0856					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0037**	**8.7903**	**12.1905**	**0.0189**		**0.4357**	**0.4357**		**0.4025**	**0.4025**		**1,805.4304**	**1,805.4304**	**0.5673**		**1,819.6122**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0682	0.0446	0.4524	1.3400e-003	0.1643	1.0000e-003	0.1653	0.0436	9.2000e-004	0.0445		133.1084	133.1084	3.0200e-003		133.1839
Total	**0.0682**	**0.0446**	**0.4524**	**1.3400e-003**	**0.1643**	**1.0000e-003**	**0.1653**	**0.0436**	**9.2000e-004**	**0.0445**		**133.1084**	**133.1084**	**3.0200e-003**		**133.1839**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9181	8.7903	12.1905	0.0189		0.4357	0.4357		0.4025	0.4025	0.0000	1,805.4304	1,805.4304	0.5673		1,819.6122
Paving	0.0856					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0037**	**8.7903**	**12.1905**	**0.0189**		**0.4357**	**0.4357**		**0.4025**	**0.4025**	**0.0000**	**1,805.4304**	**1,805.4304**	**0.5673**		**1,819.6122**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0682	0.0446	0.4524	1.3400e-003	0.1557	1.0000e-003	0.1567	0.0415	9.2000e-004	0.0424		133.1084	133.1084	3.0200e-003		133.1839
Total	**0.0682**	**0.0446**	**0.4524**	**1.3400e-003**	**0.1557**	**1.0000e-003**	**0.1567**	**0.0415**	**9.2000e-004**	**0.0424**		**133.1084**	**133.1084**	**3.0200e-003**		**133.1839**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.8430					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**9.0346**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0171	0.0112	0.1131	3.3000e-004	0.0411	2.5000e-004	0.0413	0.0109	2.3000e-004	0.0111		33.2771	33.2771	7.6000e-004		33.2960
Total	**0.0171**	**0.0112**	**0.1131**	**3.3000e-004**	**0.0411**	**2.5000e-004**	**0.0413**	**0.0109**	**2.3000e-004**	**0.0111**		**33.2771**	**33.2771**	**7.6000e-004**		**33.2960**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.8430					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**9.0346**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0171	0.0112	0.1131	3.3000e-004	0.0389	2.5000e-004	0.0392	0.0104	2.3000e-004	0.0106		33.2771	33.2771	7.6000e-004		33.2960
Total	**0.0171**	**0.0112**	**0.1131**	**3.3000e-004**	**0.0389**	**2.5000e-004**	**0.0392**	**0.0104**	**2.3000e-004**	**0.0106**		**33.2771**	**33.2771**	**7.6000e-004**		**33.2960**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1997	1.0855	2.4536	8.0900e-003	0.7301	6.6900e-003	0.7368	0.1953	6.2500e-003	0.2016		821.1018	821.1018	0.0332		821.9312
Unmitigated	0.1997	1.0855	2.4536	8.0900e-003	0.7301	6.6900e-003	0.7368	0.1953	6.2500e-003	0.2016		821.1018	821.1018	0.0332		821.9312

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	142.80	148.65	129.30	327,288	327,288
Total	142.80	148.65	129.30	327,288	327,288

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.593730	0.035302	0.167493	0.109091	0.021115	0.005747	0.017044	0.037455	0.003901	0.001761	0.005404	0.001027	0.000929
Single Family Housing	0.593730	0.035302	0.167493	0.109091	0.021115	0.005747	0.017044	0.037455	0.003901	0.001761	0.005404	0.001027	0.000929

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593
NaturalGas Unmitigated	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1194.46	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593
Total		**0.0129**	**0.1101**	**0.0468**	**7.0000e-004**		**8.9000e-003**	**8.9000e-003**		**8.9000e-003**	**8.9000e-003**		**140.5242**	**140.5242**	**2.6900e-003**	**2.5800e-003**	**141.3593**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.19446	0.0129	0.1101	0.0468	7.0000e-004		8.9000e-003	8.9000e-003		8.9000e-003	8.9000e-003		140.5242	140.5242	2.6900e-003	2.5800e-003	141.3593
Total		**0.0129**	**0.1101**	**0.0468**	**7.0000e-004**		**8.9000e-003**	**8.9000e-003**		**8.9000e-003**	**8.9000e-003**		**140.5242**	**140.5242**	**2.6900e-003**	**2.5800e-003**	**141.3593**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1157	0.1414	4.6108	0.0114		0.5579	0.5579		0.5579	0.5579	80.4693	94.8756	175.3449	0.3801	1.7000e-003	185.3535
Unmitigated	1.1157	0.1414	4.6108	0.0114		0.5579	0.5579		0.5579	0.5579	80.4693	94.8756	175.3449	0.3801	1.7000e-003	185.3535

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5929					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3765	0.1271	3.3729	0.0114		0.5511	0.5511		0.5511	0.5511	80.4693	92.6471	173.1164	0.3780	1.7000e-003	183.0714
Landscaping	0.0373	0.0143	1.2379	7.0000e-005		6.8500e-003	6.8500e-003		6.8500e-003	6.8500e-003		2.2285	2.2285	2.1400e-003		2.2821
Total	**1.1157**	**0.1414**	**4.6108**	**0.0114**		**0.5579**	**0.5579**		**0.5579**	**0.5579**	**80.4693**	**94.8756**	**175.3449**	**0.3801**	**1.7000e-003**	**185.3535**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5929					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3765	0.1271	3.3729	0.0114		0.5511	0.5511		0.5511	0.5511	80.4693	92.6471	173.1164	0.3780	1.7000e-003	183.0714
Landscaping	0.0373	0.0143	1.2379	7.0000e-005		6.8500e-003	6.8500e-003		6.8500e-003	6.8500e-003		2.2285	2.2285	2.1400e-003		2.2821
Total	**1.1157**	**0.1414**	**4.6108**	**0.0114**		**0.5579**	**0.5579**		**0.5579**	**0.5579**	**80.4693**	**94.8756**	**175.3449**	**0.3801**	**1.7000e-003**	**185.3535**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Residential Community in Calistoga

Napa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	15.00	Dwelling Unit	3.74	27,000.00	43
Other Asphalt Surfaces	0.98	Acre	0.98	42,688.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	160.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Residential Community in Calistoga - Napa County, Annual

Project Characteristics - Adjusted per the PGE 2020 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 163-25*0.029-298*0.00617=531.4363 to avoid double counting.

Land Use - Land uses

Construction Phase - anticipated construction schedule

Grading -

Woodstoves - BAAQMD prohibits the use of wood burning.

Energy Use - Title 24

Construction Off-road Equipment Mitigation - BAAQMD Rule Compliance

Water Mitigation -

Waste Mitigation -

Residential Community in Calistoga - Napa County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	45.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	8.00	90.00
tblConstructionPhase	NumDays	18.00	30.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	PhaseEndDate	4/21/2023	8/2/2023
tblConstructionPhase	PhaseEndDate	3/2/2023	5/9/2023
tblConstructionPhase	PhaseEndDate	3/28/2022	2/28/2022
tblConstructionPhase	PhaseEndDate	4/14/2022	8/2/2022
tblConstructionPhase	PhaseEndDate	3/28/2023	6/20/2023
tblConstructionPhase	PhaseEndDate	4/4/2022	3/29/2022
tblConstructionPhase	PhaseStartDate	3/29/2023	6/1/2023
tblConstructionPhase	PhaseStartDate	4/15/2022	8/3/2022
tblConstructionPhase	PhaseStartDate	4/5/2022	3/30/2022
tblConstructionPhase	PhaseStartDate	3/3/2023	5/10/2023
tblConstructionPhase	PhaseStartDate	3/29/2022	3/2/2022
tblEnergyUse	LightingElect	1,608.84	1,126.19
tblEnergyUse	T24E	325.76	228.03
tblFireplaces	NumberWood	6.45	0.00
tblGrading	MaterialImported	0.00	25,400.00
tblLandUse	LotAcreage	4.87	3.74
tblProjectCharacteristics	CO2IntensityFactor	641.35	160.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2293	2.4845	1.8987	4.4100e-003	0.5164	0.1033	0.6197	0.2620	0.0960	0.3580	0.0000	394.7689	394.7689	0.0844	0.0000	396.8780
2023	0.2962	0.8586	1.0124	1.8000e-003	0.0143	0.0404	0.0548	3.8800e-003	0.0380	0.0419	0.0000	156.1891	156.1891	0.0341	0.0000	157.0415
Maximum	**0.2962**	**2.4845**	**1.8987**	**4.4100e-003**	**0.5164**	**0.1033**	**0.6197**	**0.2620**	**0.0960**	**0.3580**	**0.0000**	**394.7689**	**394.7689**	**0.0844**	**0.0000**	**396.8780**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2293	2.4845	1.8987	4.4100e-003	0.2423	0.1033	0.3456	0.1179	0.0960	0.2139	0.0000	394.7686	394.7686	0.0844	0.0000	396.8777
2023	0.2962	0.8586	1.0124	1.8000e-003	0.0136	0.0404	0.0540	3.7000e-003	0.0380	0.0417	0.0000	156.1890	156.1890	0.0341	0.0000	157.0414
Maximum	**0.2962**	**2.4845**	**1.8987**	**4.4100e-003**	**0.2423**	**0.1033**	**0.3456**	**0.1179**	**0.0960**	**0.2139**	**0.0000**	**394.7686**	**394.7686**	**0.0844**	**0.0000**	**396.8777**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.79**	**0.00**	**40.76**	**54.26**	**0.00**	**36.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-1-2022**	**5-31-2022**	1.0386	1.0386
2	**6-1-2022**	**8-31-2022**	0.8653	0.8653
3	**9-1-2022**	**11-30-2022**	0.5984	0.5984
4	**12-1-2022**	**2-28-2023**	0.5584	0.5584
5	**3-1-2023**	**5-31-2023**	0.4979	0.4979
6	**6-1-2023**	**8-31-2023**	0.3038	0.3038
		Highest	1.0386	1.0386

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1354	2.2600e-003	0.1468	1.2000e-004		6.3900e-003	6.3900e-003		6.3900e-003	6.3900e-003	0.7687	0.6501	1.4188	3.7800e-003	1.0000e-005	1.5158
Energy	2.3500e-003	0.0201	8.5500e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	31.4636	31.4636	1.9300e-003	7.3000e-004	31.7303
Mobile	0.0353	0.1847	0.4010	1.4200e-003	0.1219	1.1500e-003	0.1231	0.0327	1.0800e-003	0.0338	0.0000	130.6834	130.6834	5.0500e-003	0.0000	130.8097
Waste						0.0000	0.0000		0.0000	0.0000	3.6660	0.0000	3.6660	0.2167	0.0000	9.0824
Water						0.0000	0.0000		0.0000	0.0000	0.3101	0.5418	0.8518	0.0319	7.7000e-004	1.8806
Total	**0.1731**	**0.2070**	**0.5563**	**1.6700e-003**	**0.1219**	**9.1600e-003**	**0.1311**	**0.0327**	**9.0900e-003**	**0.0418**	**4.7448**	**163.3389**	**168.0836**	**0.2594**	**1.5100e-003**	**175.0187**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1354	2.2600e-003	0.1468	1.2000e-004		6.3900e-003	6.3900e-003		6.3900e-003	6.3900e-003	0.7687	0.6501	1.4188	3.7800e-003	1.0000e-005	1.5158
Energy	2.3500e-003	0.0201	8.5500e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	31.4636	31.4636	1.9300e-003	7.3000e-004	31.7303
Mobile	0.0353	0.1847	0.4010	1.4200e-003	0.1219	1.1500e-003	0.1231	0.0327	1.0800e-003	0.0338	0.0000	130.6834	130.6834	5.0500e-003	0.0000	130.8097
Waste						0.0000	0.0000		0.0000	0.0000	1.8330	0.0000	1.8330	0.1083	0.0000	4.5412
Water						0.0000	0.0000		0.0000	0.0000	0.2480	0.4552	0.7033	0.0256	6.2000e-004	1.5266
Total	**0.1731**	**0.2070**	**0.5563**	**1.6700e-003**	**0.1219**	**9.1600e-003**	**0.1311**	**0.0327**	**9.0900e-003**	**0.0418**	**2.8498**	**163.2523**	**166.1021**	**0.1447**	**1.3600e-003**	**170.1235**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**39.94**	**0.05**	**1.18**	**44.23**	**9.93**	**2.80**

3.0 Construction Detail

Construction Phase

Residential Community in Calistoga - Napa County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2022	2/28/2022	5	0	
2	Site Preparation	Site Preparation	3/2/2022	3/29/2022	5	20	
3	Grading	Grading	3/30/2022	8/2/2022	5	90	
4	Building Construction	Building Construction	8/3/2022	5/9/2023	5	200	
5	Paving	Paving	5/10/2023	6/20/2023	5	30	
6	Architectural Coating	Architectural Coating	6/1/2023	8/2/2023	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 45

Acres of Paving: 0.98

Residential Indoor: 54,675; Residential Outdoor: 18,225; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,561 (Architectural Coating – sqft)

OffRoad Equipment

Residential Community in Calistoga - Napa County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,511.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	23.00	9.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3308	0.1970	3.8000e-004		0.0161	0.0161		0.0148	0.0148	0.0000	33.4394	33.4394	0.0108	0.0000	33.7098
Total	**0.0317**	**0.3308**	**0.1970**	**3.8000e-004**	**0.1807**	**0.0161**	**0.1968**	**0.0993**	**0.0148**	**0.1142**	**0.0000**	**33.4394**	**33.4394**	**0.0108**	**0.0000**	**33.7098**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.0000e-004	4.3100e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1427	1.1427	3.0000e-005	0.0000	1.1433
Total	**6.0000e-004**	**4.0000e-004**	**4.3100e-003**	**1.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4300e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1427**	**1.1427**	**3.0000e-005**	**0.0000**	**1.1433**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0772	0.0000	0.0772	0.0425	0.0000	0.0425	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3308	0.1970	3.8000e-004		0.0161	0.0161		0.0148	0.0148	0.0000	33.4394	33.4394	0.0108	0.0000	33.7097
Total	**0.0317**	**0.3308**	**0.1970**	**3.8000e-004**	**0.0772**	**0.0161**	**0.0934**	**0.0425**	**0.0148**	**0.0573**	**0.0000**	**33.4394**	**33.4394**	**0.0108**	**0.0000**	**33.7097**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.0000e-004	4.3100e-003	1.0000e-005	1.3500e-003	1.0000e-005	1.3600e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1427	1.1427	3.0000e-005	0.0000	1.1433
Total	**6.0000e-004**	**4.0000e-004**	**4.3100e-003**	**1.0000e-005**	**1.3500e-003**	**1.0000e-005**	**1.3600e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.1427**	**1.1427**	**3.0000e-005**	**0.0000**	**1.1433**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2949	0.0000	0.2949	0.1515	0.0000	0.1515	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0877	0.9385	0.6873	1.3300e-003		0.0423	0.0423		0.0390	0.0390	0.0000	117.2465	117.2465	0.0379	0.0000	118.1945
Total	**0.0877**	**0.9385**	**0.6873**	**1.3300e-003**	**0.2949**	**0.0423**	**0.3372**	**0.1515**	**0.0390**	**0.1905**	**0.0000**	**117.2465**	**117.2465**	**0.0379**	**0.0000**	**118.1945**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2700e-003	0.3170	0.0679	9.6000e-004	0.0212	9.4000e-004	0.0221	5.8200e-003	9.0000e-004	6.7100e-003	0.0000	93.2392	93.2392	4.7000e-003	0.0000	93.3568
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2400e-003	1.5100e-003	0.0162	5.0000e-005	5.3300e-003	3.0000e-005	5.3700e-003	1.4200e-003	3.0000e-005	1.4500e-003	0.0000	4.2850	4.2850	1.0000e-004	0.0000	4.2875
Total	**0.0115**	**0.3185**	**0.0840**	**1.0100e-003**	**0.0265**	**9.7000e-004**	**0.0275**	**7.2400e-003**	**9.3000e-004**	**8.1600e-003**	**0.0000**	**97.5241**	**97.5241**	**4.8000e-003**	**0.0000**	**97.6443**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1261	0.0000	0.1261	0.0648	0.0000	0.0648	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0877	0.9385	0.6873	1.3300e-003		0.0423	0.0423		0.0390	0.0390	0.0000	117.2463	117.2463	0.0379	0.0000	118.1943
Total	**0.0877**	**0.9385**	**0.6873**	**1.3300e-003**	**0.1261**	**0.0423**	**0.1684**	**0.0648**	**0.0390**	**0.1037**	**0.0000**	**117.2463**	**117.2463**	**0.0379**	**0.0000**	**118.1943**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2700e-003	0.3170	0.0679	9.6000e-004	0.0202	9.4000e-004	0.0212	5.5800e-003	9.0000e-004	6.4800e-003	0.0000	93.2392	93.2392	4.7000e-003	0.0000	93.3568
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2400e-003	1.5100e-003	0.0162	5.0000e-005	5.0600e-003	3.0000e-005	5.0900e-003	1.3500e-003	3.0000e-005	1.3800e-003	0.0000	4.2850	4.2850	1.0000e-004	0.0000	4.2875
Total	**0.0115**	**0.3185**	**0.0840**	**1.0100e-003**	**0.0253**	**9.7000e-004**	**0.0262**	**6.9300e-003**	**9.3000e-004**	**7.8600e-003**	**0.0000**	**97.5241**	**97.5241**	**4.8000e-003**	**0.0000**	**97.6443**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0921	0.8432	0.8836	1.4500e-003		0.0437	0.0437		0.0411	0.0411	0.0000	125.1316	125.1316	0.0300	0.0000	125.8811
Total	**0.0921**	**0.8432**	**0.8836**	**1.4500e-003**		**0.0437**	**0.0437**		**0.0411**	**0.0411**	**0.0000**	**125.1316**	**125.1316**	**0.0300**	**0.0000**	**125.8811**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5300e-003	0.0503	0.0127	1.3000e-004	3.1800e-003	1.0000e-004	3.2900e-003	9.2000e-004	1.0000e-004	1.0200e-003	0.0000	12.4003	12.4003	6.3000e-004	0.0000	12.4160
Worker	4.1300e-003	2.7800e-003	0.0298	9.0000e-005	9.8100e-003	6.0000e-005	9.8800e-003	2.6100e-003	6.0000e-005	2.6700e-003	0.0000	7.8843	7.8843	1.9000e-004	0.0000	7.8891
Total	**5.6600e-003**	**0.0530**	**0.0425**	**2.2000e-004**	**0.0130**	**1.6000e-004**	**0.0132**	**3.5300e-003**	**1.6000e-004**	**3.6900e-003**	**0.0000**	**20.2846**	**20.2846**	**8.2000e-004**	**0.0000**	**20.3051**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0921	0.8432	0.8836	1.4500e-003		0.0437	0.0437		0.0411	0.0411	0.0000	125.1315	125.1315	0.0300	0.0000	125.8809
Total	**0.0921**	**0.8432**	**0.8836**	**1.4500e-003**		**0.0437**	**0.0437**		**0.0411**	**0.0411**	**0.0000**	**125.1315**	**125.1315**	**0.0300**	**0.0000**	**125.8809**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5300e-003	0.0503	0.0127	1.3000e-004	3.0500e-003	1.0000e-004	3.1500e-003	8.9000e-004	1.0000e-004	9.9000e-004	0.0000	12.4003	12.4003	6.3000e-004	0.0000	12.4160
Worker	4.1300e-003	2.7800e-003	0.0298	9.0000e-005	9.3100e-003	6.0000e-005	9.3700e-003	2.4900e-003	6.0000e-005	2.5500e-003	0.0000	7.8843	7.8843	1.9000e-004	0.0000	7.8891
Total	**5.6600e-003**	**0.0530**	**0.0425**	**2.2000e-004**	**0.0124**	**1.6000e-004**	**0.0125**	**3.3800e-003**	**1.6000e-004**	**3.5400e-003**	**0.0000**	**20.2846**	**20.2846**	**8.2000e-004**	**0.0000**	**20.3051**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0724	0.6617	0.7472	1.2400e-003		0.0322	0.0322		0.0303	0.0303	0.0000	106.6302	106.6302	0.0254	0.0000	107.2643
Total	**0.0724**	**0.6617**	**0.7472**	**1.2400e-003**		**0.0322**	**0.0322**		**0.0303**	**0.0303**	**0.0000**	**106.6302**	**106.6302**	**0.0254**	**0.0000**	**107.2643**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.8000e-004	0.0327	9.4000e-003	1.1000e-004	2.7100e-003	4.0000e-005	2.7500e-003	7.8000e-004	4.0000e-005	8.2000e-004	0.0000	10.2705	10.2705	4.7000e-004	0.0000	10.2822
Worker	3.2700e-003	2.1200e-003	0.0231	7.0000e-005	8.3600e-003	5.0000e-005	8.4100e-003	2.2200e-003	5.0000e-005	2.2700e-003	0.0000	6.4579	6.4579	1.4000e-004	0.0000	6.4615
Total	**4.2500e-003**	**0.0349**	**0.0325**	**1.8000e-004**	**0.0111**	**9.0000e-005**	**0.0112**	**3.0000e-003**	**9.0000e-005**	**3.0900e-003**	**0.0000**	**16.7284**	**16.7284**	**6.1000e-004**	**0.0000**	**16.7437**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0724	0.6617	0.7472	1.2400e-003		0.0322	0.0322		0.0303	0.0303	0.0000	106.6301	106.6301	0.0254	0.0000	107.2642
Total	**0.0724**	**0.6617**	**0.7472**	**1.2400e-003**		**0.0322**	**0.0322**		**0.0303**	**0.0303**	**0.0000**	**106.6301**	**106.6301**	**0.0254**	**0.0000**	**107.2642**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.8000e-004	0.0327	9.4000e-003	1.1000e-004	2.6000e-003	4.0000e-005	2.6400e-003	7.6000e-004	4.0000e-005	7.9000e-004	0.0000	10.2705	10.2705	4.7000e-004	0.0000	10.2822
Worker	3.2700e-003	2.1200e-003	0.0231	7.0000e-005	7.9300e-003	5.0000e-005	7.9800e-003	2.1200e-003	5.0000e-005	2.1700e-003	0.0000	6.4579	6.4579	1.4000e-004	0.0000	6.4615
Total	**4.2500e-003**	**0.0349**	**0.0325**	**1.8000e-004**	**0.0105**	**9.0000e-005**	**0.0106**	**2.8800e-003**	**9.0000e-005**	**2.9600e-003**	**0.0000**	**16.7284**	**16.7284**	**6.1000e-004**	**0.0000**	**16.7437**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0138	0.1319	0.1829	2.8000e-004		6.5300e-003	6.5300e-003		6.0400e-003	6.0400e-003	0.0000	24.5679	24.5679	7.7200e-003	0.0000	24.7609
Paving	1.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0151**	**0.1319**	**0.1829**	**2.8000e-004**		**6.5300e-003**	**6.5300e-003**		**6.0400e-003**	**6.0400e-003**	**0.0000**	**24.5679**	**24.5679**	**7.7200e-003**	**0.0000**	**24.7609**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	6.0000e-004	6.5600e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.8312	1.8312	4.0000e-005	0.0000	1.8322
Total	**9.3000e-004**	**6.0000e-004**	**6.5600e-003**	**2.0000e-005**	**2.3700e-003**	**2.0000e-005**	**2.3900e-003**	**6.3000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**1.8312**	**1.8312**	**4.0000e-005**	**0.0000**	**1.8322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0138	0.1319	0.1829	2.8000e-004		6.5300e-003	6.5300e-003		6.0400e-003	6.0400e-003	0.0000	24.5679	24.5679	7.7200e-003	0.0000	24.7608
Paving	1.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0151**	**0.1319**	**0.1829**	**2.8000e-004**		**6.5300e-003**	**6.5300e-003**		**6.0400e-003**	**6.0400e-003**	**0.0000**	**24.5679**	**24.5679**	**7.7200e-003**	**0.0000**	**24.7608**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	6.0000e-004	6.5600e-003	2.0000e-005	2.2500e-003	2.0000e-005	2.2600e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	1.8312	1.8312	4.0000e-005	0.0000	1.8322
Total	**9.3000e-004**	**6.0000e-004**	**6.5600e-003**	**2.0000e-005**	**2.2500e-003**	**2.0000e-005**	**2.2600e-003**	**6.0000e-004**	**1.0000e-005**	**6.1000e-004**	**0.0000**	**1.8312**	**1.8312**	**4.0000e-005**	**0.0000**	**1.8322**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3100e-003	0.0293	0.0408	7.0000e-005		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	5.7448	5.7448	3.4000e-004	0.0000	5.7534
Total	**0.2033**	**0.0293**	**0.0408**	**7.0000e-005**		**1.5900e-003**	**1.5900e-003**		**1.5900e-003**	**1.5900e-003**	**0.0000**	**5.7448**	**5.7448**	**3.4000e-004**	**0.0000**	**5.7534**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.3000e-004	2.4600e-003	1.0000e-005	8.9000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.6867	0.6867	2.0000e-005	0.0000	0.6871
Total	**3.5000e-004**	**2.3000e-004**	**2.4600e-003**	**1.0000e-005**	**8.9000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6867**	**0.6867**	**2.0000e-005**	**0.0000**	**0.6871**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3100e-003	0.0293	0.0408	7.0000e-005		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	5.7448	5.7448	3.4000e-004	0.0000	5.7534
Total	**0.2033**	**0.0293**	**0.0408**	**7.0000e-005**		**1.5900e-003**	**1.5900e-003**		**1.5900e-003**	**1.5900e-003**	**0.0000**	**5.7448**	**5.7448**	**3.4000e-004**	**0.0000**	**5.7534**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.3000e-004	2.4600e-003	1.0000e-005	8.4000e-004	1.0000e-005	8.5000e-004	2.3000e-004	1.0000e-005	2.3000e-004	0.0000	0.6867	0.6867	2.0000e-005	0.0000	0.6871
Total	**3.5000e-004**	**2.3000e-004**	**2.4600e-003**	**1.0000e-005**	**8.4000e-004**	**1.0000e-005**	**8.5000e-004**	**2.3000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.6867**	**0.6867**	**2.0000e-005**	**0.0000**	**0.6871**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0353	0.1847	0.4010	1.4200e-003	0.1219	1.1500e-003	0.1231	0.0327	1.0800e-003	0.0338	0.0000	130.6834	130.6834	5.0500e-003	0.0000	130.8097
Unmitigated	0.0353	0.1847	0.4010	1.4200e-003	0.1219	1.1500e-003	0.1231	0.0327	1.0800e-003	0.0338	0.0000	130.6834	130.6834	5.0500e-003	0.0000	130.8097

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	142.80	148.65	129.30	327,288	327,288
Total	142.80	148.65	129.30	327,288	327,288

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.593730	0.035302	0.167493	0.109091	0.021115	0.005747	0.017044	0.037455	0.003901	0.001761	0.005404	0.001027	0.000929
Single Family Housing	0.593730	0.035302	0.167493	0.109091	0.021115	0.005747	0.017044	0.037455	0.003901	0.001761	0.005404	0.001027	0.000929

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	8.1982	8.1982	1.4800e-003	3.1000e-004	8.3267
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	8.1982	8.1982	1.4800e-003	3.1000e-004	8.3267
NaturalGas Mitigated	2.3500e-003	0.0201	8.5500e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.2654	23.2654	4.5000e-004	4.3000e-004	23.4036
NaturalGas Unmitigated	2.3500e-003	0.0201	8.5500e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.2654	23.2654	4.5000e-004	4.3000e-004	23.4036

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	435976	2.3500e-003	0.0201	8.5500e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.2654	23.2654	4.5000e-004	4.3000e-004	23.4036
Total		**2.3500e-003**	**0.0201**	**8.5500e-003**	**1.3000e-004**		**1.6200e-003**	**1.6200e-003**		**1.6200e-003**	**1.6200e-003**	**0.0000**	**23.2654**	**23.2654**	**4.5000e-004**	**4.3000e-004**	**23.4036**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	435976	2.3500e-003	0.0201	8.5500e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.2654	23.2654	4.5000e-004	4.3000e-004	23.4036
Total		**2.3500e-003**	**0.0201**	**8.5500e-003**	**1.3000e-004**		**1.6200e-003**	**1.6200e-003**		**1.6200e-003**	**1.6200e-003**	**0.0000**	**23.2654**	**23.2654**	**4.5000e-004**	**4.3000e-004**	**23.4036**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	112653	8.1982	1.4800e-003	3.1000e-004	8.3267
Total		**8.1982**	**1.4800e-003**	**3.1000e-004**	**8.3267**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	112653	8.1982	1.4800e-003	3.1000e-004	8.3267
Total		**8.1982**	**1.4800e-003**	**3.1000e-004**	**8.3267**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1354	2.2600e-003	0.1468	1.2000e-004		6.3900e-003	6.3900e-003		6.3900e-003	6.3900e-003	0.7687	0.6501	1.4188	3.7800e-003	1.0000e-005	1.5158
Unmitigated	0.1354	2.2600e-003	0.1468	1.2000e-004		6.3900e-003	6.3900e-003		6.3900e-003	6.3900e-003	0.7687	0.6501	1.4188	3.7800e-003	1.0000e-005	1.5158

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1082					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.9200e-003	9.8000e-004	0.0354	1.2000e-004		5.7700e-003	5.7700e-003		5.7700e-003	5.7700e-003	0.7687	0.4682	1.2368	3.6000e-003	1.0000e-005	1.3295
Landscaping	3.3600e-003	1.2800e-003	0.1114	1.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	0.1820	0.1820	1.7000e-004	0.0000	0.1863
Total	**0.1354**	**2.2600e-003**	**0.1468**	**1.3000e-004**		**6.3900e-003**	**6.3900e-003**		**6.3900e-003**	**6.3900e-003**	**0.7687**	**0.6501**	**1.4188**	**3.7700e-003**	**1.0000e-005**	**1.5158**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1082					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.9200e-003	9.8000e-004	0.0354	1.2000e-004		5.7700e-003	5.7700e-003		5.7700e-003	5.7700e-003	0.7687	0.4682	1.2368	3.6000e-003	1.0000e-005	1.3295
Landscaping	3.3600e-003	1.2800e-003	0.1114	1.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	0.1820	0.1820	1.7000e-004	0.0000	0.1863
Total	**0.1354**	**2.2600e-003**	**0.1468**	**1.3000e-004**		**6.3900e-003**	**6.3900e-003**		**6.3900e-003**	**6.3900e-003**	**0.7687**	**0.6501**	**1.4188**	**3.7700e-003**	**1.0000e-005**	**1.5158**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.7033	0.0256	6.2000e-004	1.5266
Unmitigated	0.8518	0.0319	7.7000e-004	1.8806

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.97731 / 0.61613	0.8518	0.0319	7.7000e-004	1.8806
Total		**0.8518**	**0.0319**	**7.7000e-004**	**1.8806**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.781848 / 0.578547	0.7033	0.0256	6.2000e-004	1.5266
Total		**0.7033**	**0.0256**	**6.2000e-004**	**1.5266**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.8330	0.1083	0.0000	4.5412
Unmitigated	3.6660	0.2167	0.0000	9.0824

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	18.06	3.6660	0.2167	0.0000	9.0824
Total		**3.6660**	**0.2167**	**0.0000**	**9.0824**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	9.03	1.8330	0.1083	0.0000	4.5412
Total		**1.8330**	**0.1083**	**0.0000**	**4.5412**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation