Adelanto Commercial

GREENHOUSE GAS ANALYSIS

CITY OF ADELANTO

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com
(949) 336-5987

Ali Dadabhoy
adadabhoy@urbanxroads.com

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LIST OF ABBREVIATED TERMS

(1)	Reference
AB	Assembly Bill
CARB	California Air Resources Board
CAA	Federal Clean Air Act
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resource Board
CEC	California Energy Commission
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CPUC	California Public Utilities Commission
EPA	Environmental Protection Agency
GCC	Global Climate Change
GHGA	Greenhouse Gas Analysis
GWP	Global Warming Potential
HFC	Hydrofluorocarbons
MDAQMD	Mojave Desert Air Quality Management District
MMT CO_2e	Million Metric Ton of Carbon Dioxide Equivalent
MT CO_2e	Metric Ton of Carbon Dioxide Equivalent
NO_2	Nitrogen Dioxide
NHTSA	National Highway Traffic Safety Administration
NIOSH	National Institute for Occupational Safety and Health
NO_x	Oxides of Nitrogen
PFC	Perfluorocarbons
PM_{10}	Particulate Matter 10 microns in diameter or less
$PM_{2.5}$	Particulate Matter 2.5 microns in diameter or less
PPM	Parts Per Million
SB	Senate Bill
WRI	The World Resources Institute

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EXECUTIVE SUMMARY

ES.1 SUMMARY OF FINDINGS

The results of this *Adelanto Commercial Greenhouse Gas Analysis* is summarized below based on the significance criteria in Section 3 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1). Table ES-1 shows the findings of significance for potential greenhouse gas impacts under CEQA.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
GHG Impact #1: The Project would not generate direct or indirect greenhouse gas emission that would result in a significant impact on the environment.	3.7	*Less Than Significant*	*n/a*
GHG Impact #2: The Project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	3.7	*Less Than Significant*	*n/a*

ES.2 REGULATORY REQUIREMENTS

The Project would be required to comply with all mandates imposed by the State of California and the Mojave Desert Air Quality Management District (MDAQMD). Those that are applicable to the Project and that would assist in the reduction of greenhouse gas (GHG) emissions are:

- Global Warming Solutions Act of 2006 (AB 32) (2).
- Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies (SB 375) (3).
- Pavley Fuel Efficiency Standards (AB 1493). Establishes fuel efficiency ratings for new vehicles (4).
- Title 24 California Code of Regulations (California Building Code). Establishes energy efficiency requirements for new construction (5).
- Title 20 California Code of Regulations (Appliance Energy Efficiency Standards). Establishes energy efficiency requirements for appliances (6).
- Title 17 California Code of Regulations (Low Carbon Fuel Standard). Requires carbon content of fuel sold in California to be 10% less by 2020 (7).
- California Water Conservation in Landscaping Act of 2006 (AB 1881). Requires local agencies to adopt the Department of Water Resources updated Water Efficient Landscape Ordinance or equivalent by January 1, 2010 to ensure efficient landscapes in new development and reduced water waste in existing landscapes (8).

- Statewide Retail Provider Emissions Performance Standards (SB 1368). Requires energy generators to achieve performance standards for GHG emissions (9).
- Renewable Portfolio Standards (SB 1078). Requires electric corporations to increase the amount of energy obtained from eligible renewable energy resources to 20 percent (%) by 2010 and 33% by 2020 (10).
- Senate Bill 32 (SB 32). Requires the state to reduce statewide GHG emissions to 40% below 1990 levels by 2030, a reduction target that was first introduced in Executive Order B-30-15 (11).

1 INTRODUCTION

This report presents the results of the greenhouse gas analysis (GHGA) prepared by Urban Crossroads, Inc., for the Adelanto Commercial Project (Project).

The purpose of this GHGA is to evaluate Project-related construction and operational emissions and determine the level of greenhouse gas (GHG) impacts as a result of constructing and operating the proposed Project.

1.1 SITE LOCATION

The proposed Adelanto Commercial Project is generally located at the southeast corner of Highway 395 and Auburn Avenue in the City of Adelanto as shown on Exhibit 1-A.

1.2 PROJECT DESCRIPTION

The proposed Project is to consist of a 5,866-sf convenience store with a 20-pump fueling station, a 956-sf small office building, a 2,400-sf fast-food restaurant with drive thru, a 36,822-sf shopping plaza with supermarket, a 5,577-sf automated car wash, and a 68,054-sf hotel with 100 rooms located on 11.87 acres, as shown in Exhibit 1-B. The Project is anticipated to have an Opening Year of 2025.

EXHIBIT 1-A: LOCATION MAP

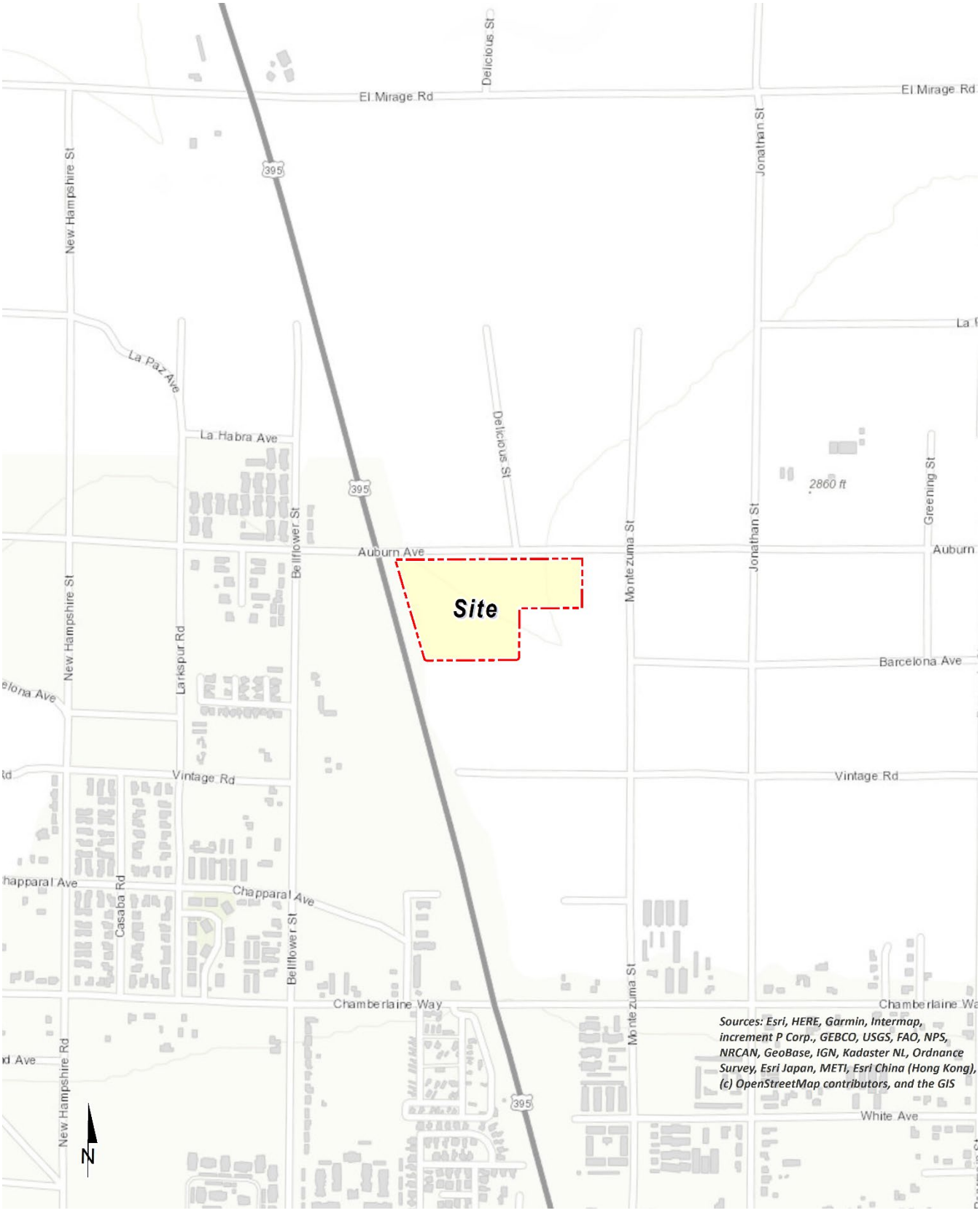
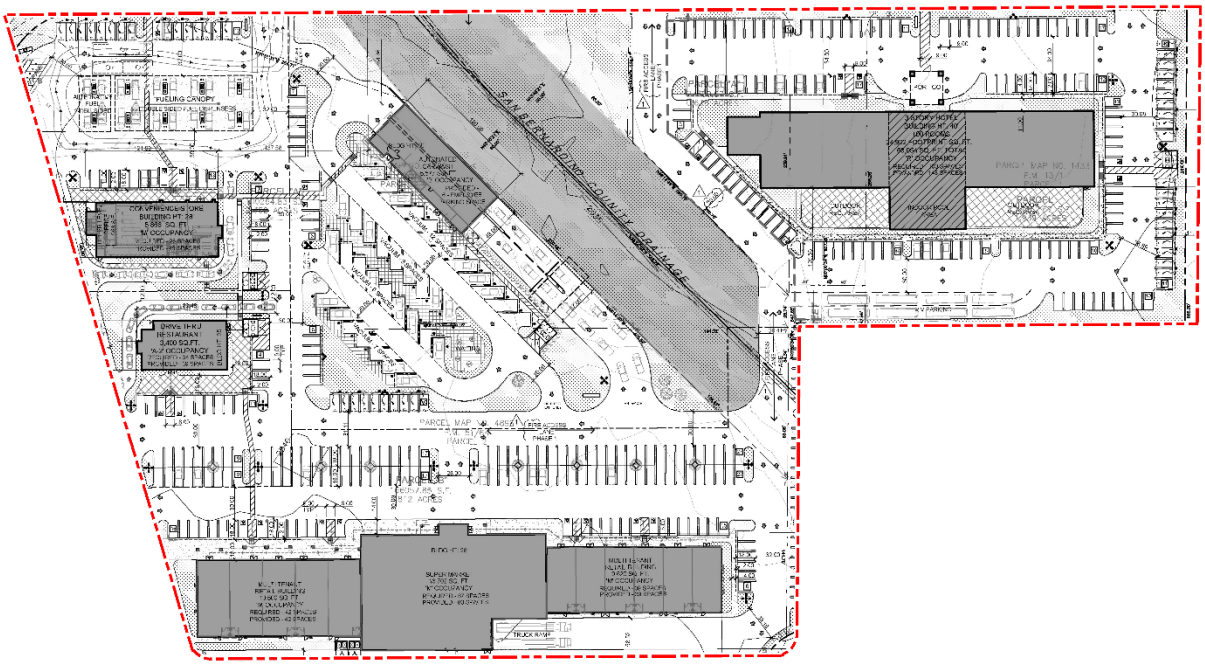


EXHIBIT 1-B: SITE PLAN



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2 CLIMATE CHANGE SETTING

2.1 INTRODUCTION TO GLOBAL CLIMATE CHANGE (GCC)

GCC is defined as the change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms. The majority of scientists believe that the climate shift taking place since the Industrial Revolution is occurring at a quicker rate and magnitude than in the past. Scientific evidence suggests that GCC is the result of increased concentrations of GHGs in the earth's atmosphere, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases. The majority of scientists believe that this increased rate of climate change is the result of GHGs resulting from human activity and industrialization over the past 200 years.

An individual project like the proposed Project evaluated in this GHGA cannot generate enough GHG emissions to affect a discernible change in global climate. However, the proposed Project may participate in the potential for GCC by its incremental contribution of GHGs combined with the cumulative increase of all other sources of GHGs, which when taken together constitute potential influences on GCC. Because these changes may have serious environmental consequences, Section 3.0 will evaluate the potential for the proposed Project to have a significant effect upon the environment as a result of its potential contribution to the greenhouse effect.

2.2 GLOBAL CLIMATE CHANGE DEFINED

GCC refers to the change in average meteorological conditions on the earth with respect to temperature, wind patterns, precipitation and storms. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, CO_2, N_2O, CH_4, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These particular gases are important due to their residence time (duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the earth's atmosphere, but prevent radiative heat from escaping, thus warming the earth's atmosphere. GCC can occur naturally as it has in the past with the previous ice ages.

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

2.3 GHGS

2.3.1 GHGS AND HEALTH EFFECTS

GHGs trap heat in the atmosphere, creating a GHG effect that results in global warming and climate change. Many gases demonstrate these properties and as discussed in Table 2-1. For the purposes of this analysis, emissions of CO_2, CH_4, and N_2O were evaluated because these gases are the primary contributors to GCC from development projects. Although there are other

substances such as fluorinated gases that also contribute to GCC, these fluorinated gases were not evaluated as their sources are not well-defined and do not contain accepted emissions factors or methodology to accurately calculate these gases.

TABLE 2-1: GREENHOUSE GASES

Greenhouse Gases	Description	Sources	Health Effects
Water	Water is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. Climate feedback is an indirect, or secondary, change, either positive or negative, that occurs within the climate system in response to a forcing mechanism. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to 'hold' more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is	The main source of water vapor is evaporation from the oceans (approximately 85%). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves.	There are no known direct health effects related to water vapor at this time. It should be noted however that when some pollutants react with water vapor, the reaction forms a transport mechanism for some of these pollutants to enter the human body through water vapor.

Greenhouse Gases	Description	Sources	Health Effects
	unknown as there are also dynamics that hold the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the earth's surface and heat it up) (12).		
CO_2	CO_2 is an odorless and colorless GHG. Since the industrial revolution began in the mid-1700s, the sort of human activity that increases GHG emissions has increased dramatically in scale and distribution. Data from the past 50 years suggests a corollary increase in levels and concentrations. As an example, prior to the industrial revolution, CO_2 concentrations were fairly stable at 280 parts per million (ppm). Today, they are around 370 ppm, an increase of more than 30%. Left unchecked, the concentration of CO_2 in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources (13).	CO_2 is emitted from natural and manmade sources. Natural sources include: the decomposition of dead organic matter; respiration of bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include: the burning of coal, oil, natural gas, and wood. CO_2 is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks (14).	Outdoor levels of CO_2 are not high enough to result in negative health effects. According to the National Institute for Occupational Safety and Health (NIOSH) high concentrations of CO_2 can result in health effects such as: headaches, dizziness, restlessness, difficulty breathing, sweating, increased heart rate, increased cardiac output, increased blood pressure, coma, asphyxia, and/or convulsions. It should be noted that current concentrations of CO_2 in the earth's atmosphere are estimated to be approximately 370 ppm, the actual reference exposure level (level at which adverse health effects typically occur) is at exposure levels of 5,000 ppm averaged over 10 hours in a 40-hour workweek and short-term reference exposure levels of 30,000 ppm averaged over a 15 minute period (15).

Greenhouse Gases	Description	Sources	Health Effects
CH_4	CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than CO_2 and its lifetime in the atmosphere is brief (10-12 years), compared to other GHGs.	CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH_4. Other anthropocentric sources include fossil-fuel combustion and biomass burning (16).	CH_4 is extremely reactive with oxidizers, halogens, and other halogen-containing compounds. Exposure to high levels of CH_4 can cause asphyxiation, loss of consciousness, headache and dizziness, nausea and vomiting, weakness, loss of coordination, and an increased breathing rate.
N_2O	N_2O, also known as laughing gas, is a colorless GHG. Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb).	N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant, i.e., in whipped cream bottles. It is also	N_2O can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses, it is considered harmless. However, in some cases, heavy and extended use can cause Olney's Lesions (brain damage) (17).

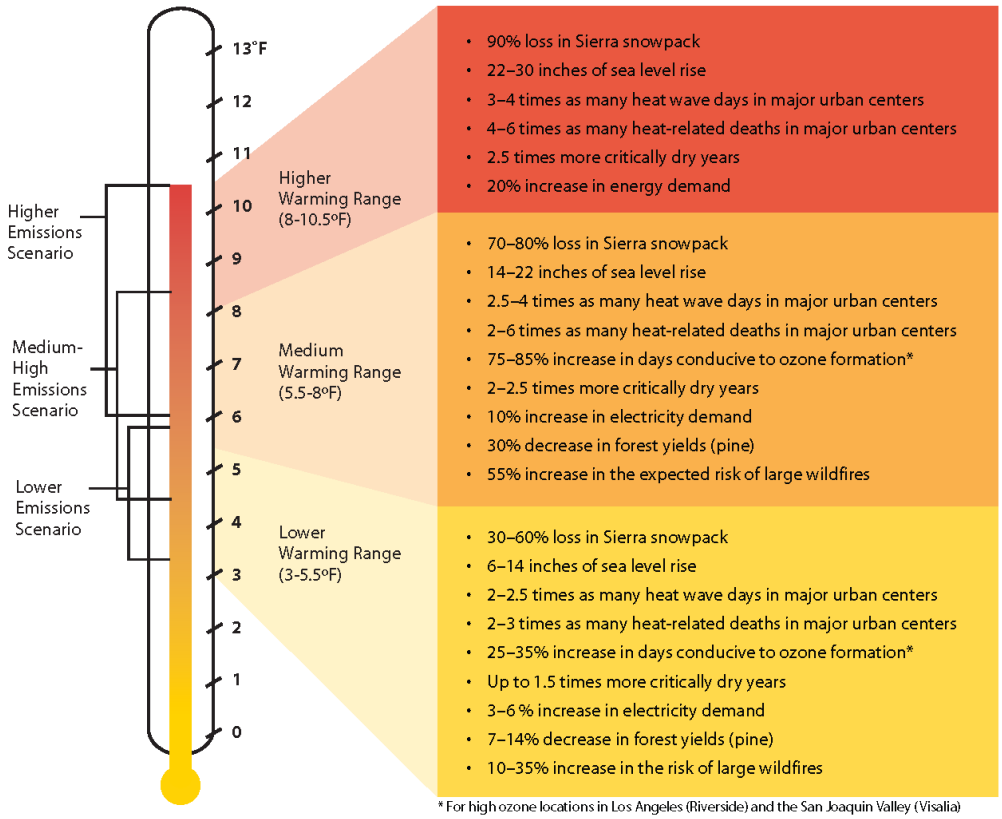
Greenhouse Gases	Description	Sources	Health Effects
		used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. N_2O can be transported into the stratosphere, be deposited on the earth's surface, and be converted to other compounds by chemical reaction (17).	
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface).	CFCs have no natural source but were first synthesized in 1928. They were used for refrigerants, aerosol propellants and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years (18).	In confined indoor locations, working with CFC-113 or other CFCs is thought to result in death by cardiac arrhythmia (heart frequency too high or too low) or asphyxiation.

Greenhouse Gases	Description	Sources	Health Effects
HFCs	HFCs are synthetic, man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential (GWP). The HFCs with the largest measured atmospheric abundances are (in order), fluoroform (CHF_3), 1,1,1,2-tetrafluoroethane (CH_2FCF), and 1,1-difluoroethane (CH_3CF_2). Prior to 1990, the only significant emissions were of CHF_3. CH_2FCF emissions are increasing due to its use as a refrigerant.	HFCs are manmade for applications such as automobile air conditioners and refrigerants.	No health effects are known to result from exposure to HFCs.
PFCs	PFCs have stable molecular structures and do not break down through chemical processes in the lower atmosphere. High-energy ultraviolet rays, which occur about 60 kilometers above earth's surface, are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). The EPA estimates that concentrations of CF_4 in the atmosphere are over 70 parts per trillion (ppt).	The two main sources of PFCs are primary aluminum production and semiconductor manufacture.	No health effects are known to result from exposure to PFCs.
SF_6	SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest GWP of any gas evaluated (23,900) (19). The EPA indicates that concentrations in the 1990s were about 4 ppt.	SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.	In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing.

Greenhouse Gases	Description	Sources	Health Effects
Nitrogen Trifluoride (NF_3)	NF_3 is a colorless gas with a distinctly moldy odor. The World Resources Institute (WRI) indicates that NF_3 has a 100-year GWP of 17,200 (20).	NF_3 is used in industrial processes and is produced in the manufacturing of semiconductors, Liquid Crystal Display panels, types of solar panels, and chemical lasers.	Long-term or repeated exposure may affect the liver and kidneys and may cause fluorosis (21).

The potential health effects related directly to the emissions of CO_2, CH_4, and N_2O as they relate to development projects such as the proposed Project are still being debated in the scientific community. Their cumulative effects to GCC have the potential to cause adverse effects to human health. Increases in Earth's ambient temperatures would result in more intense heat waves, causing more heat-related deaths. Scientists also purport that higher ambient temperatures would increase disease survival rates and result in more widespread disease. Climate change will likely cause shifts in weather patterns, potentially resulting in devastating droughts and food shortages in some areas (22). Exhibit 2-A presents the potential impacts of global warming (23).

EXHIBIT 2-A: SUMMARY OF PROJECTED GLOBAL WARMING IMPACT, 2070-2099 (AS COMPARED WITH 1961-1990)



Source: Barbara H. Allen-Diaz. "Climate change affects us all." *University of California, Agriculture and Natural Resources*, 2009.

2.4 GLOBAL WARMING POTENTIAL

GHGs have varying GWP values. GWP of a GHG indicates the amount of warming a gas causes over a given period of time and represents the potential of a gas to trap heat in the atmosphere. CO_2 is utilized as the reference gas for GWP, and thus has a GWP of 1. CO_2 equivalent (CO_2e) is a term used for describing the difference GHGs in a common unit. CO_2e signifies the amount of CO_2 which would have the equivalent GWP.

The atmospheric lifetime and GWP of selected GHGs are summarized at Table 2-2. As shown in the table below, GWP for the 6th Assessment Report, the Intergovernmental Panel on Climate Change (IPCC)'s scientific and socio-economic assessment on climate change, range from 1 for CO_2 to 25,200 for SF_6 (24).

TABLE 2-2: GWP AND ATMOSPHERIC LIFETIME OF SELECT GHGS

Gas	Atmospheric Lifetime (years)	GWP (100-year time horizon)
		6th Assessment Report
CO_2	Multiple	1
CH_4	12 .4	28
N_2O	121	273
HFC-23	222	14,600
HFC-134a	13.4	1,526
HFC-152a	1.5	164
SF_6	3,200	25,200

Source: IPCC Second Assessment Report, 1995 and IPCC Sixth Assessment Report, 2022

2.5 GHG EMISSIONS INVENTORIES

2.5.1 GLOBAL

Worldwide anthropogenic GHG emissions are tracked by the IPCC for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I). Human GHG emissions data for Annex I nations are available through 2020. Based on the latest available data, the sum of these emissions totaled approximately 28,026,643 gigagram (Gg) CO_2e[1] (25) (26) as summarized on Table 2-3.

[1] The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2020 data, the United Nations' Framework Convention on Climate Change (UNFCCC) data for the most recent year were used U.N. Framework Convention on Climate Change, "Annex I Parties – GHG total without LULUCF," The most recent GHG emissions for China and India are from 2014 and 2016, respectively.

2.5.2 UNITED STATES

As noted in Table 2-3, the United States, as a single country, was the number two producer of GHG emissions in 2020.

TABLE 2-3: TOP GHG PRODUCING COUNTRIES AND THE EUROPEAN UNION [2]

Emitting Countries	GHG Emissions (Gg CO_2e)
China	12,300,200
United States	5,981,354
European Union (27-member countries)	3,706,110
India	2,839,420
Russian Federation	2,051,437
Japan	1,148,122
Total	**28,026,643**

2.5.3 STATE OF CALIFORNIA

California has significantly slowed the rate of growth of GHG emissions due to the implementation of energy efficiency programs as well as adoption of strict emission controls but is still a substantial contributor to the United States (U.S.) emissions inventory total (27). The California Air Resource Board (CARB) compiles GHG inventories for the State of California. Based upon the 2022 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2020 GHG emissions period, California emitted an average 369.2 million metric tons of CO_2e per year ($MMTCO_2e/yr$) or 369,200 Gg CO_2e (6.17% of the total United States GHG emissions) (28).

2.6 EFFECTS OF CLIMATE CHANGE IN CALIFORNIA

2.6.1 PUBLIC HEALTH

Higher temperatures may increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation could increase from 25 to 35% under the lower warming range to 75 to 85% under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances, depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced.

[2] Used http://unfccc.int data for Annex I countries. Consulted the CAIT Climate Data Explorer in https://www.climatewatchdata.org site to reference Non-Annex I countries of China and India.

In addition, under the higher warming range scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures could increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

2.6.2 WATER RESOURCES

A vast network of man-made reservoirs and aqueducts captures and transports water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on the Sierra Nevada snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages.

If temperatures continue to increase, more precipitation could fall as rain instead of snow, and the snow that does fall could melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90%. Under the lower warming range scenario, snowpack losses could be only half as large as those possible if temperatures were to rise to the higher warming range. How much snowpack could be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snowpack could pose challenges to water managers and hamper hydropower generation. Winter tourism could be adversely affected, under the lower warming range, the ski season at lower elevations could be reduced by as much as a month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing and snowboarding.

The State's water supplies are also at risk from rising sea levels. An influx of saltwater could degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta – a major fresh water supply.

2.6.3 AGRICULTURE

Increased temperatures could cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. First, California farmers could possibly lose as much as 25% of the water supply needed. Although higher CO_2 levels can stimulate plant production and increase plant water-use efficiency, California's farmers could face greater water demand for crops and a less reliable water supply as temperatures rise. Crop growth and development could change, as could the intensity and frequency of pest and disease outbreaks. Rising temperatures could aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops,

so rising temperatures could worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts.

In addition, continued GCC could shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion could occur in many species while range contractions may be less likely in rapidly evolving species with significant populations already established. Should range contractions occur, new or different weed species could fill the emerging gaps. Continued GCC could alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

2.6.4 FORESTS AND LANDSCAPES

GCC has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55%, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. In contrast, wildfires in northern California could increase by up to 90% due to decreased precipitation.

Moreover, continued GCC has the potential to alter natural ecosystems and biological diversity within the state. For example, alpine and subalpine ecosystems could decline by as much as 60 to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests has the potential to decrease as a result of GCC.

2.6.5 RISING SEA LEVELS

Rising sea levels, more intense coastal storms, and warmer water temperatures could increasingly threaten the state's coastal regions. Under the higher warming range scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate low-lying coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. Under the lower warming range scenario, sea level could rise 12-14 inches.

2.7 REGULATORY SETTING

2.7.2 FEDERAL

Prior to the last decade, there have been no concrete federal regulations of GHGs or major planning for climate change adaptation. The following are actions regarding the federal government, GHGs, and fuel efficiency.

GHG ENDANGERMENT

In *Massachusetts v. Environmental Protection Agency* 549 U.S. 497 (2007), decided on April 2, 2007, the United States Supreme Court (U.S. Court) found that four GHGs, including CO_2, are air

pollutants subject to regulation under Section 202(a)(1) of the Clean Air Act (CAA). The Court held that the EPA Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the CAA:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs— CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section "Clean Vehicles" below. After a lengthy legal challenge, the U.S. Court declined to review an Appeals Court ruling that upheld the EPA Administrator's findings (29).

CLEAN VEHICLES

Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the U.S. On April 1, 2010, the EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the U.S.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty (MD) passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon (mpg) if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards would cut CO_2 emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and the NHTSA issued final rules on a second-phase joint rulemaking establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012. The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and MD passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of CO_2 in model year 2025, which is equivalent to 54.5 mpg if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20% reduction in CO_2 emissions and fuel consumption by the 2018 model year. For HDT and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10% reduction for gasoline vehicles and a 15% reduction for diesel vehicles by the 2018 model year (12 and 17% respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10% reduction in fuel consumption and CO_2 emissions from the 2014 to 2018 model years.

On April 2, 2018, the EPA signed the Mid-term Evaluation Final Determination, which declared that the MY 2022-2025 GHG standards are not appropriate and should be revised (30). This Final Determination serves to initiate a notice to further consider appropriate standards for MY 2022-2025 light-duty vehicles. On August 2, 2018, the NHTSA in conjunction with the EPA, released a notice of proposed rulemaking, the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks* (SAFE Vehicles Rule). The SAFE Vehicles Rule was proposed to amend existing Corporate Average Fuel Economy (CAFE) and tailpipe CO_2 standards for passenger cars and light trucks and to establish new standards covering model years 2021 through 2026. As of March 31, 2020, the NHTSA and EPA finalized the SAFE Vehicle Rule which increased stringency of CAFE and CO_2 emissions standards by 1.5% each year through model year 2026 (31). On December 21, 2021, after reviewing all the public comments submitted on NHTSA's April 2021 Notice of Proposed Rulemaking, NHTSA finalizes the CAFE Preemption rulemaking to withdraw its portions of the so-called SAFE I Rule. The final rule concludes that the SAFE I Rule overstepped the agency's legal authority and established overly broad prohibitions that did not account for a variety of important state and local interests. The final rule ensures that the SAFE I Rule will no longer form an improper barrier to states exploring creative solutions to address their local communities' environmental and public health challenges (32).

On March 31, 2022, NHTSA finalized CAFE standards for MY 2024-2026. The standards for passenger cars and light trucks for MYs 2024-2025 were increased at a rate of 8% per year and then increased at a rate of 10% per year for MY 2026 vehicles. NHTSA currently projects that the revised standards would require an industry fleet-wide average of roughly 49 mpg in MY 2026 and would reduce average fuel outlays over the lifetimes of affected vehicles that provide consumers hundreds of dollars in net savings. These standards are directly responsive to the agency's statutory mandate to improve energy conservation and reduce the nation's energy dependence on foreign sources (33).

MANDATORY REPORTING OF GHGS

The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of GHGs Rule, which became effective January 1, 2010.

The rule requires reporting of GHG emissions from large sources and suppliers in the U.S. and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons per year (MT/yr) or more of GHG emissions are required to submit annual reports to the EPA.

NEW SOURCE REVIEW

The EPA issued a final rule on May 13, 2010, that establishes thresholds for GHGs that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these CAA permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the Federal Code of Regulations, the EPA states:

> *"This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the CAA, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to GHG sources, starting with the largest GHG emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for GHG emissions until at least April 30, 2016."*

The EPA estimates that facilities responsible for nearly 70% of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

2.7.3 STATE

2.7.3.1 EXECUTIVE ORDERS RELATED TO GHG EMISSIONS

California's Executive Branch has issued several Executive Orders (EO) to state agencies to reduce GHGs. EO are not legally enforceable on local governments or the private sector. Although not regulatory and not directly applicable to development projects, they set the tone for the state and guide the actions of state agencies.

EXECUTIVE ORDER S-3-05

Executive Order (EO) S-3-05 sets the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.

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

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

EXECUTIVE ORDER S-01-07 (LCFS)

EO S-01-07 mandates a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020. CARB adopted the Low Carbon Fuel Standard (LCFS) to achieve the 10% reduction in GHG emissions from the transportation fuels sector by 2020.

In 2018, the CARB approved amendments to LCFS that included strengthening the carbon intensity benchmarks through 2030 in compliance with GHG emissions reduction target for 2030. The amendments included crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector (34).

EXECUTIVE ORDER S-13-08

EO S-13-08 requires the creation of the California Climate Adaptation Strategy (CCAS), the first of which was adopted. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

EXECUTIVE ORDER B-30-15

EO B-30-15 establishes a California GHG reduction target of 40% below 1990 levels by 2030. The new interim statewide GHG emission reduction target is set at a level to ensure California meets its 2050 target of reducing GHG emissions 80% below 1990 levels. EO B-30-15 directs CARB to update the State Climate Change Scoping Plan to include a 2030 target in terms of millions of MT CO_2e. EO B-30-15 also requires the CCAS to be updated every three years, and for the State to continue its climate change research program, among other provisions.

EXECUTIVE ORDER B-55-18

Executive Order B-55-18 establishes a Statewide policy to achieve carbon neutrality by 2045 and maintain net negative emissions thereafter. As per Executive Order B-55-18, CARB is directed to work with relevant State agencies to develop a framework for implementation and accounting that tracks progress toward this goal and to ensure future Climate Change Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

EXECUTIVE ORDER N-79-20

EO N-79-20 sets new statewide goals for phasing out gasoline-powered cars and trucks in California. Under EO N-79-20, 100% of in-state sales of new passenger cars and trucks are to be zero-emission by 2035; 100% of in-state sales of medium- and heavy-duty trucks and busses are

to be zero-emission by 2045, where feasible; and 100% of off-road vehicles and equipment sales are to be zero-emission by 2035, where feasible. EO-79-20 directs CARB and other state agencies to develop regulations or take other steps within existing authority to achieve these goals.

2.7.3.1 LEGISLATIVE ACTIONS TO REDUCE GHGS

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation such as Global Warming Solutions Act of 2006 (AB32) was specifically enacted to address GHG emissions and the 2020 target identified in EO S-3-05. This section describes the major provisions of the legislation.

GLOBAL WARMING SOLUTIONS ACT OF 2006 (AB 32)

In 2006, the State Legislature enacted AB 32, the California Global Solutions Act of 2006 (HSC §38500-38599), which requires that GHGs emitted in California be reduced to 1990 levels by the year 2020 (this goal has been met since 2016[3]). GHGs as defined under AB 32 include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. CARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

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

GLOBAL WARMING SOLUTIONS ACT OF 2006: EMISSIONS LIMIT (SB 32)

In September 2016, the State Legislature enacted SB 32, the California Global Warming Solutions Act of 2006: Emissions Limit ((HSC §38566)). SB 32 requires the state to reduce statewide GHG emissions to 40% below 1990 levels by 2030, a reduction target that was first introduced in Executive Order B-30-15. The new legislation builds upon AB 32 and provides an intermediate goal to achieving S-3-05, which sets a statewide GHG reduction target of 80% below 1990 levels by 2050 (35).

THE SUSTAINABLE COMMUNITIES AND CLIMATE PROTECTION ACT OF 2008 (SB 375)

According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40% of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the

[3] Based upon the 2021 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2019 GHG emissions period, California emitted less than the 2020 emissions target of 431 million MT CO_2e in 2016 and each year after that.

following: it (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Concerning CEQA, SB 375, as codified in Public Resources Code Section 21159.28, states that CEQA findings for certain projects are not required to reference, describe, or discuss (1) growth inducing impacts, or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network, if the project:

1. Is in an area with an approved sustainable communities strategy or an alternative planning strategy that the CARB accepts as achieving the GHG emission reduction targets.
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies).
3. Incorporates the mitigation measures required by an applicable prior environmental document.

VEHICULAR EMISSIONS: GREENHOUSE GASES (AB 1493)

California's AB 1493, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. The standards initially phased in during the 2009 through 2016 model years. The near-term (2009–2012) standards resulted in about a 22% reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards resulted in about a 30% improvement in fuel efficiency. The second phase of the implementation for AB 1493 was incorporated into Amendments to the Low-Emission Vehicle Program (LEV III) or the Advanced Clean Cars (ACC) program. The ACC program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation is intended reduce GHGs from new cars by 34% from 2016 levels by 2025. The new rules are intended to clean up gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric vehicles (EV), newly emerging plug-in hybrid EVs, and hydrogen fuel cell vehicles. The package will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.

MEDIUM- AND HEAVY-DUTY VEHICLES: COMPREHENSIVE STRATEGY (SB 44)

SB 44 requires CARB, no later than January 1, 2021, and at least every 5 years thereafter, to update CARB's 2016 Mobile Source Strategy to include a comprehensive strategy for the deployment of medium-duty and heavy-duty vehicles in the state for the purpose of bringing the state into compliance with federal ambient air quality standards and reducing motor vehicle greenhouse gas emissions from the medium-duty and heavy-duty vehicle sector. SB 44 further requires CARB to recommend reasonable and achievable goals, for reducing emissions from medium-duty and heavy-duty vehicles by 2030 and 2050, respectively.

CALIFORNIA RENEWABLES PORTFOLIO STANDARD PROGRAM: EMISSIONS OF GREENHOUSE GASES

The State Renewable Portfolio Standard (RPS) was initially established by SB 1078. SB 1078 required electricity providers to increase procurement of electricity from renewable energy sources by at least one percent per year with the goal of reaching 20 percent renewables by 2017. SB 107 accelerated the 20 percent RPS requirement from 2017 to 2010. Subsequently, SB 2 (1X) increased the RPS requirements to 33 percent renewables by 2020 with compliance period targets of 20 percent by 2013 and 25 percent by 2016. SB 350 further increases the RPS requirement to 50 percent by 2030, with interim targets of 40 percent by 2024 and 45 percent by 2027. In addition, the bill requires that 65 percent of RPS procurement must be derived from long-term contracts (10 years or more) starting in 2021. The most recent change is from SB 100, which increases RPS requirements to 60 percent by 2030, with new interim targets of 44 percent by 2024 and 52 percent by 2027 as well. The bill further requires that all of the state's electricity come from carbon-free resources (not only RPS-eligible ones) by 2045.

MODEL WATER EFFICIENT LANDSCAPING ORDINANCE

The Model Water Efficient Landscaping Ordinance (MWELO) was enacted by AB 1881, the Water Conservation Act. AB 1881 required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. EO B-29-15 directs DWR to update the MELOW through expedited regulation. The California Water Commission approved the revised MELOW became effective December 15, 2015, which requires new development projects that include landscape areas of 500 sf to implement:

- More efficient irrigation systems;
- Incentives for graywater usage;
- Improvements in on-site stormwater capture;
- Limiting the portion of landscapes that can be planted with high water use plants; and
- Includes reporting requirements for local agencies.

SB 97 AND THE CEQA GUIDELINES UPDATE

Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states "(a) On or before July 1, 2009, the OPR shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the OPR pursuant to subdivision (a)." Section 21097 was also added to the Public Resources Code. It provided CEQA protection until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006, in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA.

On December 28, 2018, the Natural Resources Agency announced the OAL approved the amendments to the CEQA Guidelines for implementing the CEQA. The CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.3 was added the CEQA Guidelines and states that in determining the significance of a project's GHG emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes. Additionally, a lead agency may use a model or methodology to estimate GHG emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use (36).

2.7.3.2 CARB

CALIFORNIA CLIMATE CHANGE SCOPING PLAN

AB 32 required the California Air Resources Board (CARB or Board) to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the Board in 2008 and must be updated at least every five years. Since 2008, there have been two updates to the Scoping Plan. Each of the Scoping Plans have included a suite of policies to help the State achieve its GHG targets, in large part leveraging existing programs whose primary goal is to reduce harmful air pollution.

The First Update to the (2013) Scoping Plan was approved CARB in 2014, and built upon the initial (2008) Scoping Plan with new strategies and recommendations. The First Update identified opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update sets the groundwork to reach long-term goals set forth in Executive Order S-3-05. The First Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use.

In November 2017, CARB released the *Final 2017 Scoping Plan Update*, which identifies the State's post-2020 reduction strategy. The *Final 2017 Scoping Plan Update* reflects the 2030 target of a 40% reduction below 1990 levels, set by Executive Order B-30-15 and codified by SB 32. Key

programs that the proposed Second Update builds upon include the Cap-and-Trade Regulation, the LCFS, and much cleaner cars, trucks and freight movement, utilizing cleaner, renewable energy, and strategies to reduce CH_4 emissions from agricultural and other wastes.

The *Final 2017 Scoping Plan Update* establishes a new emissions limit of 260 MMT CO_2e for the year 2030, which corresponds to a 40% decrease in 1990 levels by 2030 (37).

California's climate strategy will require contributions from all sectors of the economy, including the land base, and will include enhanced focus on zero- and near-zero-emission (ZE/NZE) vehicle technologies; continued investment in renewables, including solar roofs, wind, and other distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (CH_4, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for direct GHG reductions at refineries will further support air quality co-benefits in neighborhoods, including in disadvantaged communities historically located adjacent to these large stationary sources, as well as efforts with California's local air pollution control and air quality management districts (air districts) to tighten emission limits on a broad spectrum of industrial sources. Major elements of the *Final 2017 Scoping Plan Update* framework include:

Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZEV buses and trucks.

- LCFS, with an increased stringency (18% by 2030).
- Implementing SB 350, which expands the RPS to 50% RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of zero-emission vehicles (ZEV) trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing CH_4 and hydroflurocarbon emissions by 40% and anthropogenic black carbon emissions by 50% by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- 20% reduction in GHG emissions from refineries by 2030.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Note, however, that the *Final 2017 Scoping Plan Update* acknowledges that:

> *"[a]chieving net zero increases in GHG emissions, resulting in no contribution to GHG impacts, may not be feasible or appropriate for every project, however, and the inability of a project to mitigate its GHG emissions to net zero does not imply*

the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA."

In addition to the statewide strategies listed above, the *Final 2017 Scoping Plan Update* also identifies local governments as essential partners in achieving the State's long-term GHG reduction goals and identifies local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends that local governments achieve a community-wide goal to achieve emissions of no more than 6 metric tons of CO_2e ($MTCO_2e$) or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. For CEQA projects, CARB states that lead agencies may develop evidenced-based bright-line numeric thresholds—consistent with the Scoping Plan and the State's long-term GHG goals—and projects with emissions over that amount may be required to incorporate on-site design features and mitigation measures that avoid or minimize project emissions to the degree feasible; or, a performance-based metric using a CAP or other plan to reduce GHG emissions is appropriate.

According to research conducted by the Lawrence Berkeley National Laboratory (LBNL) and supported by CARB, California, under its existing and proposed GHG reduction policies, could achieve the 2030 goals under SB 32. The research utilized a new, validated model known as the California LBNL GHG Analysis of Policies Spreadsheet (CALGAPS), which simulates GHG and criteria pollutant emissions in California from 2010 to 2050 in accordance to existing and future GHG-reducing policies. The CALGAPS model showed that by 2030, emissions could range from 211 to 428 $MTCO_2e$ per year ($MTCO_2e$/yr), indicating that "even if all modeled policies are not implemented, reductions could be sufficient to reduce emissions 40% below the 1990 level [of SB 32]." CALGAPS analyzed emissions through 2050 even though it did not generally account for policies that might be put in place after 2030. Although the research indicated that the emissions would not meet the State's 80% reduction goal by 2050, various combinations of policies could allow California's cumulative emissions to remain very low through 2050 (38) (39).

CAP-AND-TRADE PROGRAM

The *2022 Scoping Plan* identifies a Cap-and-Trade Program as one of the key strategies for California to reduce GHG emissions. According to CARB, a cap-and-trade program will help put California on the path to meet its goal of achieving a 40% reduction in GHG emissions from 1990 levels by 2030. Under cap-and-trade, an overall limit on GHG emissions from capped sectors is established, and facilities subject to the cap will be able to trade permits to emit GHGs within the overall limit.

CARB adopted a California Cap-and-Trade Program pursuant to its authority under AB 32. The Cap-and-Trade Program is designed to reduce GHG emissions from regulated entities by more than 16% between 2013 and 2020, and by an additional 40% by 2030. The statewide cap for GHG emissions from the capped sectors (e.g., electricity generation, petroleum refining, and cement production) commenced in 2013 and will decline over time, achieving GHG emission reductions throughout the program's duration.

Covered entities that emit more than 25.000 $MTCO_2e$/yr must comply with the Cap-and-Trade Program. Triggering of the 25.000 $MTCO_2e$/yr "inclusion threshold" is measured against a subset of emissions reported and verified under the California Regulation for the Mandatory Reporting of GHG Emissions (Mandatory Reporting Rule or "MRR").

Under the Cap-and-Trade Program, CARB issues allowances equal to the total amount of allowable emissions over a given compliance period and distributes these to regulated entities. Covered entities are allocated free allowances in whole or part (if eligible), and may buy allowances at auction, purchase allowances from others, or purchase offset credits. Each covered entity with a compliance obligation is required to surrender "compliance instruments" for each $MTCO_2e$ of GHG they emit. There also are requirements to surrender compliance instruments covering 30% of the prior year's compliance obligation by November of each year (40).

The Cap-and-Trade Program provides a firm cap, which provides the highest certainty of achieving the 2030 target. An inherent feature of the Cap-and-Trade program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are only guaranteed on an accumulative basis. As summarized by CARB in the *First Update to the Climate Change Scoping Plan*:

> *"The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative."* (41)

The Cap-and-Trade Program covered approximately 80% of California's GHG emissions (37). The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period. The Cap-and-Trade Program covers the GHG emissions associated with the combustion of transportation fuels in California, whether refined in-state or imported.

2022 CARB SCOPING PLAN

On December 15, 2022, CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) (42). The 2022 Scoping Plan builds on the 2017 Scoping Plan as well as the requirements set forth by AB 1279, which directs the state to become carbon neutral no later

than 2045. To achieve this statutory objective, the 2022 Scoping Plan lays out how California can reduce GHG emissions by 85% below 1990 levels and achieve carbon neutrality by 2045. The Scoping Plan scenario to do this is to "deploy a broad portfolio of existing and emerging fossil fuel alternatives and clean technologies, and align with statutes, Executive Orders, Board direction, and direction from the governor." The 2022 Scoping Plan sets one of the most aggressive approaches to reach carbon neutrality in the world. Unlike the 2017 Scoping Plan, CARB no longer includes a numeric per capita threshold and instead advocates for compliance with a local GHG reduction strategy (CAP) consistent with CEQA Guidelines section 15183.5.

The key elements of the 2022 CARB Scoping Plan focus on transportation - the regulations that will impact this sector are adopted and enforced by CARB on vehicle manufacturers and outside the jurisdiction and control of local governments. As stated in the Plan's executive summary:

> "The major element of this unprecedented transformation is the aggressive reduction of fossil fuels wherever they are currently used in California, building on and accelerating carbon reduction programs that have been in place for a decade and a half. That means rapidly moving to zero-emission transportation; electrifying the cars, buses, trains, and trucks that now constitute California's single largest source of planet-warming pollution."
>
> "[A]pproval of this plan catalyzes a number of efforts, including the development of new regulations as well as amendments to strengthen regulations and programs already in place, not just at CARB but across state agencies."

Under the 2022 Scoping Plan, the State will lead efforts to meet the 2045 carbon neutrality goal through implementation of the following objectives:

- Reimagine roadway projects that increase VMT in a way that meets community needs and reduces the need to drive.
- Double local transit capacity and service frequencies by 2030.
- Complete the High-Speed Rail (HSR) System and other elements of the intercity rail network by 2040.
- Expand and complete planned networks of high-quality active transportation infrastructure.
- Increase availability and affordability of bikes, e-bikes, scooters, and other alternatives to light-duty vehicles, prioritizing needs of underserved communities.
- Shift revenue generation for transportation projects away from the gas tax into more durable sources by 2030.
- Authorize and implement roadway pricing strategies and reallocate revenues to equitably improve transit, bicycling, and other sustainable transportation choices.
- Prioritize addressing key transit bottlenecks and other infrastructure investments to improve transit operational efficiency over investments that increase VMT.
- Develop and implement a statewide transportation demand management (TDM) framework with VMT mitigation requirements for large employers and large developments.
- Prevent uncontrolled growth of autonomous vehicle (AV) VMT, particularly zero-passenger miles.

- Channel new mobility services towards pooled use models, transit complementarity, and lower VMT outcomes.
- Establish an integrated statewide system for trip planning, booking, payment, and user accounts that enables efficient and equitable multimodal systems.
- Provide financial support for low-income and disadvantaged Californians' use of transit and new mobility services.
- Expand universal design features for new mobility services.
- Accelerate infill development in existing transportation-efficient places and deploy strategic resources to create more transportation-efficient locations.
- Encourage alignment in land use, housing, transportation, and conservation planning in adopted regional plans (RTP/SCS and RHNA) and local plans (e.g., general plans, zoning, and local transportation plans).
- Accelerate production of affordable housing in forms and locations that reduce VMT and affirmatively further fair housing policy objectives.
- Reduce or eliminate parking requirements (and/or enact parking maximums, as appropriate) and promote redevelopment of excess parking, especially in infill locations.
- Preserve and protect existing affordable housing stock and protect existing residents and businesses from displacement and climate risk.

Included in the 2022 Scoping Plan is a set of Local Actions (Appendix D to the 2022 Scoping Plan) aimed at providing local jurisdictions with tools to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. Appendix D to the 2022 Scoping Plan includes a section on evaluating plan-level and project-level alignment with the State's Climate Goals in CEQA GHG analyses. In this section, CARB identifies several recommendations and strategies that should be considered for new development in order to determine consistency with the 2022 Scoping Plan. Notably, this section is focused on Residential and Mixed-Use Projects, in fact CARB states in Appendix D (page 4): "…focuses primarily on climate action plans (CAPs) and local authority over new residential development. It does not address other land use types (e.g., industrial) or air permitting."

Additionally on Page 21 in Appendix D, CARB states: "The recommendations outlined in this section apply only to residential and mixed-use development project types. California currently faces both a housing crisis and a climate crisis, which necessitates prioritizing recommendations for residential projects to address the housing crisis in a manner that simultaneously supports the State's GHG and regional air quality goals. CARB plans to continue to explore new approaches for other land use types in the future." As such, it would be inappropriate to apply the requirements contained in Appendix D of the 2022 Scoping Plan to any land use types other than residential or mixed-use residential development.

2.7.3.3 CALIFORNIA REGULATIONS AND BUILDING CODES

Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions.

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 CCR

CCR, Title 20: Division 2, Chapter 4, Article 4, Sections 1601-1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. 23 categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the state and those designed and sold exclusively for use in recreational vehicles or other mobile equipment (CEC 2012).

TITLE 24 CCR

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

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

CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2022 California Green Building Code Standards that will be effective on January 1, 2023. The CEC anticipates that the 2022 energy code will provide $1.5 billion in consumer benefits and reduce GHG emissions by 10 million metric tons (43). The Project would be required to comply with the applicable standards in place at the time building permit document submittals are made. These require, among other items (44):

NONRESIDENTIAL MANDATORY MEASURES

- Short-term bicycle parking. If the new project or an additional alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- Long-term bicycle parking. For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5% of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility (5.106.4.1.2).

- Designated parking for clean air vehicles. In new projects or additions to alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- EV charging stations. New construction shall facilitate the future installation of EV supply equipment. The compliance requires empty raceways for future conduit and documentation that the electrical system has adequate capacity for the future load. The number of spaces to be provided for is contained in Table 5.106. 5.3.3 (5.106.5.3). Additionally, Table 5.106.5.4.1 specifies requirements for the installation of raceway conduit and panel power requirements for medium- and heavy-duty electric vehicle supply equipment for warehouses, grocery stores, and retail stores.
- Outdoor light pollution reduction. Outdoor lighting systems shall be designed to meet the backlight, uplight and glare ratings per Table 5.106.8 (5.106.8).
- Construction waste management. Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1. 5.405.1.2, or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent (5.408.1).
- Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reuse or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed (5.408.3).
- Recycling by Occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive (5.410.1).
- Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:
    - Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush (5.303.3.1)
    - Urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush (5.303.3.2.1). The effective flush volume of floor- mounted or other urinals shall not exceed 0.5 gallons per flush (5.303.3.2.2).
    - Showerheads. Single showerheads shall have a minimum flow rate of not more than 1.8 gallons per minute and 80 psi (5.303.3.3.1). When a shower is served by more than one showerhead, the combine flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi (5.303.3.3.2).

- Faucets and fountains. Nonresidential lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi (5.303.3.4.1). Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute of 60 psi (5.303.3.4.2). Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute (5.303.3.4.3). Metering faucets shall not deliver more than 0.20 gallons per cycle (5.303.3.4.4). Metering faucets for wash fountains shall have a maximum flow rate not more than 0.20 gallons per cycle (5.303.3.4.5).

- Outdoor potable water uses in landscaped areas. Nonresidential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent (5.304.1).
- Water meters. Separate submeters or metering devices shall be installed for new buildings or additions in excess of 50,000 sf or for excess consumption where any tenant within a new building or within an addition that is project to consume more than 1,000 gallons per day (GPD) (5.303.1.1 and 5.303.1.2).
- Outdoor water uses in rehabilitated landscape projects equal or greater than 2,500 sf. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 sf requiring a building or landscape permit (5.304.3).
- Commissioning. For new buildings 10,000 sf and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements (5.410.2.

2.7.4 REGIONAL/SAN BERNARDINO COUNTY

MDAQMD CEQA Guidelines

According to the MDAQMD's *CEQA and Federal Conformity Guidelines*, a project is significant if it triggers or exceeds the most appropriate evaluation criteria. The MDAQMD states that in general, for GHG emissions, the significance emission threshold of 100,000 Tons CO_2e (90,718.5 MT CO_2e) per year is sufficient (45). A significant project must incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation.

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3 PROJECT GREENHOUSE GAS IMPACT

3.1 INTRODUCTION

The Project has been evaluated to determine if it will result in a significant greenhouse gas impact. The significance of these potential impacts is described in the following section.

3.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related GHG impacts are taken from the Initial Study Checklist in Appendix G of the State *CEQA Guidelines* (14 CCR §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to GHG if it would (36):

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

3.2.1 DISCUSSION ON ESTABLISHMENT OF SIGNIFICANCE THRESHOLDS

The City of Adelanto has not adopted its own numeric threshold of significance for determining impacts with respect to greenhouse (GHG) emissions, thus the MDAQMD threshold of 90,718.5 MTCO2e per year will be utilized. If Project-related GHG emissions do not exceed the 90,718.5 MTCO2e per year threshold, then Project-related GHG emissions would clearly have a less-than-significant impact pursuant to Threshold GHG-1. On the other hand, if Project-related GHG emissions exceed 90,718.5 MTCO2e per year, the Project would be considered a substantial source of GHG emissions.

3.3 MODELS EMPLOYED TO ANALYZE GREENHOUSE GASES EMISSIONS

Land uses such as the Project affect GHGs through construction-source and operational-source emissions.

3.3.1 CALIFORNIA EMISSIONS ESTIMATOR MODEL™

In May 2022 California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of CalEEMod version 2022.1. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from MMs (46). Accordingly, the latest version of CalEEMod has been used for this Project to determine GHG emissions. Output from the model runs for construction and operational activity are provided in Appendix 3.1. CalEEMod includes GHG emissions from the following source categories: construction, area, energy, mobile, waste, water, and refrigerants.

3.4 CONSTRUCTION EMISSIONS

Project construction activities would generate CO_2 and CH_4 emissions. The report *Adelanto Commercial Air Quality Impact Analysis Report* (Urban Crossroads, Inc.) (AQIA) contains detailed information regarding Project construction activities (47). As discussed in the AQIA, Construction related emissions are expected from the following construction activities:

- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating

3.4.1 CONSTRUCTION DURATION

Construction is expected to commence in September 2024 and will last through December 2024. Construction duration by phase is shown on Table 3-1. The construction schedule utilized in the analysis represents a "worst-case" analysis scenario should construction occur any time after the respective dates since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.[4] The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per CEQA guidelines.

TABLE 3-1: CONSTRUCTION DURATION

Construction Activity	Start Date	End Date	Days
Site Preparation	9/2/2024	9/13/2024	10
Grading	9/16/2024	10/25/2024	30
Building Construction	10/28/2024	12/30/2024	46
Paving	12/3/2024	12/30/2024	20
Architectural Coating	12/3/2024	12/30/2024	20

Source: Construction schedule based on CalEEMod default parameters.

3.4.2 CONSTRUCTION EQUIPMENT

Site specific construction fleet may vary due to specific project needs at the time of construction. The duration of construction activity was based on CalEEMod model defaults adjusted to account for a 2025 opening year. The associated construction equipment was generally based on CalEEMod defaults with modifications to assign 8-hour working days and account for ground

[4] As shown in the California Emissions Estimator Model (CalEEMod) User's Guide Version, Section 4.3"OFFROAD Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

disturbance during site preparation and grading. Please refer to specific detailed modeling inputs/outputs contained in Appendix 3.1 of this analysis. A detailed summary of construction equipment assumptions by phase is provided at Table 3-2.

TABLE 3-2: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Activity	Equipment[1]	Amount	Hours Per Day
Site Preparation	Rubber Tired Dozers	3	8
	Crawler Tractors	4	8
Grading	Excavators	2	8
	Graders	1	8
	Rubber Tired Dozers	1	8
	Scrapers	2	8
	Crawler Tractors	2	8
Building Construction	Cranes	1	8
	Forklifts	3	8
	Generator Sets	1	8
	Tractors/Loaders/Backhoes	3	8
	Welders	1	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressors	1	8

Source: Construction equipment based on CalEEMod default parameters.

3.4.3 CONSTRUCTION EMISSIONS SUMMARY

For construction phase Project emissions, GHGs are quantified and amortized over the life of the Project. MDAQMD follows the SCAQMD recommendation in calculating the total GHG emissions for construction activities by amortizing the emissions over the life of the Project by dividing it by a 30- year project life then adding that number to the annual operational phase GHG emissions (45). As such, construction emissions were amortized over a 30-year period and added to the annual operational phase GHG emissions. The amortized construction emissions are presented in Table 3-3.

TABLE 3-3: AMORTIZED ANNUAL CONSTRUCTION EMISSIONS

Year	Emissions (MT/yr)				
	CO_2	CH_4	N_2O	R	Total CO_2e
2024	221.59	0.01	0.00	0.06	223.19
Total Annual Construction Emissions	221.59	0.01	0.00	0.06	223.19
Amortized Construction Emissions ($MTCO_2e$)	**7.39**	**0.00**	**0.00**	**0.00**	**7.44**

Source: CalEEMod, Appendix 3.1

3.5 OPERATIONAL EMISSIONS

Operational activities associated with the proposed Project will result in emissions of CO_2, CH_4, N_2O and R from the following primary sources:

- Area Source Emissions
- Energy Source Emissions
- Mobile Source Emissions
- Water Supply, Treatment, and Distribution
- Solid Waste
- Refrigerants

3.5.1 AREA SOURCE EMISSIONS

LANDSCAPE MAINTENANCE EQUIPMENT

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shedders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the Project. The emissions associated with landscape maintenance equipment were calculated based on assumptions provided in the CalEEMod model.

3.5.2 ENERGY SOURCE EMISSIONS

COMBUSTION EMISSIONS ASSOCIATED WITH NATURAL GAS AND ELECTRICITY

GHGs are emitted from buildings as a result of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; these emissions are considered direct emissions associated with a building. GHGs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions. Unless otherwise noted, CalEEMod™ default parameters were used.

3.5.3 MOBILE SOURCE EMISSIONS

Project-related operational air quality impacts derive primarily from the 12,094 vehicle trips generated by the Project. Trip characteristics available from the report, Adelanto Commercial *Traffic Impact Analysis* (David Evans and Associates, Inc.) 2023 were utilized in this analysis (48).

3.6.4 WATER SUPPLY, TREATMENT AND DISTRIBUTION

Indirect GHG emissions result from the production of electricity used to convey, treat and distribute water and wastewater. The amount of electricity required to convey, treat and distribute water depends on the volume of water as well as the sources of the water. Default CalEEMod water use assumptions are applied for the Project, with the exception of the proposed car was use. Estimated water use for the proposed car wash is summarized below.

The Project includes the construction and operation of a 5,577-sf automated car wash. Water usage for the car wash has been estimated based on the *Water Use, Evaporation and Carryout Conveyor Car Washes* (International Carwash Association, 2018). This study assumes that the average conveyor car wash utilizes 30 gallons of freshwater per vehicle (49). It should be noted that the Traffic Analysis did not account for daily trips coming to the proposed automated car wash, as such it was conservatively assumed that 1,699.50 (25%) of the 6,798 trips from the Convenience store with gas station land use would use the car wash. This GHGA assumes that the car wash will service approximately 850 vehicles per day[5]. This assumption likely overstates the Project car wash water use because not all vehicles generated by the car wash would necessarily be washed (e.g., employee trips, vendor trips, etc.). On this basis, water usage for the proposed automated car wash is estimated at 9,829,452.5 gallons per year. The water usage estimates for the car wash were added to the default water usage estimates in CalEEMod.

3.5.4 SOLID WASTE

Retail commercial land uses would result in the generation and disposal of solid waste. A large percentage of this waste would be diverted from landfills by a variety of means, such as reducing the amount of waste generated, recycling, and/or composting. The remainder of the waste not diverted would be disposed of at a landfill. GHG emissions from landfills are associated with the anaerobic breakdown of material. GHG emissions associated with the disposal of solid waste associated with the Project were calculated using CalEEMod default parameters.

3.5.5 REFRIGERANTS

Air conditioning (A/C) and refrigeration equipment associated with the building are anticipated to generate GHG emissions. CalEEMod automatically generates a default A/C and refrigeration equipment inventory for each project land use subtype based on industry data from the USEPA (2016b). CalEEMod quantifies refrigerant emissions from leaks during regular operation and routine servicing over the equipment lifetime and then derives average annual emissions from

[5] The proposed Project's carwash use is conservatively expected to generate 896 total trips. For analytical purposes, this GHGA assumes that 448 cars (448 two-way trips is 896 cars) are vehicles that will be serviced by the car wash.

the lifetime estimate. Note that CalEEMod does not quantify emissions from the disposal of refrigeration and A/C equipment at the end of its lifetime. Per 17 CCR 95371, new facilities with refrigeration equipment containing more than 50 pounds of refrigerant are prohibited from utilizing refrigerants with a GWP of 150 or greater as of January 1, 2022. As such, it was conservatively assumed that refrigeration systems installed at commercial portions of the Project would utilize refrigerants with a GWP of 150. Otherwise, GHG emissions associated with refrigerants were calculated by CalEEMod using default parameters.

3.6 EMISSIONS SUMMARY

The annual GHG emissions associated with the Project are summarized in Table 3-4. As shown in Table 3-4, construction and operation of the Project would generate a total of 12,331.10 $MTCO_2e$/yr.

TABLE 3-4: PROJECT GHG EMISSIONS SUMMARY

Emission Source	Emissions (MT/yr)				
	CO_2	**CH_4**	**N_2O**	**R**	**Total CO_2e**
Annual construction-related emissions amortized over 30 years	7.19	2.83E-04	1.22E-04	1.70E-03	7.23
Mobile Source	11,268.52	0.56	0.59	19.19	11,478.31
Area Source	1.76	0.00	0.00	0.00	1.77
Energy Source	621.94	0.06	0.01	0.00	624.99
Water	22.77	0.60	0.01	0.00	42.21
Waste	30.46	3.04	0.00	0.00	106.58
Refrigerants	0.00	0.00	0.00	70.00	70.00
Total CO_2e (All Sources)	**12,331.10**				

Source: CalEEMod, Appendix 3.1
-- = Emission factor only provided in MT CO_2e

3.7 FINDINGS AND CONCLUSIONS

GHG Impact #1: Potential to generate direct or indirect GHG emissions that would result in a significant impact on the environment.

The City of Adelanto has not adopted its own numeric threshold of significance for determining impacts with respect to GHG emissions. The MDAQMD states that in general, for GHG emissions, the significance emission threshold of 100,000 Tons CO_2e (90,718.5 MT CO_2e) per year is sufficient to determine if additional analysis is required (45).

As shown in Table 3-4, the Project will result in approximately 12,331.10 $MTCO_2e$/yr; the proposed project would not exceed the screening threshold of 90,718.5 $MTCO_2e$/yr. This would be considered a less than significant impact.

GHG Impact #2: The Project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

The Project's consistency with AB 32, SB 32, and the GHG Development Review Process are discussed below**.**

2022 CARB SCOPING PLAN CONSISTENCY

The Project would not impede the State's progress towards carbon neutrality by 2045 under the 2022 Scoping Plan. The Project would be required to comply with applicable current and future regulatory requirements promulgated through the 2022 Scoping Plan. Some of the current transportation sector policies the Project will comply with (through vehicle manufacturer compliance) include: Advanced Clean Cars II, Advanced Clean Trucks, Advanced Clean Fleets, Zero Emission Forklifts, the Off-Road Zero-Emission Targeted Manufacturer rule, Clean Off-Road Fleet Recognition Program, In-use Off-Road Diesel-Fueled Fleets Regulation, Off-Road Zero-Emission Targeted Manufacturer rule, Clean Off-Road Fleet Recognition Program, Amendments to the In-use Off-Road Diesel-Fueled Fleets Regulation, carbon pricing through the Cap-and-Trade Program, and the Low Carbon Fuel Standard. As such, the Project would be consistent with the 2022 Scoping Plan.

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5 CERTIFICATION

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed Adelanto Commercial Project. The information contained in this health risk assessment is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 660-1994.

Haseeb Qureshi
Associate Principal
URBAN CROSSROADS, INC.

(949) 660-1994
hqureshi@urbanxroads.com

EDUCATION

Master of Science in Environmental Studies
California State University, Fullerton • May, 2010

Bachelor of Arts in Environmental Analysis and Design
University of California, Irvine • June, 2006

PROFESSIONAL AFFILIATIONS

AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
ASTM – American Society for Testing and Materials

PROFESSIONAL CERTIFICATIONS

Environmental Site Assessment – American Society for Testing and Materials • June, 2013
Planned Communities and Urban Infill – Urban Land Institute • June, 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April, 2008
Principles of Ambient Air Monitoring – California Air Resources Board • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
Air Dispersion Modeling – Lakes Environmental • June, 2006

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APPENDIX 3.1:

CALEEMOD PROJECT EMISSIONS MODEL OUTPUTS

14806 - Adelanto Commercial Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14806 - Adelanto Commercial
Construction Start Date	9/2/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.80
Precipitation (days)	1.40
Location	34.592459, -117.414464
County	San Bernardino-Mojave Desert
City	Adelanto
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5103
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southwest Gas Corp.
App Version	2022.1.1.13

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Convenience Market with Gas Pumps	5.87	1000sqft	0.13	5,866	0.00	—	—	—
General Office Building	0.96	1000sqft	0.02	956	0.00	—	—	—
Fast Food Restaurant with Drive Thru	3.40	1000sqft	0.08	3,400	0.00	—	—	—
Supermarket	36.8	1000sqft	0.85	36,822	0.00	—	—	—
Automobile Care Center	5.58	1000sqft	0.13	5,577	0.00	—	—	—
Hotel	100	Room	3.33	68,054	0.00	—	—	—
Parking Lot	398	Space	3.58	0.00	0.00	—	—	—
Other Asphalt Surfaces	3.75	Acre	3.75	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.45	3.75	36.1	34.5	0.06	1.60	5.91	7.51	1.47	2.74	4.22	—	7,123	7,123	0.28	0.09	1.78	7,160
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.31	36.1	34.7	31.5	0.06	1.45	2.99	4.44	1.34	1.06	2.39	—	7,089	7,089	0.28	0.12	0.13	7,124

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.78	2.49	5.96	6.47	0.01	0.26	0.51	0.77	0.23	0.19	0.42	—	1,302	1,302	0.05	0.02	0.31	1,310
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.14	0.45	1.09	1.18	< 0.005	0.05	0.09	0.14	0.04	0.03	0.08	—	216	216	0.01	< 0.005	0.05	217

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.45	3.75	36.1	34.5	0.06	1.60	5.91	7.51	1.47	2.74	4.22	—	7,123	7,123	0.28	0.09	1.78	7,160
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.31	36.1	34.7	31.5	0.06	1.45	2.99	4.44	1.34	1.06	2.39	—	7,089	7,089	0.28	0.12	0.13	7,124
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.78	2.49	5.96	6.47	0.01	0.26	0.51	0.77	0.23	0.19	0.42	—	1,302	1,302	0.05	0.02	0.31	1,310
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.14	0.45	1.09	1.18	< 0.005	0.05	0.09	0.14	0.04	0.03	0.08	—	216	216	0.01	< 0.005	0.05	217

2.4. Operations Emissions Compared Against Thresholds

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	68.7	67.7	46.3	410	0.84	0.76	26.5	27.3	0.72	4.66	5.39	220	88,729	88,949	26.1	4.09	735	91,553
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	59.0	58.1	49.8	325	0.77	0.75	26.5	27.3	0.71	4.66	5.38	220	81,345	81,564	26.3	4.23	431	83,914
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	51.2	50.7	43.8	304	0.67	0.66	22.8	23.5	0.63	4.01	4.64	220	71,932	72,151	25.8	3.70	539	74,437
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.34	9.26	7.99	55.4	0.12	0.12	4.16	4.28	0.11	0.73	0.85	36.3	11,909	11,945	4.27	0.61	89.2	12,324

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	67.6	64.0	45.4	404	0.83	0.68	26.5	27.2	0.64	4.66	5.31	—	84,849	84,849	3.67	3.97	312	86,435
Area	0.93	3.65	0.04	5.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	21.6	21.6	< 0.005	< 0.005	—	21.7
Energy	0.10	0.05	0.92	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	3,757	3,757	0.35	0.03	—	3,775
Water	—	—	—	—	—	—	—	—	—	—	—	35.5	102	138	3.65	0.09	—	255
Waste	—	—	—	—	—	—	—	—	—	—	—	184	0.00	184	18.4	0.00	—	644
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	423	423
Total	68.7	67.7	46.3	410	0.84	0.76	26.5	27.3	0.72	4.66	5.39	220	88,729	88,949	26.1	4.09	735	91,553

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	58.9	55.3	48.9	325	0.76	0.69	26.5	27.2	0.64	4.66	5.31	—	77,486	77,486	3.92	4.11	8.09	78,817
Area	—	2.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.10	0.05	0.92	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	3,757	3,757	0.35	0.03	—	3,775
Water	—	—	—	—	—	—	—	—	—	—	—	35.5	102	138	3.65	0.09	—	255
Waste	—	—	—	—	—	—	—	—	—	—	—	184	0.00	184	18.4	0.00	—	644
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	423	423
Total	59.0	58.1	49.8	325	0.77	0.75	26.5	27.3	0.71	4.66	5.38	220	81,345	81,564	26.3	4.23	431	83,914
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	50.6	47.5	42.9	300	0.67	0.59	22.8	23.4	0.55	4.01	4.56	—	68,062	68,062	3.40	3.58	116	69,330
Area	0.46	3.21	0.02	2.59	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.6	10.6	< 0.005	< 0.005	—	10.7
Energy	0.10	0.05	0.92	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	3,757	3,757	0.35	0.03	—	3,775
Water	—	—	—	—	—	—	—	—	—	—	—	35.5	102	138	3.65	0.09	—	255
Waste	—	—	—	—	—	—	—	—	—	—	—	184	0.00	184	18.4	0.00	—	644
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	423	423
Total	51.2	50.7	43.8	304	0.67	0.66	22.8	23.5	0.63	4.01	4.64	220	71,932	72,151	25.8	3.70	539	74,437
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.24	8.66	7.82	54.8	0.12	0.11	4.16	4.27	0.10	0.73	0.83	—	11,269	11,269	0.56	0.59	19.2	11,478
Area	0.08	0.59	< 0.005	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.76	1.76	< 0.005	< 0.005	—	1.77
Energy	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	622	622	0.06	0.01	—	625
Water	—	—	—	—	—	—	—	—	—	—	—	5.88	16.9	22.8	0.60	0.01	—	42.2
Waste	—	—	—	—	—	—	—	—	—	—	—	30.5	0.00	30.5	3.04	0.00	—	107
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	70.0	70.0
Total	9.34	9.26	7.99	55.4	0.12	0.12	4.16	4.28	0.11	0.73	0.85	36.3	11,909	11,945	4.27	0.61	89.2	12,324

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	5.66	5.66	—	2.69	2.69	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.99	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1

Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.58	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	261	261	0.01	0.01	1.02	265
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	64.9	64.9	< 0.005	0.01	0.17	67.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.51	6.51	< 0.005	< 0.005	0.01	6.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.78	1.78	< 0.005	< 0.005	< 0.005	1.85
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.09
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.31
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2024) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.19	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	2.67	2.67	—	0.98	0.98	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.19	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	2.67	2.67	—	0.98	0.98	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.29	2.82	2.48	0.01	0.12	—	0.12	0.11	—	0.11	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement	—	—	—	—	—	—	0.22	0.22	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.51	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1

Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.11	1.80	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	298	298	0.01	0.01	1.17	302
Vendor	0.01	0.01	0.24	0.11	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	227	227	< 0.005	0.03	0.61	237
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.12	1.21	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	264	264	0.01	0.01	0.03	267
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	227	227	< 0.005	0.03	0.02	236
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.3	22.3	< 0.005	< 0.005	0.04	22.6
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.02	19.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.69	3.69	< 0.005	< 0.005	0.01	3.75
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.09	3.09	< 0.005	< 0.005	< 0.005	3.22
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.55	1.30	12.2	14.2	0.03	0.54	—	0.54	0.49	—	0.49	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.16	1.53	1.79	< 0.005	0.07	—	0.07	0.06	—	0.06	—	331	331	0.01	< 0.005	—	333
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.33	< 0.005	0.01	—	0.01	0.01	—	0.01	—	54.9	54.9	< 0.005	< 0.005	—	55.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.23	0.28	2.77	0.00	0.00	0.60	0.60	0.00	0.14	0.14	—	603	603	0.03	0.02	0.07	611
Vendor	0.02	0.01	0.39	0.17	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	357	357	< 0.005	0.05	0.02	372

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.04	0.39	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	78.3	78.3	< 0.005	< 0.005	0.15	79.4
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	45.0	45.0	< 0.005	0.01	0.05	46.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.0	13.0	< 0.005	< 0.005	0.02	13.1
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.45	7.45	< 0.005	< 0.005	0.01	7.75
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.43	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1

Paving	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.09	0.91	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	198	198	0.01	0.01	0.02	200
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.02	11.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.85	1.85	< 0.005	< 0.005	< 0.005	1.87
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Architectural Coating (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	32.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.76	9.76	< 0.005	< 0.005	—	9.79
Architectural Coatings	—	1.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.62	1.62	< 0.005	< 0.005	—	1.62
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.06	0.55	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	121	121	0.01	< 0.005	0.01	122
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.81	6.81	< 0.005	< 0.005	0.01	6.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

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

Convenie Market with Gas Pumps	32.1	30.8	16.4	140	0.26	0.22	7.99	8.21	0.21	1.40	1.61	—	26,127	26,127	1.51	1.41	94.0	26,679
General Office Building	0.10	0.09	0.14	1.30	< 0.005	< 0.005	0.10	0.10	< 0.005	0.02	0.02	—	314	314	0.01	0.01	1.18	319
Fast Food Restaurant with Drive Thru	9.52	9.01	6.52	58.2	0.12	0.10	3.85	3.95	0.09	0.68	0.77	—	12,312	12,312	0.52	0.57	45.3	12,540
Supermarket	20.4	19.2	15.1	136	0.29	0.24	9.28	9.51	0.22	1.63	1.85	—	29,525	29,525	1.17	1.33	109	30,059
Automobile Care Center	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hotel	5.51	4.93	7.22	68.5	0.16	0.13	5.30	5.43	0.12	0.93	1.05	—	16,571	16,571	0.46	0.65	62.4	16,837
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	67.6	64.0	45.4	404	0.83	0.68	26.5	27.2	0.64	4.66	5.31	—	84,849	84,849	3.67	3.97	312	86,435
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	27.7	26.4	17.6	119	0.23	0.22	7.99	8.21	0.21	1.40	1.61	—	23,919	23,919	1.65	1.46	2.44	24,398
General Office Building	0.09	0.08	0.15	0.96	< 0.005	< 0.005	0.10	0.10	< 0.005	0.02	0.02	—	286	286	0.01	0.01	0.03	290

Fast Food Restaurant with Drive Thru	8.31	7.79	7.03	46.6	0.11	0.10	3.85	3.95	0.09	0.68	0.77	—	11,242	11,242	0.56	0.59	1.18	11,433
Supermarket	17.9	16.6	16.3	108	0.26	0.24	9.28	9.52	0.22	1.63	1.85	—	26,946	26,946	1.24	1.38	2.83	27,390
Automobile Care Center	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hotel	4.99	4.42	7.81	50.6	0.15	0.13	5.30	5.43	0.12	0.93	1.05	—	15,093	15,093	0.46	0.67	1.62	15,306
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	58.9	55.3	48.9	325	0.76	0.69	26.5	27.2	0.64	4.66	5.31	—	77,486	77,486	3.92	4.11	8.09	78,817
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	4.39	4.18	2.82	20.0	0.04	0.03	1.26	1.29	0.03	0.22	0.25	—	3,483	3,483	0.24	0.21	5.79	3,557
General Office Building	0.01	0.01	0.02	0.14	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	< 0.005	0.06	36.4
Fast Food Restaurant with Drive Thru	1.23	1.16	1.06	7.41	0.02	0.01	0.57	0.58	0.01	0.10	0.11	—	1,533	1,533	0.08	0.08	2.61	1,562
Supermarket	2.72	2.54	2.52	17.6	0.04	0.04	1.40	1.44	0.03	0.25	0.28	—	3,776	3,776	0.17	0.19	6.47	3,844

Automobile Care Center	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hotel	0.88	0.78	1.40	9.62	0.03	0.02	0.92	0.95	0.02	0.16	0.18	—	2,441	2,441	0.07	0.11	4.26	2,479
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	9.24	8.66	7.82	54.8	0.12	0.11	4.16	4.27	0.10	0.73	0.83	—	11,269	11,269	0.56	0.59	19.2	11,478

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	181	181	0.02	< 0.005	—	182
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	15.9	15.9	< 0.005	< 0.005	—	16.0
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	114	114	0.01	< 0.005	—	115

Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	1,135	1,135	0.11	0.01	—	1,142
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	50.8	50.8	< 0.005	< 0.005	—	51.1
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	1,037	1,037	0.10	0.01	—	1,043
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	131	131	0.01	< 0.005	—	131
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,665	2,665	0.25	0.03	—	2,680
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	181	181	0.02	< 0.005	—	182
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	15.9	15.9	< 0.005	< 0.005	—	16.0
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	114	114	0.01	< 0.005	—	115
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	1,135	1,135	0.11	0.01	—	1,142
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	50.8	50.8	< 0.005	< 0.005	—	51.1
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	1,037	1,037	0.10	0.01	—	1,043

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	131	131	0.01	< 0.005	—	131
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,665	2,665	0.25	0.03	—	2,680
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	29.9	29.9	< 0.005	< 0.005	—	30.1
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	2.64	2.64	< 0.005	< 0.005	—	2.65
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	18.9	18.9	< 0.005	< 0.005	—	19.0
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	188	188	0.02	< 0.005	—	189
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	8.41	8.41	< 0.005	< 0.005	—	8.46
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	172	172	0.02	< 0.005	—	173
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	21.6	21.6	< 0.005	< 0.005	—	21.7
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	441	441	0.04	0.01	—	444

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.7	31.7	< 0.005	< 0.005	—	31.8
General Office Building	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.41	8.41	< 0.005	< 0.005	—	8.43
Fast Food Restaurant with Drive Thru	0.01	0.01	0.10	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	125	125	0.01	< 0.005	—	125
Supermarket	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	199	199	0.02	< 0.005	—	200
Automobile Care Center	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.7	76.7	0.01	< 0.005	—	76.9
Hotel	0.06	0.03	0.55	0.46	< 0.005	0.04	—	0.04	0.04	—	0.04	—	651	651	0.06	< 0.005	—	653
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.10	0.05	0.92	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	1,092	1,092	0.10	< 0.005	—	1,095
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Convenience	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.7	31.7	< 0.005	< 0.005	—	31.8
General Office Building	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.41	8.41	< 0.005	< 0.005	—	8.43
Fast Food Restaurant with Drive Thru	0.01	0.01	0.10	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	125	125	0.01	< 0.005	—	125
Supermarket	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	199	199	0.02	< 0.005	—	200
Automobile Care Center	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.7	76.7	0.01	< 0.005	—	76.9
Hotel	0.06	0.03	0.55	0.46	< 0.005	0.04	—	0.04	0.04	—	0.04	—	651	651	0.06	< 0.005	—	653
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.10	0.05	0.92	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	1,092	1,092	0.10	< 0.005	—	1,095
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.25	5.25	< 0.005	< 0.005	—	5.27
General Office Building	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.39	1.39	< 0.005	< 0.005	—	1.40

Fast Food Restaurant with Drive Thru	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Supermarket	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.0	33.0	< 0.005	< 0.005	—	33.1
Automobile Care Center	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.7	12.7	< 0.005	< 0.005	—	12.7
Hotel	0.01	0.01	0.10	0.08	< 0.005	0.01	—	0.01	0.01	—	0.01	—	108	108	0.01	< 0.005	—	108
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	181	181	0.02	< 0.005	—	181

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	2.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.93	0.86	0.04	5.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	21.6	21.6	< 0.005	< 0.005	—	21.7
Total	0.93	3.65	0.04	5.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	21.6	21.6	< 0.005	< 0.005	—	21.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	2.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	2.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.08	0.08	< 0.005	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.76	1.76	< 0.005	< 0.005	—	1.77
Total	0.08	0.59	< 0.005	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.76	1.76	< 0.005	< 0.005	—	1.77

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	0.83	2.39	3.22	0.09	< 0.005	—	5.98
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.33	0.93	1.26	0.03	< 0.005	—	2.34
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	1.98	5.68	7.65	0.20	< 0.005	—	14.2
Supermarket	—	—	—	—	—	—	—	—	—	—	—	8.70	25.0	33.7	0.89	0.02	—	62.4
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	18.8	54.1	72.9	1.94	0.05	—	135
Hotel	—	—	—	—	—	—	—	—	—	—	—	4.86	14.0	18.8	0.50	0.01	—	34.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	35.5	102	138	3.65	0.09	—	255
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	0.83	2.39	3.22	0.09	< 0.005	—	5.98

General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.33	0.93	1.26	0.03	< 0.005	—	2.34
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	1.98	5.68	7.65	0.20	< 0.005	—	14.2
Supermarket	—	—	—	—	—	—	—	—	—	—	—	8.70	25.0	33.7	0.89	0.02	—	62.4
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	18.8	54.1	72.9	1.94	0.05	—	135
Hotel	—	—	—	—	—	—	—	—	—	—	—	4.86	14.0	18.8	0.50	0.01	—	34.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	35.5	102	138	3.65	0.09	—	255
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	0.14	0.40	0.53	0.01	< 0.005	—	0.99
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.05	0.15	0.21	0.01	< 0.005	—	0.39
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	0.33	0.94	1.27	0.03	< 0.005	—	2.35

Supermarket	—	—	—	—	—	—	—	—	—	—	—	1.44	4.13	5.57	0.15	< 0.005	—	10.3
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	3.12	8.95	12.1	0.32	0.01	—	22.4
Hotel	—	—	—	—	—	—	—	—	—	—	—	0.80	2.31	3.11	0.08	< 0.005	—	5.78
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	5.88	16.9	22.8	0.60	0.01	—	42.2

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	9.50	0.00	9.50	0.95	0.00	—	33.2
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.48	0.00	0.48	0.05	0.00	—	1.68

Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	21.1	0.00	21.1	2.11	0.00	—	73.8
Supermarket	—	—	—	—	—	—	—	—	—	—	—	112	0.00	112	11.2	0.00	—	392
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	11.5	0.00	11.5	1.15	0.00	—	40.2
Hotel	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	184	0.00	184	18.4	0.00	—	644
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	9.50	0.00	9.50	0.95	0.00	—	33.2
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.48	0.00	0.48	0.05	0.00	—	1.68
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	21.1	0.00	21.1	2.11	0.00	—	73.8
Supermarket	—	—	—	—	—	—	—	—	—	—	—	112	0.00	112	11.2	0.00	—	392

Automob Care Center	—	—	—	—	—	—	—	—	—	—	—	11.5	0.00	11.5	1.15	0.00	—	40.2
Hotel	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	184	0.00	184	18.4	0.00	—	644
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	1.57	0.00	1.57	0.16	0.00	—	5.50
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.08	0.00	0.08	0.01	0.00	—	0.28
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	3.49	0.00	3.49	0.35	0.00	—	12.2
Supermarket	—	—	—	—	—	—	—	—	—	—	—	18.5	0.00	18.5	1.85	0.00	—	64.8
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	1.90	0.00	1.90	0.19	0.00	—	6.65
Hotel	—	—	—	—	—	—	—	—	—	—	—	4.89	0.00	4.89	0.49	0.00	—	17.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	30.5	0.00	30.5	3.04	0.00	—	107

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46.5	46.5
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.91	1.91
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	292	292
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44.2	44.2
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	38.2	38.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	423	423
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Convenie Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46.5	46.5
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.91	1.91
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	292	292
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44.2	44.2
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	38.2	38.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	423	423
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.70	7.70
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.32	0.32
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	48.3	48.3

Automob Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.32	7.32
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.32	6.32
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	70.0	70.0

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	9/2/2024	9/13/2024	5.00	10.0	10
Grading	Grading	9/16/2024	10/25/2024	5.00	30.0	30
Building Construction	Building Construction	10/28/2024	12/30/2024	5.00	46.0	300
Paving	Paving	12/3/2024	12/30/2024	5.00	20.0	20
Architectural Coating	Architectural Coating	12/3/2024	12/30/2024	5.00	20.0	20

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Crawler Tractors	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	84.0	0.37

Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	2.00	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	7.00	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	45.8	18.5	LDA,LDT1,LDT2

Building Construction	Vendor	11.0	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	9.15	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	181,013	60,338	19,163

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)

Site Preparation	—	—	35.0	0.00	—
Grading	—	—	120	0.00	—
Paving	0.00	0.00	0.00	0.00	7.33

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Convenience Market with Gas Pumps	0.00	0%
General Office Building	0.00	0%
Fast Food Restaurant with Drive Thru	0.00	0%
Supermarket	0.00	0%
Automobile Care Center	0.00	0%
Hotel	0.00	0%
Parking Lot	3.58	100%
Other Asphalt Surfaces	3.75	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	349	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Convenience Market with Gas Pumps	6,799	3,696	3,295	2,137,016	29,021	15,775	14,067	9,122,336
General Office Building	13.8	1.90	0.60	3,717	365	50.5	16.0	98,648
Fast Food Restaurant with Drive Thru	1,430	1,851	1,446	544,884	10,817	14,000	10,935	4,120,467
Supermarket	3,131	3,849	2,812	1,163,753	27,426	33,714	24,633	10,192,624
Automobile Care Center	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hotel	719	726	535	253,206	19,081	19,267	14,198	6,719,601
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	181,013	60,338	19,163

5.10.3. Landscape Equipment

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Convenience Market with Gas Pumps	189,336	349	0.0330	0.0040	99,018
General Office Building	16,684	349	0.0330	0.0040	26,233
Fast Food Restaurant with Drive Thru	119,227	349	0.0330	0.0040	388,521
Supermarket	1,188,497	349	0.0330	0.0040	621,554
Automobile Care Center	53,192	349	0.0330	0.0040	239,176
Hotel	1,085,969	349	0.0330	0.0040	2,032,807
Parking Lot	136,684	349	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Convenience Market with Gas Pumps	434,509	0.00
General Office Building	169,913	0.00
Fast Food Restaurant with Drive Thru	1,032,015	0.00
Supermarket	4,538,982	0.00
Automobile Care Center	9,829,453	0.00

Hotel	2,536,677	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Convenience Market with Gas Pumps	17.6	—
General Office Building	0.89	—
Fast Food Restaurant with Drive Thru	39.2	—
Supermarket	208	—
Automobile Care Center	21.3	—
Hotel	54.8	—
Parking Lot	0.00	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Convenience Market with Gas Pumps	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0
Convenience Market with Gas Pumps	Supermarket refrigeration and condensing units	R-717	150	26.5	16.5	16.5	18.0
General Office Building	Household refrigerators and/or freezers	User Defined	150	0.02	0.60	0.00	1.00

General Office Building	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0
Fast Food Restaurant with Drive Thru	Household refrigerators and/or freezers	User Defined	150	0.00	0.60	0.00	1.00
Fast Food Restaurant with Drive Thru	Other commercial A/C and heat pumps	User Defined	750	1.80	4.00	4.00	18.0
Fast Food Restaurant with Drive Thru	Walk-in refrigerators and freezers	User Defined	150	< 0.005	7.50	7.50	20.0
Supermarket	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0
Supermarket	Supermarket refrigeration and condensing units	User Defined	150	26.5	16.5	16.5	18.0
Automobile Care Center	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0
Automobile Care Center	Supermarket refrigeration and condensing units	User Defined	150	26.5	16.5	16.5	18.0
Hotel	Household refrigerators and/or freezers	User Defined	150	0.00	0.60	0.00	1.00
Hotel	Other commercial A/C and heat pumps	User Defined	750	1.80	4.00	4.00	18.0
Hotel	Walk-in refrigerators and freezers	User Defined	150	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.9	annual days of extreme heat
Extreme Precipitation	0.35	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract

Exposure Indicators	—
AQ-Ozone	82.5
AQ-PM	8.59
AQ-DPM	19.7
Drinking Water	48.7
Lead Risk Housing	58.5
Pesticides	0.00
Toxic Releases	17.9
Traffic	19.1
Effect Indicators	—
CleanUp Sites	68.9
Groundwater	36.8
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	0.00
Solid Waste	83.3
Sensitive Population	—
Asthma	91.9
Cardio-vascular	99.9
Low Birth Weights	99.8
Socioeconomic Factor Indicators	—
Education	92.6
Housing	97.7
Linguistic	62.2
Poverty	97.7
Unemployment	98.2

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	0.333632747
Employed	0.295136661
Median HI	0.359296805
Education	—
Bachelor's or higher	4.157577313
High school enrollment	100
Preschool enrollment	30.45040421
Transportation	—
Auto Access	4.837674836
Active commuting	74.05363788
Social	—
2-parent households	8.443474913
Voting	1.911972283
Neighborhood	—
Alcohol availability	52.40600539
Park access	32.70884127
Retail density	18.3498011
Supermarket access	5.235467727
Tree canopy	0.269472604
Housing	—
Homeownership	15.46259464
Housing habitability	12.19042731
Low-inc homeowner severe housing cost burden	35.91684845
Low-inc renter severe housing cost burden	19.05556268
Uncrowded housing	9.072244322

Health Outcomes	—
Insured adults	29.96278712
Arthritis	0.0
Asthma ER Admissions	6.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.6
Cognitively Disabled	10.7
Physically Disabled	4.8
Heart Attack ER Admissions	0.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	42.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	0.2
Elderly	76.6
English Speaking	25.6
Foreign-born	38.4
Outdoor Workers	20.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	88.4
Traffic Density	17.8
Traffic Access	23.0
Other Indices	—
Hardship	99.9
Other Decision Support	—
2016 Voting	3.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	79.0
Healthy Places Index Score for Project Location (b)	0.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Building Construction compressed to match 2025 OY.
Construction: Off-Road Equipment	T/L/B replaced with Crawler Tractor to accurately calculate disturbance for Site Preparation and Grading phases Standard 8-hour work days
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Site Preparation, Grading, and Building Construction
Operations: Vehicle Data	Trip characteristics taken from Traffic Analysis
Operations: Water and Waste Water	It should be noted that the Traffic Analysis did not account for daily trips coming to the proposed automated car wash, as such it was conservatively assumed that 1,699.50 (25%) of the 6,798 trips from the Convenience store with gas station land use would use the car wash. This assumption likely overstates the Project car wash water use because not all vehicles generated by the car wash would necessarily be washed (e.g., employee trips, vendor trips, etc.). On this basis, water usage for the proposed automated car wash is estimated at 9,304,762.50 gallons per year. The water usage estimates for the car wash were added to the default water usage estimates in CalEEMod for a total of 9,829,452.50 gallons per year
Operations: Refrigerants	As of 1 January 2022, new commercial refrigeration equipment may not use refrigerants with a GWP of 150 or greater. Further, R-404A (the CalEEMod default) is unacceptable for new supermarket and cold storage systems as of 1 January 2019 and 2023, respectively. Beginning 1 January 2025, all new air conditioning equipment may not use refrigerants with a GWP of 750 or greater.
Land Use	Taken from site plan