Victorville Residential

GREENHOUSE GAS ANALYSIS

CITY OF VICTORVILLE

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LIST OF ABBREVIATED TERMS

(1)	Reference
AB	Assembly Bill
CARB	California Air Resources Board
CAA	Federal Clean Air Act
CAFÉ	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
N_20	Nitrogen Dioxide
NHTSA	National Highway Traffic Safety Administration
NIOSH	National Institute for Occupational Safety and Health
NOx	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 *Victorville Residential 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 Victorville Residential 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 Victorville Residential site is located on the southwest corner of Seneca Road and Mesa Linda Avenue in the City of Victorville, as show in Exhibit 1-A

1.2 PROJECT DESCRIPTION

The proposed Project consists of 210 single family detached residential dwelling units on 56 acres, as shown in Exhibit 1-B. The Project is anticipated to have an Opening Year of 2023.

EXHIBIT 1-A: LOCATION MAP

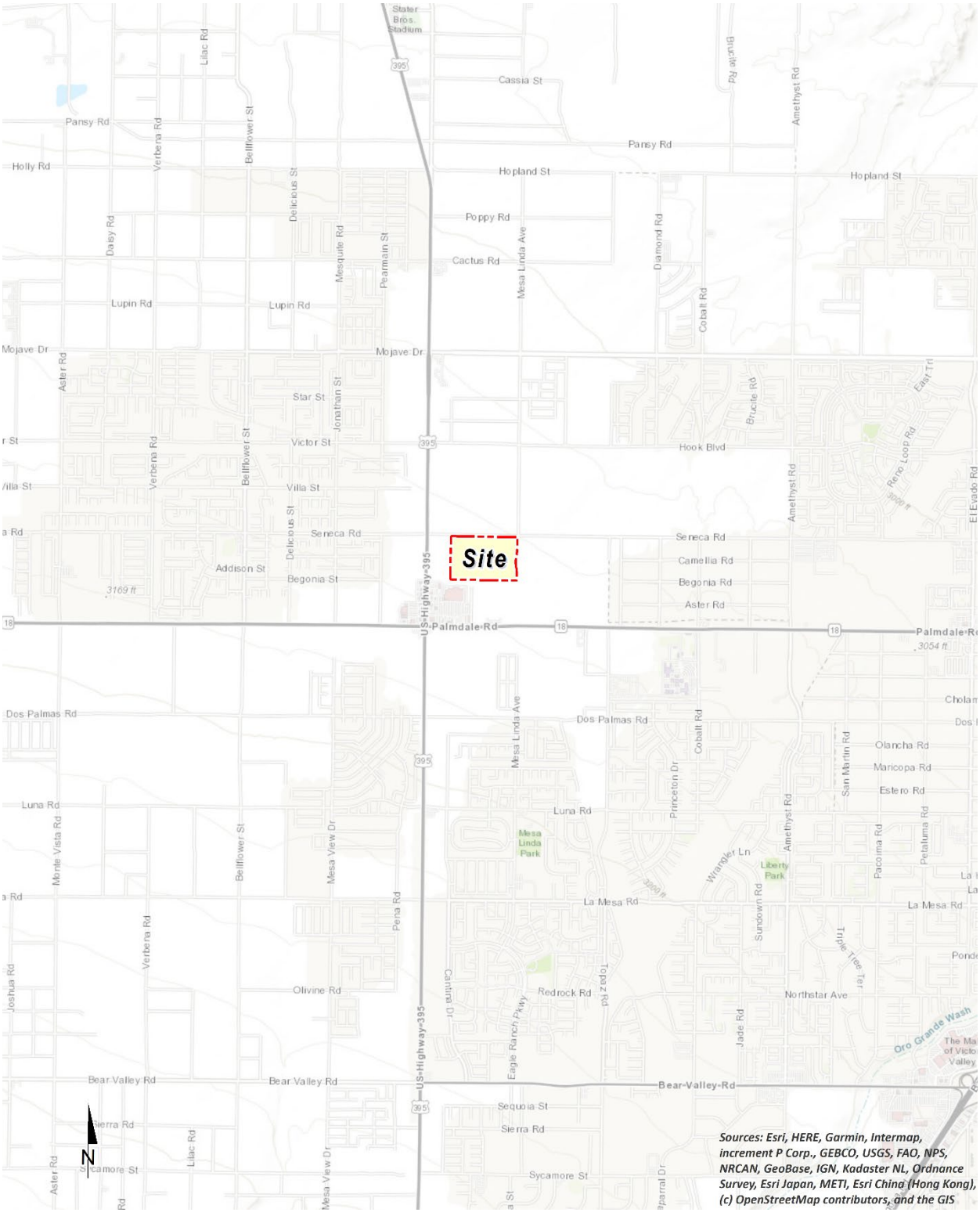

EXHIBIT 1-B: SITE PLAN

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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 radioactive 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).

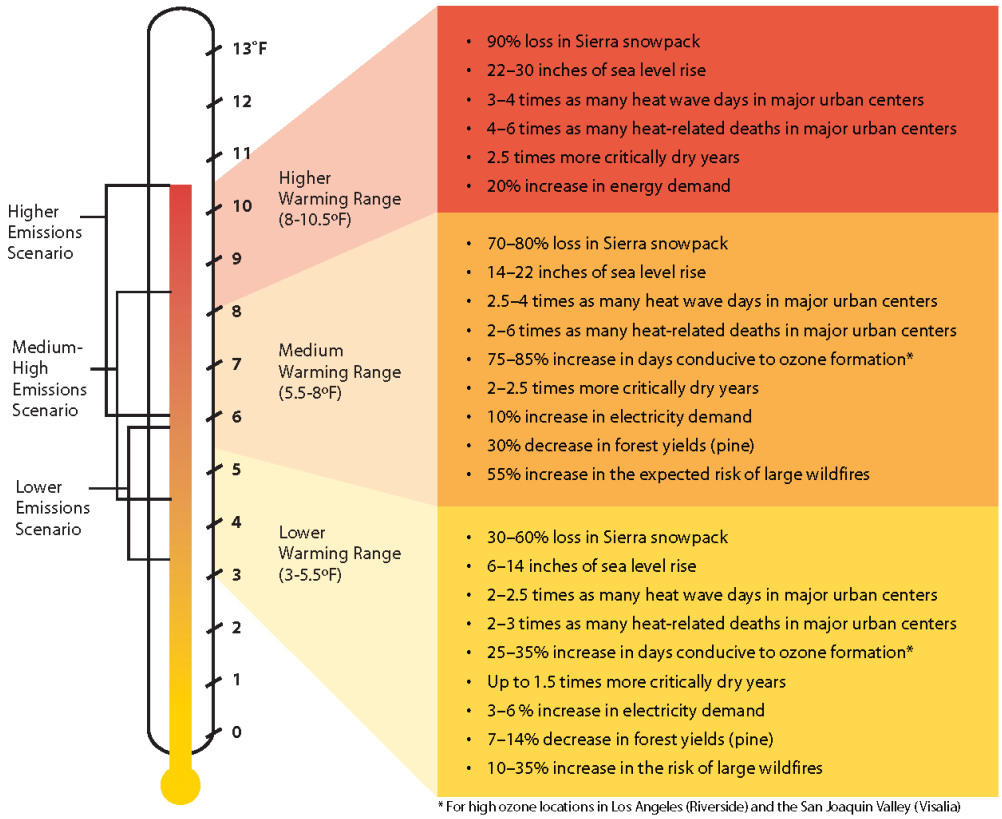
Greenhouse Gases	Description	Sources	Health Effects
		used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. N_2O can be transported into the stratosphere, be deposited on the earth's surface, and be converted to other compounds by chemical reaction (17).	
Chlorofluorocarbons (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 each assessment report has changed based the current understanding of the interactions of different chemicals in the atmosphere (24).

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

Gas	Atmospheric Lifetime (years)	GWP (100-year time horizon)		
		2nd Assessment Report	4th Assessment Report	5th Assessment Report
CO_2	See*	1	1	1
CH_4	12 .4	21	25	28
N_2O	121	310	298	265
HFC-23	222	11,700	14,800	12,400
HFC-134a	13.4	1,300	1,430	1,300
HFC-152a	1.5	140	124	138
SF_6	3,200	23,900	22,800	23,500

Source: International Panel on Climate Change, Library. https://www.ipcc.ch/library/

2.6 GHG EMISSIONS INVENTORIES

2.6.2 UNITED STATES

According to the United States (U.S.) Environmental Protection Agency (EPA), in 2019, GHG emissions in the U.S. totaled 6,558 million metric tons of carbon dioxide equivalents (MT CO_2e), or 5,769 million MT CO_2e after accounting for sequestration from the land sector. Emissions decreased from 2018 to 2019 by 1.7% (after accounting for sequestration from the land sector). This decrease was driven largely by a decrease in emissions from fossil fuel combustion resulting from a decrease in total energy use in 2019 compared to 2018 and a continued shift from coal to natural gas and renewables in the electric power sector. 2019 GHG emissions were 13% below 2005 levels (25).

2.6.3 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 U.S. emissions inventory total. The California Air Resource Board (CARB) compiles GHG inventories for the State of California. 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 an average 418.2 million MT CO_2e per year (/yr) (26). In 2016, statewide GHG emissions dropped below the 2020 GHG Limit and have remained below the Limit since that time.

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 (27).

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 (28). 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 Rule). The SAFE Vehicles Rule was proposed to amend exiting 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 (29). In April, the U.S. EPA and National Highway Traffic Safety Administration's separately announced proposed rulemakings to repeal the previous administration's light-duty motor vehicle regulations that were part of the "The Safer Affordable Fuel-Efficient Vehicles Rule Part One: One National Program" (SAFE 1). The comment period has closed, but no addition actions have been taken to date.

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.

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 (31).

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[1]). GHGs as defined under AB 32 include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. Since AB32 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 (32).

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 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.

[1] 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.

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 (33).

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 (34).

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 (35) (36).

CAP-AND-TRADE PROGRAM

The 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 (37).

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."* (38)

The Cap-and-Trade Program covered approximately 80% of California's GHG emissions (34). 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.

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's Energy Efficiency Standards

CCR Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings

require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2019 version of Title 24 was adopted by the CEC and became effective on January 1, 2020, and is incorporated in CalEEMod.

California Green Building Standards Code

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 January 1, 2011, and is administered by the California Building Standards Commission (BSC). CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2019 California Green Building Code Standards that have become effective on January 1, 2020. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. CALGreen recognizes that many jurisdictions have developed existing construction and demolition ordinances and defers to them as the ruling guidance provided, they establish a minimum 65% diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. The 2019 CALGreen standards are applicable to the Project and require, among other items (41):

- During site development one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site (4.106.2).
    - Retention basins of sufficient size shall be utilized to retain storm water on the site.
    - Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
    - Compliance with a lawfully enacted storm water management ordinance.
- Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings (4.106.3).
- New residential construction shall facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) (4.106.4).
    - For one- and two-family dwelling units and townhomes with attached garages, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit for each dwelling unit (4.106.4.1).
    - Where 17 or more multifamily dwelling units are constructed on a building site, 3 percent of the total number of parking spaces provided for all types of parking facilities, but in no case less than one, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number (4.106.4.2).

        - Construction documents shall indicate the location of proposed EV spaces. At least one EV space shall be located in common use areas and available for use by all residents. (4.106.4.2.1)

    - All newly constructed hotels and motels shall provide EV spaces capable of supporting future installation of EVSE. The construction documents shall identify the location of the EV spaces.

        - The number of required EV spaces shall be based on the total number of parking spaces provided for all types of parking facilities in accordance with Table 4.106.4.3.1. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number (4.106.4.3.1).

- Comply with Title 24, Part 6 energy efficiency standards (4.201.1).
- 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 (4.303.1.1)
    - Urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush (4.303.1.2).
    - Showerheads. Single showerheads shall have a minimum flow rate of not more than 1.8 gallons per minute and 80 psi (4.303.1.3.1). 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 (4.303.1.3.2).
    - Faucets and fountains. Residential lavatory faucets shall have a maximum flow rate of note more than 1.2 gallons per minute at 60 psi (4.303.1.4.1). Lavatory faucets in common or public use areas shall have a maximum flow rate of note more than 0.5 gallons per minute at 60 psi (4.303.1.4.2). Metering faucets shall not deliver more than 0.25 gallons per cycle (4.303.1.4.3). Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute of 60 psi (4.303.1.4.4).
- Outdoor portable water use in landscaped areas. Residential developments with an aggregate area equal to or greater than 500 square feet 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 (4.304.1).
- Newly constructed residential developments, where disinfected tertiary recycled water is available from a municipal source to a construction site, may be required to have recycled water supply systems installed, allowing the use of recycled water for residential landscape irrigation systems (4.305.1).
- Construction waste management. Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with Section 4.401.1, 4.408.2; or meet a local construction and demolition waste management ordinance, whichever is more stringent (5.408.1).

- At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building (4.410.1):
    - Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
    - Operation and maintenance instructions for the following:
    - Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
    - Roof and yard drainage, including gutters and downspouts.
    - Space conditioning systems, including condensers and air filters.
    - Landscape irrigation systems.
    - Water reuse systems.
    - Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
    - Public transportation and/or carpool options available in the area.
    - Educational material on the positive impacts of an interior relative humidity between 30—60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
    - Information about water-conserving landscape and irrigation design and controllers which conserve water.
    - Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
    - Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
    - Information about state solar energy and incentive programs available.
    - A copy of all special inspection verifications required by the enforcing agency or this code.
- Recycling by Occupants. Where 5 or more multi-family dwelling units, 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 (4.410.2).

It should be noted the requirements of CalGreen are not incorporated into CalEEMod.

2.7.4 REGIONAL

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 (42). 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.

2.7.5 LOCAL

City of Victorville Climate Action Plan (CAP)

The City has prepared a Climate Action Plan (CAP), which provides a framework for reducing GHG emissions and managing resources to best prepare for a changing climate (43). In order to determine consistency with the CAP, the City of Victorville provided Screening Tables to aid in measuring the reduction of GHG emissions attributable to certain design and construction measures incorporated into development projects. The CAP contains a menu of measures potentially applicable to discretionary development that include energy conservation, water use reduction, increased residential density or mixed uses, transportation management and solid waste recycling. Individual sub-measures are assigned a point value within the overall Screening Table of GHG implementation measures. The point values are adjusted according to the intensity of action items with modest adoption/installation (those that reduce GHG emissions by modest amounts) worth the least number of points and greatly enhanced adoption/installation worth the most. Projects that garner at least 100 points are determined to be consistent with the CAP and do not require quantification of project specific GHG emissions. Projects that are consistent with adopted CAPs are also considered to support and would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

2.8 DISCUSSION ON ESTABLISHMENT OF SIGNIFICANCE THRESHOLDS

Based on the City of Victorville CAP, Projects that garner at least 100 points from the CAP Consistency Checklist are determined to be consistent with the CAP and do not require quantification of project specific GHG emissions.

Additionally, the MDAQMD has determined that a project that emits less than 90,718.5 MT CO_2e/yr is not considered a substantial GHG emitter and the GHG impact would be less than significant. On the other hand, if a project would emit GHG emissions in excess of 90,718.5 MT CO_2e/yr could be considered a substantial GHG emitter, requiring additional analysis and potential mitigation. While the MDAQMD threshold is not used for determining significance, the threshold is used for informational purposes.

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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 (33):

- 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?

3.3 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 June 2021, the SCAQMD, in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts, released the latest version of the California Emissions Estimator Model, Version 2020.4.0 (CalEEMod). The purpose of this model is to calculate construction-source and operational-source criteria pollutants and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (44). 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.

3.4 CONSTRUCTION EMISSIONS

Project construction actvities would generate CO_2 and CH_4 emissions The report *Victorville Residential Air Quality Impact Analysis Report* (Urban Crossroads, Inc.) (AQIA) contains detailed information regarding Project construction activities (45) (46). 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 August 2022 and will last through December 2023. 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. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per CEQA guidelines. 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 and a 2023 opening year. The associated construction equipment was generally based on CalEEMod defaults. 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 3-1: CONSTRUCTION DURATION

Phase Name	Start Date	End Date	Days
Site Preparation	9/5/2022	9/30/2022	20
Grading	10/1/2022	12/23/2022	60
Building Construction	12/24/2022	12/29/2023	265
Paving	9/18/2023	12/29/2023	75
Architectural Coating	9/18/2023	12/29/2023	75

Source: CalEEMod, Appendix 3.1.

TABLE 3-2: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Phase Name	Equipment	Amount	Hours Per Day
Site Preparation	Crawler Tractors (B/T/L)	4	8
	Rubber Tired Dozers	3	8
Grading	Crawler Tractors (B/T/L)	2	8
	Crawler Tractors (E)	2	8
	Excavators	2	8
	Graders	1	8
	Rubber Tired Dozers	1	8
Building Construction	Cranes	2	8
	Forklifts	6	8
	Generator Sets	2	8
	Tractors/Loaders/Backhoes	6	8
	Welders	2	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressors	1	8

B/T/L = Backhoes, Tractors, Loaders ; E = Excavators
Source: CalEEMod, Appendix 3.1

3.4.2 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 (42). 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	Total CO_2e
2022	216.99	0.07	0.00	218.77
2023	856.76	0.18	0.01	864.20
Total Annual Construction Emissions	1,073.76	0.25	0.01	1,082.97
Amortized Construction Emissions ($MTCO_2e$)	**35.79**	**0.01**	**0.00**	**36.10**

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, and N_2O from the following primary sources:

- Building Energy Use (combustion emissions associated with natural gas and electricity)
- Water Supply, Treatment and Distribution
- Solid Waste
- Mobile Source Emissions

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 vehicle trips generated by the Project. Trip characteristics available from the report, *Victorville Residential Vehicle Miles Traveled Analysis* were utilized in this analysis (44).

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.

3.6 EMISSIONS SUMMARY

As shown on Table 3-4, without accounting for applicable regulatory requirements and PDFs, the Project would result in 2,966.77MTCO_2e/yr.

TABLE 3-4: PROJECT GHG EMISSIONS SUMMARY (ANNUAL)

Emission Source	Emissions (MT/yr)			
	CO_2	CH_4	N_2O	Total CO_2e
Annual construction-related emissions amortized over 30 years	35.79	0.01	0.00	36.10
Area Source	151.41	0.01	0.00	152.36
Energy Source	613.62	0.03	0.01	617.03
Mobile Source	1,945.53	0.12	0.11	1,979.97
Waste	50.02	2.96	0.00	123.92
Water Usage	45.74	0.36	0.01	57.39
Total CO_2e (All Sources)	**2,966.77**			
MDAQMD Threshold	**90,718.5**			
Significant?	**No**			

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

3.7 CITY OF VICTORVILLE CAP CHECKLIST

As previously stated, the purpose of the City of Victorville GHG CAP Checklist is to provide guidance in selecting and accounting for the reduction of GHG emissions attributable to certain design and construction measures incorporated into development projects. The CAP Checklist assigns points for each option incorporated into a project. The point values correspond to the minimum emissions reduction expected from each feature. Each project must achieve a minimum of 100 points to be considered consistent with the CAP emission targets. The menu of features allows maximum flexibility and options for how development projects can implement the GHG reduction measures. Table 3-5 presents a list of the GHG reduction measure options and the associated point values in the GHG Checklist.

TABLE 3-5: CITY OF VICTORVILLE RESIDENTIAL CAP CHECKLIST

Feature	Description	Assigned Point Values	Project Points
Reduction Measure PS E1: Residential Energy Efficiency			
Building Envelope			
Insulation	2019 Baseline (walls R-8:, roof/attic: R-30)	0 points	**9**
	Enhanced Insulation (walls R-13:, roof/attic: R-38)	9 points	
	Enhanced Insulation (rigid wall insulation R-13, roof/attic: R-38)	9 points	
	Greatly Enhanced Insulation (spray foam wall insulated walls R-15 or higher, roof/attic R-38 or higher)	11 points	
Windows	2019 Baseline Windows (0.3 U-factor, 0.23 solar heat gain coefficient (SHGC)	0 points	**7**
	Enhanced Window Insulation (0.28 U-Factor, 0.22 SHGC)	6 points	
	Enhanced Window Insulation (0.28 U-Factor, 0.22 SHGC)	7 points	
	Greatly Enhanced Window Insulation (0.28 or less U-Factor, 0.22 or less SHGC)	9 points	
Cool Roof	Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance)	6 points	**6**
	Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance)	6 points	
	Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)	7 points	
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage.		**6**
	Air barrier applied to exterior walls, calking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent)	6 points	
	Blower Door HERS Verified Envelope Leakage or equivalent	5 points	
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls.		
	Modest Thermal Mass (10% of floor or 10% of walls: 12" or more thick exposed concrete or masonry. No permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)	1 points	
Building Envelope	Enhanced Thermal Mass (20% of floor or 20% of walls: 12" or more thick exposed concrete or masonry. No permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)	2 points	**12**

Feature	Description	Assigned Point Values	Project Points
Performance Standard	Projects that have not been designed to a level of detail to know the specific attributes of the building envelope can use this option in committing to one of the following performance standards: Modestly Enhanced Building Envelope (5% > Title 24) Enhanced Building Envelope (15% > Title 24) Greatly Enhanced Building Envelope (20% > Title 24)	 12 points 28 points 36 points	
Indoor Space Efficiencies Residential			
Heating/ Cooling Distribution System	Minimum Duct Insulation (R-6 required) Modest Duct insulation (R-8) Enhanced Duct Insulation (R-8) Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)	0 points 5 points 5 points 7 points	**5**
Space Heating/ Cooling Equipment	2019 Minimum HVAC Efficiency (SEER 13/75% AFUE or 7.7 HSPF) Improved Efficiency HVAC (SEER 14/78% AFUE or 8 HSPF) High Efficiency HVAC (SEER 15/80% AFUE or 8.5 HSPF) Very High Efficiency HVAC (SEER 16/82% AFUE or 9 HSPF)	0 points 2 points 4 points 5 points	**4**
Water Heaters	2019 Minimum Efficiency (0.57 Energy Factor) Improved Efficiency Water Heater (0.675 Energy Factor) High Efficiency Water Heater (0.72 Energy Factor) Very High Efficiency Water Heater (0.92 Energy Factor) Solar Pre-heat System (0.2 Net Solar Fraction) Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)	0 points 7 points 9 points 11 points 2 points 5 points	**9**
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours. All peripheral rooms within the living space have at least one window (required) All rooms within the living space have daylight (through use of windows, solar tubes, skylights, etc.) such that each room has at least 800 lumens of light during a sunny day All rooms daylighted	 0 points 1 point 1 point	**2**
Artificial Lighting	2019 Minimum (required) Efficient Lights (25% of in-unit fixtures considered high efficacy. High efficacy is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40watt) High Efficiency Lights (50% of in-unit fixtures are high efficacy) Very High Efficiency Lights (100% of in-unit fixtures are high efficacy)	0 points 5 points 6 points 7 points	**5**

Feature	Description	Assigned Point Values	Project Points
Appliances	Energy Star Refrigerator (new) Energy Star Dish Washer (new)	1 point 1 point	**2**
	Energy Star Washing Machine (new)	1 point	
Miscellaneous Building Efficiencies Residential			
Building Placement	North/South alignment of building or other building placement such that the orientation of the buildings optimizes natural heating, cooling, and lighting.	3 points	
Shading	At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on Jun 21st.	2 Points	
Energy Star Homes	EPA Energy Star for Homes (version 3 or above)	15 points	
Other	This allows innovation by the applicant to provide design features that increases the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Existing Residential Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing residential dwelling units to further the point value of their project. Retrofitting existing residential dwelling units within the City is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case by case basis and must have the approval of the Escondido Planning Department. The decision to allow applicants to ability to participate in this program will be evaluated based upon, but not limited to the following: Will the energy efficiency retrofit project benefit low income or disadvantaged residents? Does the energy efficiency retrofit project fit within the overall assumptions in Reduction Measure R2E3? Does the energy efficiency retrofit project provide co-benefits important to the City? Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.	TBD	

Feature	Description	Assigned Point Values	Project Points
Reduction Measure: New Home Clean Energy			
Photovoltaic	Solar Photovoltaic panels installed on individual homes or in collective neighborhood arrangements such that the total power provided augments:		
	30 percent of the power needs of the project	9 points	**12**
	40 percent of the power needs of the project	12 points	
	50 percent of the power needs of the project	17 points	
	60 percent of the power needs of the project	20 points	
	70 percent of the power needs of the project	23 points	
	80 percent of the power needs of the project	25 points	
	90 percent of the power needs of the project	28 points	
	100 percent of the power needs of the project	31 points	
Wind turbines	Some areas of the City lend themselves to wind turbine applications. Analysis of the area's capability to support wind turbines should be evaluated prior to choosing this feature. Individual wind turbines at homes or collective neighborhood arrangements of wind turbines such that the total power provided augments:		
	30 percent of the power needs of the project	9 points	
	40 percent of the power needs of the project	12 points	
	50 percent of the power needs of the project	17 points	
	60 percent of the power needs of the project	20 points	
	70 percent of the power needs of the project	23 points	
	80 percent of the power needs of the project	25 points	
	90 percent of the power needs of the project	28 points	
	100 percent of the power needs of the project	31 points	
Off-site renewable energy project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing homes that will help implement R2E4. These off-site renewable energy retrofit project proposals will be determined on a case by case basis and must be accompanied by a detailed plan that documents the quantity of renewable energy the proposal will generate. Point values will be determined based upon the energy generated by the proposal.	TBD	

Feature	Description	Assigned Point Values	Project Points
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD	
Reduction Measure: Water Use Reduction Initiative			
Irrigation and Landscaping			
Water Efficient Landscaping	Limit conventional turf to < 25% of each lot (required)	0 points	**7**
	Limit conventional turf to < 50% of each lot	2 points	
	Non-conventional turf warm season turf <50% of required landscape area and/or low-water using plants allowed)	4 points	
	Only California Native Plants that requires no irrigation or some supplemental irrigation	5 points	
Water Efficient irrigation systems	Low precipitation spray heads < .75"/hr or drip irrigation	1 point	**1**
	Weather based irrigation control systems or moisture sensors (demonstrate 20% reduced water use)	2 points	
Recycled Water	Recycled connections (purple pipe) to irrigation system on site	6 points	
Water Reuse	Gray water Reuse System collects Gray-water from clothes-washers, showers and faucets for irrigation use	12 points	
Storm water Reuse Systems	Innovative on-site stormwater collection, filtration and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
Potable Water Residential			
Showers	Water Efficient Showerheads (2.0 gpm)	2 points	**2**
Toilets	Water Efficient Toilets (1.5 gpm)	2 points	**2**
Faucets	Water Efficient faucets (1.28 gpm)	2 points	**2**
Potable Water Performance Standard	Projects that have not been designed to a level of detail to know the specific attributes of the interior design of the buildings can use this option in committing to a potable water supply performance standard		
	EPA High Efficiency Water Fixtures (15% > Title 24)		

Feature	Description	Assigned Point Values	Project Points
Reduction Measure: Land Use Based Trips and VMT Reduction			
Mixed Use Residential	Mixes of land uses that complement one another in a way that reduces the need for vehicle, determined based upon a Transportation Impact Analysis	TBD	
	Increased destination accessibility other than transit.	TBD	
	Infill location that reduces vehicle trips or VMT beyond the specified measures.	TBD	
Residential Near Local Retail	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled (VMT)	**Close to Walmart** TBD	**15**
Other Trip Reduction Measures	Other trip or VMT reduction measures not listed above with TIA and/or other traffic data supporting the trip and/or VMT for the project.	TBD	
Reduction Measure: Bicycle Master Plan Development			
Bicycle Infrastructure	Provide bicycle paths within project boundaries.	TBD	
	Provide bicycle path linkages between residential and other land uses.	2 points	
	Provide bicycle path linkages between residential and transit.	5 points	
Reduction Measure: Install EV Chargers			
Electric Vehicle Recharging	Level 1 110 volt AC chargers Per Charger	2 points	
	Level 2 240 volt AC Fast Chargers Per Charger	5 points	
Reduction Measure: Traffic Flow Management Improvements			
	Signal Synchronization	1 point	
	Signal connected to existing ITS	3 points	
Total Points Earned by Residential Project:			**108**

3.8 FINDINGS AND CONCLUSIONS

GHG Impact #1: The Project would not generate direct or indirect greenhouse gas emission that would result in a significant impact on the environment.

The Project has the potential to generate a total of approximately 2,966.77 MT CO_2e/yr as summarized on Table 3-4. This is be well the MDAQMD's threshold of 90,718.5 MT CO_2e. While this is not used for determining the significance of GHG emessions, quantification of GHG emissions attributable to the Project are nonetheless quantified and compared to the MDAQMD's threshold herein for informational purposes.

Additionally, per the CAP Checklist (Appendix 3.2), the Project would yield 108 points. Projects that yield 100 points under the city's GHG Screening Tables methodology are considered to be consistent with the CAP. The Project would therefore be consistent with the CAP. Because the Project is consistent with the CAP, Project GHG emissions would have a less-than-significant impact on the environment. Because the City's CAP addresses GHG emissions reduction, is in concert with AB 32 and international efforts to address global climate change, and includes specific local requirements that will substantially lessen the cumulative problem, compliance with the CAP fulfills the description of mitigation found in *CEQA Guidelines* §15130(a)(3) and §15183.5.

Finally, as discussed in Chapter 2, an individual project cannot generate enough GHG emissions to influence global climate change. The project participates in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of GHGs, which when taken together may have a significant impact on global climate change. Based on the total GHG emeissions and compliance with the City of Victorville CAP, the Project's emssions would have a less than significant impact on global climate change.

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.

As substantiated herein, the proposed Project would be consistent with the CAP, would be in concert with AB 32 and international efforts to address global climate change, and would reflect specific local requirements that would substantially lessen cumulative GHG emissions impacts.

As discussed in Impact GHG-1 above, the Project is consistent with the City of Victorville's adopted CAP since it will achieve the required minimum 100 points per the City's Screening Tables. Consequently, the Project is determined to be consistent with AB 32's Scoping Plan reduction target for Year 2020 and 2030. The project applicant would not actively interfere with any future City-mandated, state mandated, or federally mandated retrofit obligations enacted or promulgated to legally require development City of Victorville, state-wide, or nation-wide to assist in meeting state-adopted greenhouse gas emissions reduction targets, including that established under Executive Order S-3-05, Executive Order B-30-15, or SB 32. On this basis, 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.

A representative example of how the Project could achieve a minimum of 100 Screening Table Points through implementation of the CAP Screening Table Measures is provided in Appendix 3.2 of this GHGA. The City of Victorville, through established design review and development permit processes would ensure that the Project final designs achieve Screening Table points identified in Appendix 3.2. It is noted here that the CAP Screening Table points identified are minimums that would be achieved by the Project. Final designs as approved by the City of Victorville may yield additional Screening Table points and further GHG emissions reductions. After a review of the Screening Tables, it has been determined that the Project would garner 108 points and thus the Project would be consistent with the CAP.

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5 CERTIFICATION

The contents of this GHG study report represent an accurate depiction of the GHG impacts associated with the proposed Victorville Residential Project. The information contained in this GHG report is based on the best available data at the time of preparation. If you have any questions, please contact me directly (619) 778-1971.

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APPENDIX 3.1:

CALEEMOD EMISSIONS MODEL OUTPUTS

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

14222-Victorville Residential

Mojave Desert AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	210.00	Dwelling Unit	56.00	378,000.00	601

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	30
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acerage taken from Tentative Tract Layout

Construction Phase - Applicant provided schedule

Off-road Equipment - Standerd 8-hour wokr day

Off-road Equipment - Shorter Construction period, double equipment, standard 8-hour work day

Off-road Equipment - T/L/B and Scrapers replaced with Crawler Tractor to more accurelty show soil disturbance

Off-road Equipment -

Off-road Equipment - T/L/B replaced with Crawler Tractor to more accurelty show soil disturbance

Trips and VMT -

Grading -

Architectural Coating - Changed from default to show no impact

Vehicle Trips - Ex

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Rule 445 no wood burning devices

Area Coating -

Water And Wastewater - per CalGreen 20% Indoor water reduction over CalEEMod 2000 survey data

Solid Waste -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblConstructionPhase	NumDays	1,110.00	265.00
tblConstructionPhase	NumDays	110.00	60.00
tblConstructionPhase	NumDays	40.00	20.00
tblFireplaces	NumberGas	115.50	189.00
tblFireplaces	NumberWood	73.50	0.00
tblLandUse	LotAcreage	68.18	56.00
tblOffRoadEquipment	HorsePower	212.00	97.00
tblOffRoadEquipment	HorsePower	212.00	367.00
tblOffRoadEquipment	HorsePower	212.00	97.00
tblOffRoadEquipment	LoadFactor	0.43	0.37
tblOffRoadEquipment	LoadFactor	0.43	0.48
tblOffRoadEquipment	LoadFactor	0.43	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblVehicleTrips	ST_TR	9.54	9.55
tblVehicleTrips	SU_TR	8.55	8.56
tblVehicleTrips	WD_TR	9.44	9.45
tblWater	IndoorWaterUseRate	13,682,345.38	10,945,876.30
tblWoodstoves	NumberCatalytic	10.50	0.00
tblWoodstoves	NumberNoncatalytic	10.50	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1726	1.7150	1.1815	2.4700e-003	0.4703	0.0861	0.5564	0.2117	0.0793	0.2910	0.0000	216.9927	216.9927	0.0671	3.5000e-004	218.7721
2023	4.0692	4.5874	5.4562	9.8100e-003	0.1079	0.2186	0.3265	0.0291	0.2052	0.2343	0.0000	856.7646	856.7646	0.1848	9.4300e-003	864.1951
Maximum	**4.0692**	**4.5874**	**5.4562**	**9.8100e-003**	**0.4703**	**0.2186**	**0.5564**	**0.2117**	**0.2052**	**0.2910**	**0.0000**	**856.7646**	**856.7646**	**0.1848**	**9.4300e-003**	**864.1951**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1726	1.7150	1.1815	2.4700e-003	0.1884	0.0861	0.2745	0.0839	0.0793	0.1632	0.0000	216.9925	216.9925	0.0671	3.5000e-004	218.7719
2023	4.0692	4.5874	5.4562	9.8100e-003	0.1079	0.2186	0.3265	0.0291	0.2052	0.2343	0.0000	856.7637	856.7637	0.1848	9.4300e-003	864.1942
Maximum	**4.0692**	**4.5874**	**5.4562**	**9.8100e-003**	**0.1884**	**0.2186**	**0.3265**	**0.0839**	**0.2052**	**0.2343**	**0.0000**	**856.7637**	**856.7637**	**0.1848**	**9.4300e-003**	**864.1942**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**48.75**	**0.00**	**31.93**	**53.07**	**0.00**	**24.33**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-5-2022**	**12-4-2022**	1.4533	1.4533
2	**12-5-2022**	**3-4-2023**	1.2149	1.2149
3	**3-5-2023**	**6-4-2023**	1.1644	1.1644
4	**6-5-2023**	**9-4-2023**	1.1642	1.1642
5	**9-5-2023**	**9-30-2023**	0.8304	0.8304
		Highest	1.4533	1.4533

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1296	0.1465	1.6143	9.0000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	151.4129	151.4129	5.3000e-003	2.7300e-003	152.3587
Energy	0.0320	0.2737	0.1165	1.7500e-003		0.0221	0.0221		0.0221	0.0221	0.0000	613.6191	613.6191	0.0311	8.8500e-003	617.0331
Mobile	1.0576	1.7062	10.1844	0.0209	2.1015	0.0188	2.1203	0.5610	0.0176	0.5787	0.0000	1,947.6168	1,947.6168	0.1160	0.1060	1,982.0964
Waste						0.0000	0.0000		0.0000	0.0000	50.0190	0.0000	50.0190	2.9560	0.0000	123.9200
Water						0.0000	0.0000		0.0000	0.0000	3.4726	42.2719	45.7446	0.3602	8.8500e-003	57.3891
Total	**3.2193**	**2.1264**	**11.9152**	**0.0235**	**2.1015**	**0.0599**	**2.1614**	**0.5610**	**0.0588**	**0.6198**	**53.4916**	**2,754.9207**	**2,808.4123**	**3.4687**	**0.1264**	**2,932.7973**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1296	0.1465	1.6143	9.0000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	151.4129	151.4129	5.3000e-003	2.7300e-003	152.3587
Energy	0.0320	0.2737	0.1165	1.7500e-003		0.0221	0.0221		0.0221	0.0221	0.0000	613.6191	613.6191	0.0311	8.8500e-003	617.0331
Mobile	1.0576	1.7062	10.1844	0.0209	2.1015	0.0188	2.1203	0.5610	0.0176	0.5787	0.0000	1,947.6168	1,947.6168	0.1160	0.1060	1,982.0964
Waste						0.0000	0.0000		0.0000	0.0000	50.0190	0.0000	50.0190	2.9560	0.0000	123.9200
Water						0.0000	0.0000		0.0000	0.0000	3.4726	42.2719	45.7446	0.3602	8.8500e-003	57.3891
Total	**3.2193**	**2.1264**	**11.9152**	**0.0235**	**2.1015**	**0.0599**	**2.1614**	**0.5610**	**0.0588**	**0.6198**	**53.4916**	**2,754.9207**	**2,808.4123**	**3.4687**	**0.1264**	**2,932.7973**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/5/2022	9/30/2022	5	20	
2	Grading	Grading	10/1/2022	12/23/2022	5	60	
3	Building Construction	Building Construction	12/24/2022	12/29/2023	5	265	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	9/18/2023	12/29/2023	5	75	
5	Architectural Coating	Architectural Coating	9/18/2023	12/29/2023	5	75	

Acres of Grading (Site Preparation Phase): 70

Acres of Grading (Grading Phase): 120

Acres of Paving: 0

Residential Indoor: 765,450; Residential Outdoor: 255,150; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crawler Tractors	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Crawler Tractors	2	8.00	367	0.48
Grading	Crawler Tractors	2	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Cranes	2	8.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	6	8.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	8.00	78	0.48

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	18	76.00	22.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2178	0.0000	0.2178	0.1033	0.0000	0.1033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0403	0.3930	0.2068	3.8000e-004		0.0229	0.0229		0.0210	0.0210	0.0000	33.4423	33.4423	0.0108	0.0000	33.7127
Total	**0.0403**	**0.3930**	**0.2068**	**3.8000e-004**	**0.2178**	**0.0229**	**0.2406**	**0.1033**	**0.0210**	**0.1243**	**0.0000**	**33.4423**	**33.4423**	**0.0108**	**0.0000**	**33.7127**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.4000e-004	4.7700e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.1615	1.1615	4.0000e-005	4.0000e-005	1.1735
Total	**6.0000e-004**	**4.4000e-004**	**4.7700e-003**	**1.0000e-005**	**1.4500e-003**	**1.0000e-005**	**1.4600e-003**	**3.9000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1615**	**1.1615**	**4.0000e-005**	**4.0000e-005**	**1.1735**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0849	0.0000	0.0849	0.0403	0.0000	0.0403	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0403	0.3930	0.2068	3.8000e-004		0.0229	0.0229		0.0210	0.0210	0.0000	33.4422	33.4422	0.0108	0.0000	33.7126
Total	**0.0403**	**0.3930**	**0.2068**	**3.8000e-004**	**0.0849**	**0.0229**	**0.1078**	**0.0403**	**0.0210**	**0.0613**	**0.0000**	**33.4422**	**33.4422**	**0.0108**	**0.0000**	**33.7126**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.4000e-004	4.7700e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.1615	1.1615	4.0000e-005	4.0000e-005	1.1735
Total	**6.0000e-004**	**4.4000e-004**	**4.7700e-003**	**1.0000e-005**	**1.4500e-003**	**1.0000e-005**	**1.4600e-003**	**3.9000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1615**	**1.1615**	**4.0000e-005**	**4.0000e-005**	**1.1735**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2443	0.0000	0.2443	0.1062	0.0000	0.1062	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1199	1.2335	0.8607	1.8600e-003		0.0589	0.0589		0.0542	0.0542	0.0000	163.8078	163.8078	0.0530	0.0000	165.1323
Total	**0.1199**	**1.2335**	**0.8607**	**1.8600e-003**	**0.2443**	**0.0589**	**0.3032**	**0.1062**	**0.0542**	**0.1604**	**0.0000**	**163.8078**	**163.8078**	**0.0530**	**0.0000**	**165.1323**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9900e-003	1.4600e-003	0.0159	4.0000e-005	4.8400e-003	2.0000e-005	4.8700e-003	1.2900e-003	2.0000e-005	1.3100e-003	0.0000	3.8715	3.8715	1.3000e-004	1.2000e-004	3.9115
Total	**1.9900e-003**	**1.4600e-003**	**0.0159**	**4.0000e-005**	**4.8400e-003**	**2.0000e-005**	**4.8700e-003**	**1.2900e-003**	**2.0000e-005**	**1.3100e-003**	**0.0000**	**3.8715**	**3.8715**	**1.3000e-004**	**1.2000e-004**	**3.9115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0953	0.0000	0.0953	0.0414	0.0000	0.0414	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1199	1.2335	0.8607	1.8600e-003		0.0589	0.0589		0.0542	0.0542	0.0000	163.8076	163.8076	0.0530	0.0000	165.1321
Total	**0.1199**	**1.2335**	**0.8607**	**1.8600e-003**	**0.0953**	**0.0589**	**0.1542**	**0.0414**	**0.0542**	**0.0956**	**0.0000**	**163.8076**	**163.8076**	**0.0530**	**0.0000**	**165.1321**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9900e-003	1.4600e-003	0.0159	4.0000e-005	4.8400e-003	2.0000e-005	4.8700e-003	1.2900e-003	2.0000e-005	1.3100e-003	0.0000	3.8715	3.8715	1.3000e-004	1.2000e-004	3.9115
Total	**1.9900e-003**	**1.4600e-003**	**0.0159**	**4.0000e-005**	**4.8400e-003**	**2.0000e-005**	**4.8700e-003**	**1.2900e-003**	**2.0000e-005**	**1.3100e-003**	**0.0000**	**3.8715**	**3.8715**	**1.3000e-004**	**1.2000e-004**	**3.9115**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.0700e-003	0.0838	0.0872	1.4000e-004		4.3200e-003	4.3200e-003		4.0600e-003	4.0600e-003	0.0000	12.4155	12.4155	3.0400e-003	0.0000	12.4916
Total	**9.0700e-003**	**0.0838**	**0.0872**	**1.4000e-004**		**4.3200e-003**	**4.3200e-003**		**4.0600e-003**	**4.0600e-003**	**0.0000**	**12.4155**	**12.4155**	**3.0400e-003**	**0.0000**	**12.4916**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	2.3700e-003	1.0400e-003	1.0000e-005	3.7000e-004	3.0000e-005	4.0000e-004	1.1000e-004	3.0000e-005	1.4000e-004	0.0000	1.0682	1.0682	1.0000e-005	1.5000e-004	1.1120
Worker	6.3000e-004	4.6000e-004	5.0300e-003	1.0000e-005	1.5300e-003	1.0000e-005	1.5400e-003	4.1000e-004	1.0000e-005	4.1000e-004	0.0000	1.2260	1.2260	4.0000e-005	4.0000e-005	1.2386
Total	**7.3000e-004**	**2.8300e-003**	**6.0700e-003**	**2.0000e-005**	**1.9000e-003**	**4.0000e-005**	**1.9400e-003**	**5.2000e-004**	**4.0000e-005**	**5.5000e-004**	**0.0000**	**2.2942**	**2.2942**	**5.0000e-005**	**1.9000e-004**	**2.3506**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.0700e-003	0.0838	0.0872	1.4000e-004		4.3200e-003	4.3200e-003		4.0600e-003	4.0600e-003	0.0000	12.4155	12.4155	3.0400e-003	0.0000	12.4916
Total	**9.0700e-003**	**0.0838**	**0.0872**	**1.4000e-004**		**4.3200e-003**	**4.3200e-003**		**4.0600e-003**	**4.0600e-003**	**0.0000**	**12.4155**	**12.4155**	**3.0400e-003**	**0.0000**	**12.4916**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	2.3700e-003	1.0400e-003	1.0000e-005	3.7000e-004	3.0000e-005	4.0000e-004	1.1000e-004	3.0000e-005	1.4000e-004	0.0000	1.0682	1.0682	1.0000e-005	1.5000e-004	1.1120
Worker	6.3000e-004	4.6000e-004	5.0300e-003	1.0000e-005	1.5300e-003	1.0000e-005	1.5400e-003	4.1000e-004	1.0000e-005	4.1000e-004	0.0000	1.2260	1.2260	4.0000e-005	4.0000e-005	1.2386
Total	**7.3000e-004**	**2.8300e-003**	**6.0700e-003**	**2.0000e-005**	**1.9000e-003**	**4.0000e-005**	**1.9400e-003**	**5.2000e-004**	**4.0000e-005**	**5.5000e-004**	**0.0000**	**2.2942**	**2.2942**	**5.0000e-005**	**1.9000e-004**	**2.3506**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4351	4.0138	4.5006	7.5000e-003		0.1945	0.1945		0.1828	0.1828	0.0000	645.8429	645.8429	0.1573	0.0000	649.7761
Total	**0.4351**	**4.0138**	**4.5006**	**7.5000e-003**		**0.1945**	**0.1945**		**0.1828**	**0.1828**	**0.0000**	**645.8429**	**645.8429**	**0.1573**	**0.0000**	**649.7761**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2300e-003	0.1028	0.0507	5.7000e-004	0.0191	9.9000e-004	0.0201	5.5200e-003	9.5000e-004	6.4600e-003	0.0000	53.9202	53.9202	2.3000e-004	7.3500e-003	56.1167
Worker	0.0303	0.0211	0.2401	6.7000e-004	0.0797	3.8000e-004	0.0801	0.0212	3.5000e-004	0.0215	0.0000	62.0671	62.0671	1.9400e-003	1.8700e-003	62.6727
Total	**0.0345**	**0.1239**	**0.2908**	**1.2400e-003**	**0.0988**	**1.3700e-003**	**0.1002**	**0.0267**	**1.3000e-003**	**0.0280**	**0.0000**	**115.9874**	**115.9874**	**2.1700e-003**	**9.2200e-003**	**118.7894**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4351	4.0138	4.5006	7.5000e-003		0.1945	0.1945		0.1828	0.1828	0.0000	645.8421	645.8421	0.1573	0.0000	649.7753
Total	**0.4351**	**4.0138**	**4.5006**	**7.5000e-003**		**0.1945**	**0.1945**		**0.1828**	**0.1828**	**0.0000**	**645.8421**	**645.8421**	**0.1573**	**0.0000**	**649.7753**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2300e-003	0.1028	0.0507	5.7000e-004	0.0191	9.9000e-004	0.0201	5.5200e-003	9.5000e-004	6.4600e-003	0.0000	53.9202	53.9202	2.3000e-004	7.3500e-003	56.1167
Worker	0.0303	0.0211	0.2401	6.7000e-004	0.0797	3.8000e-004	0.0801	0.0212	3.5000e-004	0.0215	0.0000	62.0671	62.0671	1.9400e-003	1.8700e-003	62.6727
Total	**0.0345**	**0.1239**	**0.2908**	**1.2400e-003**	**0.0988**	**1.3700e-003**	**0.1002**	**0.0267**	**1.3000e-003**	**0.0280**	**0.0000**	**115.9874**	**115.9874**	**2.1700e-003**	**9.2200e-003**	**118.7894**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0387	0.3822	0.5469	8.6000e-004		0.0191	0.0191		0.0176	0.0176	0.0000	75.1008	75.1008	0.0243	0.0000	75.7080
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0387**	**0.3822**	**0.5469**	**8.6000e-004**		**0.0191**	**0.0191**		**0.0176**	**0.0176**	**0.0000**	**75.1008**	**75.1008**	**0.0243**	**0.0000**	**75.7080**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7200e-003	1.2000e-003	0.0137	4.0000e-005	4.5400e-003	2.0000e-005	4.5600e-003	1.2100e-003	2.0000e-005	1.2300e-003	0.0000	3.5337	3.5337	1.1000e-004	1.1000e-004	3.5682
Total	**1.7200e-003**	**1.2000e-003**	**0.0137**	**4.0000e-005**	**4.5400e-003**	**2.0000e-005**	**4.5600e-003**	**1.2100e-003**	**2.0000e-005**	**1.2300e-003**	**0.0000**	**3.5337**	**3.5337**	**1.1000e-004**	**1.1000e-004**	**3.5682**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0387	0.3822	0.5469	8.6000e-004		0.0191	0.0191		0.0176	0.0176	0.0000	75.1007	75.1007	0.0243	0.0000	75.7079
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0387**	**0.3822**	**0.5469**	**8.6000e-004**		**0.0191**	**0.0191**		**0.0176**	**0.0176**	**0.0000**	**75.1007**	**75.1007**	**0.0243**	**0.0000**	**75.7079**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7200e-003	1.2000e-003	0.0137	4.0000e-005	4.5400e-003	2.0000e-005	4.5600e-003	1.2100e-003	2.0000e-005	1.2300e-003	0.0000	3.5337	3.5337	1.1000e-004	1.1000e-004	3.5682
Total	**1.7200e-003**	**1.2000e-003**	**0.0137**	**4.0000e-005**	**4.5400e-003**	**2.0000e-005**	**4.5600e-003**	**1.2100e-003**	**2.0000e-005**	**1.2300e-003**	**0.0000**	**3.5337**	**3.5337**	**1.1000e-004**	**1.1000e-004**	**3.5682**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.5479					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5800e-003	0.0652	0.0906	1.5000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	12.7663	12.7663	7.6000e-004	0.0000	12.7854
Total	**3.5574**	**0.0652**	**0.0906**	**1.5000e-004**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**12.7663**	**12.7663**	**7.6000e-004**	**0.0000**	**12.7854**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7200e-003	1.2000e-003	0.0137	4.0000e-005	4.5400e-003	2.0000e-005	4.5600e-003	1.2100e-003	2.0000e-005	1.2300e-003	0.0000	3.5337	3.5337	1.1000e-004	1.1000e-004	3.5682
Total	**1.7200e-003**	**1.2000e-003**	**0.0137**	**4.0000e-005**	**4.5400e-003**	**2.0000e-005**	**4.5600e-003**	**1.2100e-003**	**2.0000e-005**	**1.2300e-003**	**0.0000**	**3.5337**	**3.5337**	**1.1000e-004**	**1.1000e-004**	**3.5682**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.5479					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5800e-003	0.0652	0.0906	1.5000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	12.7663	12.7663	7.6000e-004	0.0000	12.7854
Total	**3.5574**	**0.0652**	**0.0906**	**1.5000e-004**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**12.7663**	**12.7663**	**7.6000e-004**	**0.0000**	**12.7854**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7200e-003	1.2000e-003	0.0137	4.0000e-005	4.5400e-003	2.0000e-005	4.5600e-003	1.2100e-003	2.0000e-005	1.2300e-003	0.0000	3.5337	3.5337	1.1000e-004	1.1000e-004	3.5682
Total	**1.7200e-003**	**1.2000e-003**	**0.0137**	**4.0000e-005**	**4.5400e-003**	**2.0000e-005**	**4.5600e-003**	**1.2100e-003**	**2.0000e-005**	**1.2300e-003**	**0.0000**	**3.5337**	**3.5337**	**1.1000e-004**	**1.1000e-004**	**3.5682**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0576	1.7062	10.1844	0.0209	2.1015	0.0188	2.1203	0.5610	0.0176	0.5787	0.0000	1,947.6168	1,947.6168	0.1160	0.1060	1,982.0964
Unmitigated	1.0576	1.7062	10.1844	0.0209	2.1015	0.0188	2.1203	0.5610	0.0176	0.5787	0.0000	1,947.6168	1,947.6168	0.1160	0.1060	1,982.0964

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,984.50	2,005.50	1797.60	5,568,907	5,568,907
Total	1,984.50	2,005.50	1,797.60	5,568,907	5,568,907

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.526992	0.056742	0.174739	0.140288	0.030240	0.007815	0.006009	0.021774	0.000488	0.000160	0.028107	0.000925	0.005722

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	296.6244	296.6244	0.0250	3.0300e-003	298.1546
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	296.6244	296.6244	0.0250	3.0300e-003	298.1546
NaturalGas Mitigated	0.0320	0.2737	0.1165	1.7500e-003		0.0221	0.0221		0.0221	0.0221	0.0000	316.9948	316.9948	6.0800e-003	5.8100e-003	318.8785
NaturalGas Unmitigated	0.0320	0.2737	0.1165	1.7500e-003		0.0221	0.0221		0.0221	0.0221	0.0000	316.9948	316.9948	6.0800e-003	5.8100e-003	318.8785

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.94026e+006	0.0320	0.2737	0.1165	1.7500e-003		0.0221	0.0221		0.0221	0.0221	0.0000	316.9948	316.9948	6.0800e-003	5.8100e-003	318.8785
Total		**0.0320**	**0.2737**	**0.1165**	**1.7500e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**	**0.0000**	**316.9948**	**316.9948**	**6.0800e-003**	**5.8100e-003**	**318.8785**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.94026e+006	0.0320	0.2737	0.1165	1.7500e-003		0.0221	0.0221		0.0221	0.0221	0.0000	316.9948	316.9948	6.0800e-003	5.8100e-003	318.8785
Total		**0.0320**	**0.2737**	**0.1165**	**1.7500e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**	**0.0000**	**316.9948**	**316.9948**	**6.0800e-003**	**5.8100e-003**	**318.8785**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.67258e+006	296.6244	0.0250	3.0300e-003	298.1546
Total		**296.6244**	**0.0250**	**3.0300e-003**	**298.1546**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.67258e+006	296.6244	0.0250	3.0300e-003	298.1546
Total		**296.6244**	**0.0250**	**3.0300e-003**	**298.1546**

6.0 Area Detail

6.1 Mitigation Measures Area

14222-Victorville Residential - Mojave Desert AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.1296	0.1465	1.6143	9.0000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	151.4129	151.4129	5.3000e-003	2.7300e-003	152.3587
Unmitigated	2.1296	0.1465	1.6143	9.0000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	151.4129	151.4129	5.3000e-003	2.7300e-003	152.3587

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5913					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4763					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	148.8658	148.8658	2.8500e-003	2.7300e-003	149.7505
Landscaping	0.0470	0.0180	1.5596	8.0000e-005		8.6300e-003	8.6300e-003		8.6300e-003	8.6300e-003	0.0000	2.5471	2.5471	2.4500e-003	0.0000	2.6083
Total	**2.1296**	**0.1465**	**1.6143**	**9.0000e-004**		**0.0190**	**0.0190**		**0.0190**	**0.0190**	**0.0000**	**151.4129**	**151.4129**	**5.3000e-003**	**2.7300e-003**	**152.3587**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5913					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4763					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	148.8658	148.8658	2.8500e-003	2.7300e-003	149.7505
Landscaping	0.0470	0.0180	1.5596	8.0000e-005		8.6300e-003	8.6300e-003		8.6300e-003	8.6300e-003	0.0000	2.5471	2.5471	2.4500e-003	0.0000	2.6083
Total	**2.1296**	**0.1465**	**1.6143**	**9.0000e-004**		**0.0190**	**0.0190**		**0.0190**	**0.0190**	**0.0000**	**151.4129**	**151.4129**	**5.3000e-003**	**2.7300e-003**	**152.3587**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	45.7446	0.3602	8.8500e-003	57.3891
Unmitigated	45.7446	0.3602	8.8500e-003	57.3891

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	10.9459 / 8.62583	45.7446	0.3602	8.8500e-003	57.3891
Total		**45.7446**	**0.3602**	**8.8500e-003**	**57.3891**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	10.9459 / 8.62583	45.7446	0.3602	8.8500e-003	57.3891
Total		**45.7446**	**0.3602**	**8.8500e-003**	**57.3891**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	50.0190	2.9560	0.0000	123.9200
Unmitigated	50.0190	2.9560	0.0000	123.9200

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	246.41	50.0190	2.9560	0.0000	123.9200
Total		**50.0190**	**2.9560**	**0.0000**	**123.9200**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	246.41	50.0190	2.9560	0.0000	123.9200
Total		**50.0190**	**2.9560**	**0.0000**	**123.9200**

9.0 Operational Offroad

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX 3.2:

SCREENING TABLES

City of Victorville

Department of Development

Planning ◆ Building ◆ Code Enforcement

14343 Civic Drive
PO Box 5001
Victorville, CA 92393-5001
(760) 955-5135
Fax (760) 269-0070
planning@victorvilleca.gov

Greenhouse as Emissions Screening Table Review

Note: This form is to be used only for projects which are subject to CEQA and not exempt from CEQA (i.e. Negative Declaration, Mitigated Negative Declaration or Environmental Impact Report).

GENERAL INFORMATION

Applicant: DAVID LIU Contact Name: David Liu

Address: 1803 Virginia Road
San Marino, CA. 91108

Telephone No.: (626) 695-5222 Email Address: Davidmcliu@gmail.com

TYPE OF PROJECT

☒ Residential (Single-Family or Multi-Family) ☐ Commercial or Industrial

PROJECT LOCATION

General Location/Address of Project: N.W. of Begonia Road & Mesa Linda Avenue & N.E. of Walmart

Name of Business (Tentative Tract 20500- PLAN22-0028):

Assessor's Parcel No(s):3103-551-05

Existing Zoning: R-! single family residential

PROJECT DESCRIPTION:

210 Residential Lots in 6 Phases with 2 WQMP Basins/Mini Park on 60.58 Acres located just North of the Existing WALMART @ Hwy.395 & Palmdale Road.

Instructions

1. Fill out the appropriate section below for either Residential or Commercial/Industrial.
2. Choose items which the the proposed project will incorporate into the develelop opment to reach a minimum of 100 points.
3. Do not chose items which are inch are independently required by other laws, codcodes es or the VVMC, such as the California BBuilding Green Code, the Civic Center Sustaiustainability Plan or required infrastructure im improvements.
4. For those items listed with a TBD point value, please provide specific information and background studies (i.e. traffic study) for Staff to determine an assigned point value.
5. Submit the Screening Table along with the Planning Commission Review Application.

Residential Section

Feature	Description	Assigned Point Values	Project Points
Reduction Measure PS E1: Residential Energy Efficiency			
Building Envelope			
Insulation	2019 Baseline (walls R-8:, roof/attic: R-30)	0 points	**9**
	Enhanced Insulation (walls R-13:, roof/attic: R-38)	9 points	
	Enhanced Insulation (rigid wall insulation R-13, roof/attic: R-38)	9 points	
	Greatly Enhanced Insulation (spray foam wall insulated walls R-15 or higher, roof/attic R-38 or higher)	11 points	
Windows	2019 Baseline Windows (0.3 U-factor, 0.23 solar heat gain coefficient (SHGC)	0 points	**7**
	Enhanced Window Insulation (0.28 U-Factor, 0.22 SHGC)	6 points	
	Enhanced Window Insulation (0.28 U-Factor, 0.22 SHGC)	7 points	
	Greatly Enhanced Window Insulation (0.28 or less U-Factor, 0.22 or less SHGC)	9 points	
Cool Roof	Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance)	6 points	**6**
	Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance)	6 points	
	Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)	7 points	
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage.		**6**
	Air barrier applied to exterior walls, calking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent)	6 points	
	Blower Door HERS Verified Envelope Leakage or equivalent	5 points	
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls.		
	Modest Thermal Mass (10% of floor or 10% of walls: 12" or more thick exposed concrete or masonry. No permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)	1 points	
Building Envelope Performance Standard	Enhanced Thermal Mass (20% of floor or 20% of walls: 12" or more thick exposed concrete or masonry. No permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)	2 points	**12**
	Projects that have not been designed to a level of detail to know the specific attributes of the building envelope can use this option in committing to one of the following performance standards:		
	Modestly Enhanced Building Envelope (5% > Title 24)	12 points	
	Enhanced Building Envelope (15% > Title 24)	28 points	
	Greatly Enhanced Building Envelope (20% > Title 24)	36 points	

Feature	Description	Assigned Point Values	Project Points
Indoor Space Efficiencies Residential			
Heating/ Cooling Distribution System	Minimum Duct Insulation (R-6 required)	0 points	**5**
	Modest Duct insulation (R-8)	5 points	
	Enhanced Duct Insulation (R-8)	5 points	
	Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)	7 points	
Space Heating/ Cooling Equipment	2019 Minimum HVAC Efficiency (SEER 13/75% AFUE or 7.7 HSPF) Improved	0 points	**4**
	Efficiency HVAC (SEER 14/78% AFUE or 8 HSPF)	2 points	
	High Efficiency HVAC (SEER 15/80% AFUE or 8.5 HSPF)	4 points	
	Very High Efficiency HVAC (SEER 16/82% AFUE or 9 HSPF)	5 points	
Water Heaters	2019 Minimum Efficiency (0.57 Energy Factor)	0 points	**9**
	Improved Efficiency Water Heater (0.675 Energy Factor)	7 points	
	High Efficiency Water Heater (0.72 Energy Factor)	9 points	
	Very High Efficiency Water Heater (0.92 Energy Factor)	11 points	
	Solar Pre-heat System (0.2 Net Solar Fraction)	2 points	
	Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)	5 points	
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours.		**2**
	All peripheral rooms within the living space have at least one window (required)	0 points	
	All rooms within the living space have daylight (through use of windows, solar tubes, skylights, etc.) such that each room has at least 800 lumens of light during a sunny day	1 point	
	All rooms daylighted	1 point	
Artificial Lighting	2019 Minimum (required)	0 points	**5**
	Efficient Lights (25% of in-unit fixtures considered high efficacy. High efficacy is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40watt)	5 points	
	High Efficiency Lights (50% of in-unit fixtures are high efficacy)	6 points	
	Very High Efficiency Lights (100% of in-unit fixtures are high efficacy)	7 points	
Appliances	Energy Star Refrigerator (new)	1 point	**2**
	Energy Star Dish Washer (new)	1 point	
Feature	**Description**	**Assigned Point Values**	**Project Points**
	Energy Star Washing Machine (new)	1 point	
Miscellaneous Building Efficiencies Residential			

Building Placement	North/South alignment of building or other building placement such that the orientation of the buildings optimizes natural heating, cooling, and lighting.	3 points	
Shading	At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on Jun 21st.	2 Points	
Energy Star Homes	EPA Energy Star for Homes (version 3 or above)	15 points	
Other	This allows innovation by the applicant to provide design features that increases the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Existing Residential Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing residential dwelling units to further the point value of their project. Retrofitting existing residential dwelling units within the City is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case by case basis and must have the approval of the Escondido Planning Department. The decision to allow applicants to ability to participate in this program will be evaluated based upon, but not limited to the following: Will the energy efficiency retrofit project benefit low income or disadvantaged residents? Does the energy efficiency retrofit project fit within the overall assumptions in Reduction Measure R2E3? Does the energy efficiency retrofit project provide co-benefits important to the City? Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.	TBD	
Reduction Measure: New Home Clean Energy			
Photovoltaic	Solar Photovoltaic panels installed on individual homes or in collective neighborhood arrangements such that the total power provided augments: 30 percent of the power needs of the project 40 percent of the power needs of the project 50 percent of the power needs of the project 60 percent of the power needs of the project	9 points 12 points 17 points 20 points	**12**
Feature	**Description**	**Assigned Point Values**	**Project Points**
	70 percent of the power needs of the project 80 percent of the power needs of the project 90 percent of the power needs of the project 100 percent of the power needs of the project	23 points 25 points 28 points 31 points	
Wind turbines	Some areas of the City lend themselves to wind turbine applications. Analysis of the area's capability to support wind turbines should be evaluated prior to choosing this feature.		

	Individual wind turbines at homes or collective neighborhood arrangements of wind turbines such that the total power provided augments: 30 percent of the power needs of the project 40 percent of the power needs of the project 50 percent of the power needs of the project 60 percent of the power needs of the project 70 percent of the power needs of the project 80 percent of the power needs of the project 90 percent of the power needs of the project 100 percent of the power needs of the project	 9 points 12 points 17 points 20 points 23 points 25 points 28 points 31 points	
Off-site renewable energy project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing homes that will help implement R2E4. These off-site renewable energy retrofit project proposals will be determined on a case by case basis and must be accompanied by a detailed plan that documents the quantity of renewable energy the proposal will generate. Point values will be determined based upon the energy generated by the proposal.	TBD	
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD	
Feature	**Description**	**Assigned Point Values**	**Project Points**
Reduction Measure: Water Use Reduction Initiative			
Irrigation and Landscaping			
Water Efficient Landscaping	Limit conventional turf to < 25% of each lot (required) Limit conventional turf to < 50% of each lot Non-conventional turf warm season turf <50% of required landscape area and/or low-water using plants allowed) Only California Native Plants that requires no irrigation or some supplemental irrigation	0 points 2 points 4 points 5 points	**7**
Water Efficient irrigation systems	Low precipitation spray heads < .75”/hr or drip irrigation Weather based irrigation control systems or moisture sensors (demonstrate 20% reduced water use)	1 point 2 points	**1**
Recycled Water	Recycled connections (purple pipe) to irrigation system on site	6 points	
Water Reuse	Gray water Reuse System collects Gray-water from clothes-washers, showers and faucets for irrigation use	12 points	

Storm water Reuse Systems	Innovative on-site stormwater collection, filtration and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
Potable Water Residential			
Showers	Water Efficient Showerheads (2.0 gpm)	2 points	**2**
Toilets	Water Efficient Toilets (1.5 gpm)	2 points	**2**
Faucets Potable Water Performance Standard	Water Efficient faucets (1.28 gpm) Projects that have not been designed to a level of detail to know the specific attributes of the interior design of the buildings can use this option in committing to a potable water supply performance standard EPA High Efficiency Water Fixtures (15% > Title 24)	2 points	**2**
Reduction Measure: Land Use Based Trips and VMT Reduction			
Mixed Use Residential	Mixes of land uses that complement one another in a way that reduces the need for vehicle, determined based upon a Transportation Impact Analysis Increased destination accessibility other than transit.	TBD TBD	
Feature	**Description**	**Assigned Point Values**	**Project Points**
	Infill location that reduces vehicle trips or VMT beyond the specified measures.	TBD	
Residential Near Local Retail	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled (VMT)	**Close to Walmart** TBD	**15**
Other Trip Reduction Measures	Other trip or VMT reduction measures not listed above with TIA and/or other traffic data supporting the trip and/or VMT for the project.	TBD	
Reduction Measure: Bicycle Master Plan Development			
Bicycle Infrastructure	Provide bicycle paths within project boundaries. Provide bicycle path linkages between residential and other land uses. Provide bicycle path linkages between residential and transit.	TBD 2 points 5 points	
Reduction Measure: Install EV Chargers			
Electric Vehicle Recharging	Level 1 110 volt AC chargers Per Charger Level 2 240 volt AC Fast Chargers Per Charger	2 points 5 points	

Reduction Measure: Traffic Flow Management Improvements			
	Signal Synchronization Signal connected to existing ITS	1 point 3 points	
Total Points Earned by Residential Project:			**108**

-Residential Section Ends-

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