Legado Specific Plan

GREENHOUSE GAS ANALYSIS

CITY OF MENIFEE

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LIST OF ABBREVIATED TERMS

(1)	Reference
AB 1493	Pavley Fuel Efficiency Standards
AB 32	Global Warming Solutions Act of 2006
APA	Administrative Procedure Act
AR5	IPCC's 5th Assessment Report
BAU	Business As Usual
C_2H_6	Ethane
CAA	Federal Clean Air Act
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGAPS	California Lawrence Berkeley National Laboratory GHG Analysis of Policies Spreadsheet
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resource Board
CAT	Climate Action Team
CBSC	California Building Standards Commission
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
COP	Conference of Parties
CPUC	California Public Utilities Commission
DFW	Department of Fish and Wildlife
EPA	Environmental Protection Agency
EPS	Emission Performance Standard
FED	Functional Equivalent Document
F_6S	Sulfur Hexafluoride
GCC	Global Climate Change
GHGA	Greenhouse Gas Analysis
GPD	Gallons Per Day

GPY	Gallons Per Year
GWP	Global Warming Potential
HETs	High-Efficiency Toilets
HFC	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
LBNL	Lawrence Berkeley National Laboratory
LCA	Life-Cycle Analysis
LCFS	Low Carbon Fuel Standard
LOW-CI	Low-Carbon Intensity
MMs	Mitigation Measures
MPG	Miles Per Gallon
MPH	Miles Per Hour
$MMCO_2e$	Million Metric Tons of Carbon Dioxide equivalent
$MMTCO_2e$	Million Metric Ton of Carbon Dioxide Equivalent
MRR	Mandatory Reporting Rule
$MTCO_2e$	Metric Ton of Carbon Dioxide Equivalent
N_20	Nitrous Oxide
NEV	Neighborhood Electric Vehicle
NEWHALL	Center for Biological Diversity v. Department of Fish and Wildlife
NHTSA	National Highway Traffic Safety Administration
NIOSH	National Institute for Occupational Safety and Health
NO_X	Oxides of Nitrogen
PFC	Perfluorocarbons
PM_{10}	Particulate Matter 10 microns in diameter or less
$PM_{2.5}$	Particulate Matter 2.5 microns in diameter or less
PPH	Persons Per Household
PPM	Parts Per Million
Project	Legado Specific Plan
PV	Photovoltaic
RCTC	Riverside County Transportation Commission
RTA	Riverside Transit Agency
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SAR	Second Assessment Report
SB	Senate Bill
SB 32	Senate Bill 32
SB 375	Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies
SB 1368	Statewide Retail Provider Emissions Performance Standards

SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SF_6	Sulfur Hexafluoride
SLPS	Short-Lived Climate Pollutant Strategy
WRCOG	Western Riverside Council of Governments
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile Organic Compounds
ZE/NZE	Zero- and Near-Zero-Emission

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EXECUTIVE SUMMARY

ES.1 SUMMARY OF FINDINGS

The results of this *Legado Specific Plan Air Quality Impact Analysis* are 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 each potential greenhouse gas (GHG) impact under CEQA before and after any required mitigation measures described below.

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 GHG emission that would result in a significant impact on the environment.	3.7	*Potentially Significant*	*Significant and Unavoidable*
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 GHGs.	3.7	*Potentially Significant*	*Significant and Unavoidable*

ES.2 REGULATORY REQUIREMENTS

The Project would be required to comply with regulations imposed by the State of California and the South Coast Air Quality Management District (SCAQMD) aimed at the reduction of air pollutant emissions. Those that are directly and indirectly applicable to the Project and that would assist in the reduction of GHG emissions include:

- Global Warming Solutions Act of 2006 (AB 32) (2).
- Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies (SB 375) (3).
- Pavley Fuel Efficiency Standards (AB1493). 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 (AB1881). 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 percent 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).

Promulgated regulations that will affect the Project's emissions are accounted for in the Project's GHG calculations provided in this report. In particular, the Pavley Standards, Low Carbon Fuel Standards, and Renewable Portfolio Standards (RPS) will be in effect for the AB 32 target year of 2020, and therefore are accounted for in the Project's emission calculations.

ES.3 PROJECT DESIGN FEATURES

The Project Design Feature (PDF) measures listed below (or equivalent language) shall appear on all Project grading plans, Energy-saving and sustainable design features and operational programs would be incorporated into all facilities developed pursuant to the Project. Notably, the Project would comply with the California Green Building Standards Code (CALGreen; California Code of Regulations (CCR), Title 24, Part 11) as implemented by the City of Menifee. The Project also incorporates and expresses the following design features and attributes promoting energy efficiency and sustainability. Because these features/attributes are integral to the Project, they are not considered to be mitigation measures.

- Pedestrian connections would be constructed at selected roads within the Project, providing pedestrian access to the various uses and activity centers within the Project. Facilitating pedestrian access encourages people to walk instead of drive. The Project would not impose barriers to pedestrian access and interconnectivity. Furthermore, the mix of uses within the Specific Plan as proposed by the Project acts to reduce travel distances and regional vehicle miles traveled (VMT) by consolidating trips and reducing requirements for multiple trips.

- The Project will create local "light" vehicle networks, such as neighborhood electric vehicle (NEV) networks. NEVs offer an alternative to traditional vehicle trips and can legally be used on roadways with speed limits of 35 miles per hour (MPH) or less (unless specifically restricted). To create an NEV network, the Project will implement the necessary infrastructure, including NEV parking, charging facilities, striping, signage and educational tools.

- As per information provided by the Project Applicant, the Project is required to comply with SCAQMD Rule 445, which prohibits the use of wood burning stoves and fireplaces in new development.

- Three electric vehicle charging stations will be provided.
- Applicant must design and construct the roof of the buildings to accommodate maximally sized photovoltaic (PV) solar arrays taking into consideration limitations imposed by other rooftop equipment, roof warranties, building and fire code requirements, and other physical or legal limitations. Applicant must develop each Project building with the

necessary electrical system and other infrastructure to accommodate maximally sized PV arrays in the future. The electrical system and infrastructure must be clearly labeled with noticeable and permanent signage which informs future tenant/purchasers of the existence of this infrastructure.

ES.4 CITY OF MENIFEE GENERAL PLAN OPEN SPACE AND CONSERVATION ELEMENT

Policy/Action	Policy/Implementation Action Description	Project Consistency
Action OSC59	Evaluate the existing transportation network to identify areas where mobile source pollution can be reduced by making vehicular movement more efficient. Revise the transportation network as necessary. Possible improvements include: installation of dedicated left and right turn lanes, construction of roundabouts, development of Intelligent Transportation systems such as synchronized signal timing, and adaptive traffic control systems, removal of unwarranted stop signs and construction of new and improved freeway on- and off-ramps.	Not Applicable.
Action OSC72	Set and monitor performance goals and/or VMT reduction targets that are consistent with the targets set by Southern California Association of Governments (SCAG) Sustainable Communities Strategy and Regional Transportation Plan and Western Riverside Council of Governments (WRCOG) Climate Action Plan (CAP).	Not Applicable.
Action OSC73	Work with Riverside Transit Agency (RTA), and the Riverside County Transportation Commission (RCTC) to evaluate options to add transit to increase service in Menifee. Improvements include supporting the implementation of a regional Bus Rapid Transit system in Western Riverside County (with a stop in the City of Menifee) and expanded service or a dedicated shuttle to connect Sun City Core to the Menifee Valley Medical Center. Partner with RTA to increase the frequency and coverage of buses connecting Menifee to other cities and the nearby existing and proposed rail stations. Possible grant funding sources should be considered in the evaluation.	Not Applicable.
Action OSC75	Create a program to incentivize new and existing commercial, industrial, public, school and medical facilities/developments to install shared vehicle parking, carpool parking, additional bike racks, and bus stop shelters. Components of the plan could include reduced permit fees, expedited processing, reduced parking requirements, etc.	Not Applicable.

Policy/Action	Policy/Implementation Action Description	Project Consistency
Action OSC76	Design and implement a public outreach campaign to reduce vehicle miles traveled within the City. Campaign components can include a ride sharing board at City Hall and an on-line version through the City website, promotion of RTA's schedule, passes, and programs, the City's Bicycle Master Plan when Complete, as well as electric vehicles and their routes/street network.	Not Applicable.

ES.5 MITIGATION MEASURES

MM GHG-1

To reduce water demands and associated energy use, development proposals within the Project site would be required to implement a Water Conservation Strategy and demonstrate a minimum 20% reduction in outdoor water usage when compared to baseline water demand (total expected water demand without implementation of the Water Conservation Strategy). This water reduction will be applied to both the residential and retail components of the proposed Project. Development proposals within the Project site would also be required to implement the following:

- Landscaping palette emphasizing drought-tolerant plants consistent with provisions of the City of Menifee requirements;
- Use of water-efficient irrigation techniques consistent with City of Menifee requirements;

MM GHG-2

To reduce water consumption and the associated energy-usage, the Project will be designed to comply with the mandatory reductions in indoor water usage contained in the incumbent CalGreen Code (12) and any mandated reduction in outdoor water usage contained in the City's water efficient landscape requirements. Additionally, the Project shall implement the following:

- U.S. Environmental Protection Agency (EPA) Certified WaterSense labeled or equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.

MM GHG-3

Prior to the issuance of building permits, the Project applicant shall ensure that the Project is designed to achieve efficiency equal to or exceeding then incumbent (2019 or later) California Building Code Title 24 requirements. As per information provided by the Project Applicant, the Project will be designed to achieve 53% efficiency.

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1 INTRODUCTION

This report presents the results of the greenhouse gas analysis (GHGA) prepared by Urban Crossroads, Inc., for the proposed Legado Specific Plan (Project).The purpose of this GHGA is to evaluate Project-related construction and operational emissions and determine the level of GHG impacts as a result of constructing and operating the proposed Project.

1.1 SITE LOCATION

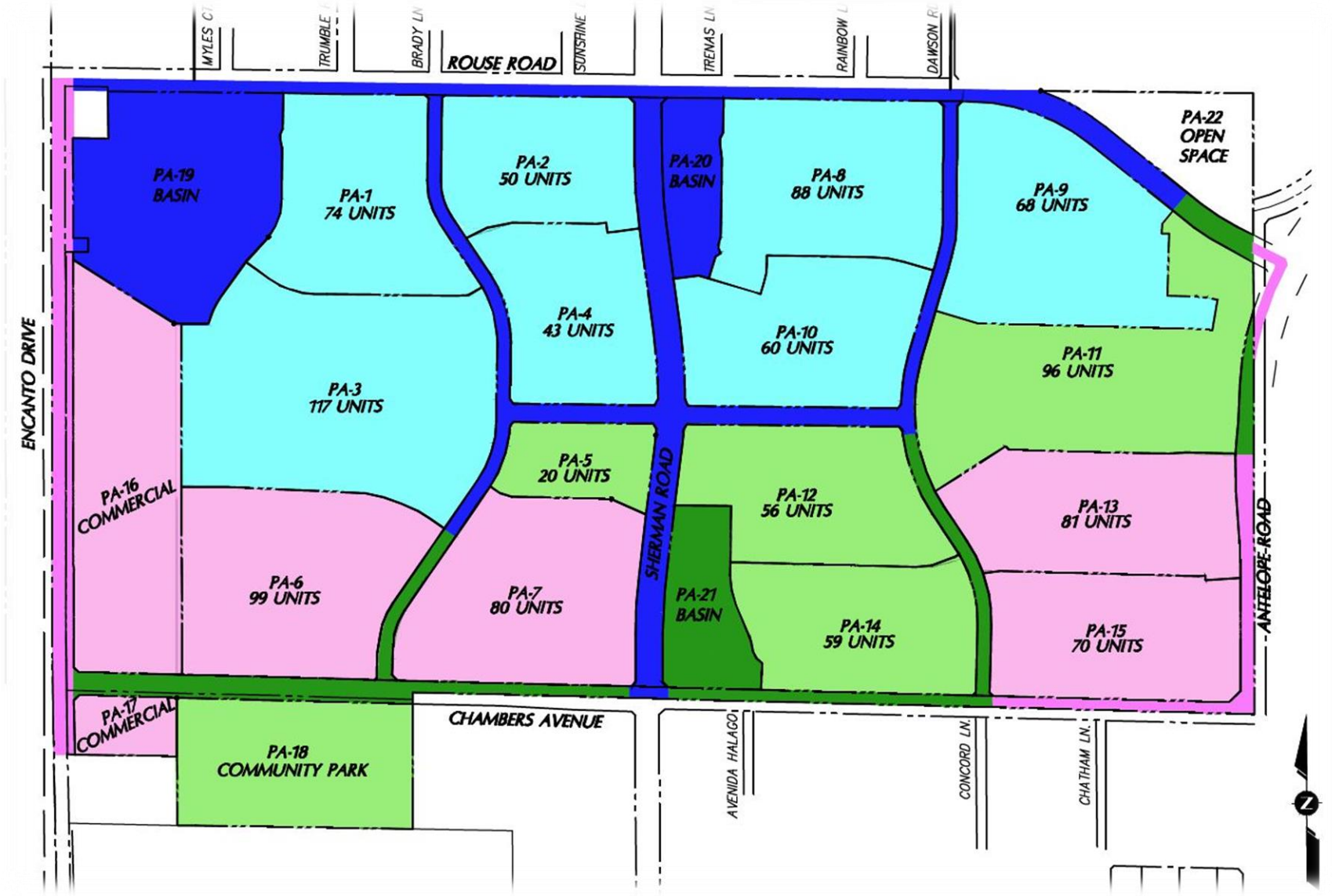
The proposed Legado Specific Plan site is generally located north of Chambers Avenue between Encanto Drive and Antelope Road in the City of Menifee, as shown on Exhibit 1-A. The Project site is currently vacant. Existing residential uses in the Project study area are located north, south, east and west of the Project site. The Evans Brown Mortuary is located adjacent to the Project's northwestern site boundaries, and the Life Care Center is located adjacent to the southwestern Project site boundaries. The Hans Christensen Middle School is located south of the Project site across Chambers Avenue. Interstate 215 (I-215) is located roughly 100 feet west of the Project site. The Project site is located approximately 2.5 miles southeast of the Perris Valley Airport, and over 9 miles southeast of the March Air Reserve Base/Inland Port Airport (MARB/IPA). The City of Menifee General Plan Land Use Map designates the 331.0-acre Project site as "Fleming Ranch Specific Plan," although no Specific Plan has been adopted for the site. The City's 2010 General Plan EIR Land Use designation for the site, proposed a buildout assumption that includes 1,558 dwelling units (DU), 71,176 square feet (s.f.) of commercial retail, and 160,300 of nonretail use. Thus, allowable land uses per the site's existing General Plan land use designation would be established as part of the proposed Legado Specific Plan.

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of up to 1,061 single family detached residential DUs, up to 225,000 s.f. of commercial use, up to 10,000 s.f. of recreational community center, and up to 11.23 acres of sports park use. For the purposes of this analysis, the Project is anticipated to be developed in three phases with a projected Opening Year of 2025. Phase 1 (2020) of the proposed Project is anticipated to include the development of 500 single family detached residential dwelling units and Phase 2 (2023) of the proposed Project is anticipated to include an additional 231 single family detached residential dwelling units for a total of 731 dwelling unit, up to 10,000 square feet of recreational community center, and up to 11.23 acres of sports park use. Project Buildout (2025) is anticipated to include up to an additional 330 single family detached residential dwelling units for a total of 1,061 dwelling units, up to 225,000 square feet of commercial use, up to 10,000 square feet of recreational community center, and up to 11.23 acres of sports park use.

EXHIBIT 1-A: LOCATION MAP

EXHIBIT 1-B: SITE PLAN



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2 BACKGROUND

2.1 INTRODUCTION TO GLOBAL CLIMATE CHANGE

Global Climate Change (GCC) is defined as the change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms. GCC is currently one of the most controversial environmental issues in the United States, and much debate exists within the scientific community about whether or not GCC is occurring naturally or as a result of human activity. Some data suggests that GCC has occurred in the past over the course of thousands or millions of years. These historical changes to the earth's climate have occurred naturally without human influence, as in the case of an ice age. However, many scientists believe that the climate shift taking place since the industrial revolution (1900) 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, methane, nitrous oxide, and fluorinated gases. Many 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 (carbon dioxide), N_2O (nitrous oxide), CH_4 (methane), hydrofluorocarbons (HFC), perfluorocarbons (PFC) and sulfur hexafluoride (F_6S). 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 (human) activity. Without the natural GHG effect, the earth's average temperature would be approximately 61° 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 GREENHOUSE GASES

For the purposes of this analysis, emissions of CO_2, CH_4, and NO_2 were evaluated (see Table 3-1 later in this report) because these gasses 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.

Water Vapor: Water vapor (H_20) 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. A 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 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) (13).

There are no human health effects from water vapor itself; however, when some pollutants come in contact with water vapor, they can dissolve, and the water vapor can then act as a pollutant-carrying agent. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves.

Carbon Dioxide: CO_2 is an odorless and colorless GHG. Outdoor levels of carbon dioxide are not high enough to result in negative health effects. Carbon dioxide 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. Carbon dioxide 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).

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 percent. Left unchecked, the concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources (15).

Methane: CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than carbon dioxide and its lifetime in the atmosphere is brief (10-12 years), compared to other GHGs. Exposure to high levels of methane can cause asphyxiation, loss of consciousness, headache and dizziness, nausea and vomiting, weakness, loss of coordination, and an increased breathing rate

Methane 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 methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning (16).

Nitrous Oxide: N_2O, also known as laughing gas, is a colorless GHG. Nitrous oxide 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).

Concentrations of nitrous oxide also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb). Nitrous oxide 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 used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. Nitrous oxide 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 are gases formed synthetically by replacing all hydrogen atoms in methane 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 are no longer being used; therefore, it is not likely that health effects would be experienced. Nonetheless, 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.

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).

Hydrofluorocarbons: 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. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CH_2FCF), and HFC-152a (CH_3CF_2). Prior to 1990, the only significant emissions were of HFC-23. HFC-134a emissions are increasing due to its use as a refrigerant. No health effects are known to result from exposure to HFCs, which are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons: 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 U.S. EPA estimates that concentrations of CF_4 in the atmosphere are over 70 ppt.

No health effects are known to result from exposure to PFCs. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur Hexafluoride: Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest global warming potential (GWP) of any gas evaluated (23,900) (19). The U.S. EPA indicates that concentrations in the 1990s were about 4 ppt. In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing.

Sulfur hexafluoride 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.

Nitrogen Trifluoride: Nitrogen trifluoride (NF_3) is a colorless gas with a distinctly moldy odor. NF_3 is used in industrial processes and is produced in the manufacture of semiconductors and LCD (Liquid Crystal Display) panels, and types of solar panels and chemical lasers. The World Resources Institute (WRI) indicates that NF_3 has a 100-year GWP of 17,200 (20).

Long-term or repeated exposure may affect the liver and kidneys and may cause fluorosis (21).

Carbon Dioxide Equivalent: Carbon dioxide 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 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. Carbon dioxide is utilized as the reference gas for GWP, and thus has a GWP of 1.

The atmospheric lifetime and GWP of selected GHGs are summarized at Table 2-1. As shown in the table below, GWP for the Second Assessment Report (SAR), the Intergovernmental Panel on Climate Change (IPCC)'s scientific and socio-economic assessment on climate change, range from 1 for carbon dioxide to 23,900 for sulfur hexafluoride and GWP for the IPCC's 5th Assessment Report (AR5) range from 1 for CO_2 to 23,500 for SF_6 (22).

TABLE 2-1: GLOBAL WARMING POTENTIAL AND ATMOSPHERIC LIFETIME OF SELECT GHGS

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)	
		Second Assessment	5th Assessment Report
CO_2	See*	1	1
CH_4	12 .4	21	28
N_2O	121	310	265
HFC-23	222	11,700	12,400
HFC-134a	13.4	1,300	1,300
HFC-152a	1.5	140	138
SF_6	3,200	23,900	23,500

*As per Appendix 8.A. of IPCC's 5th Assessment Report (AR5), no single lifetime can be given.
Source: Table 2.14 of the IPCC Fourth Assessment Report, 2007

2.4 GREENHOUSE GAS EMISSIONS INVENTORIES

Global

Worldwide anthropogenic (human) GHG emissions are tracked by the IPCC for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I). Human GHG emissions data for Annex I nations are available through 2017. Based on the latest available data, the sum of these emissions totaled approximately 29,216,501 Gg CO_2e[1] (23) (24). The GHG emissions in more recent years may differ from the inventories presented in Table 2-2; however, the data is representative of currently available inventory data.

United States

As noted in Table 2-2, the United States, as a single country, was the number two producer of GHG emissions in 2017 (25).

[1] The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2017 data, the UNFCCC data for the most recent year were used. United Nations Framework Convention on Climate Change, "Annex I Parties – GHG total without LULUCF," The most recent GHG emissions for China and India are from 2014.

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

Emitting Countries	GHG Emissions (Gg CO_2e)
China	11,911,710
United States	6,456,718
European Union (28-member countries)	4,323,163
India	3,079,810
Russian Federation	2,155,470
Japan	1,289,630
Total	**29,216,501**

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 (26). CARB compiles GHG inventories for the State of California. Based upon the 2018 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2016 GHG emissions inventory, California emitted 429.4 $MMTCO_2e$ including emissions resulting from imported electrical power in 2015 (27).

2.5 EFFECTS OF CLIMATE CHANGE IN CALIFORNIA

Public Health

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

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

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

Water Resources

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

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

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

Agriculture

Increased temperatures could cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. First, California farmers could possibly lose as much as 25 percent of the water supply needed. Although higher CO_2 levels can stimulate plant production and increase plant water-use efficiency, California's farmers could face greater water demand for crops and a less reliable water supply as temperatures rise. Crop growth and development could change, as could the intensity and frequency of pest and disease outbreaks. Rising temperatures could aggravate O_3 pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures could worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts.

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

Forests and Landscapes

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

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

Rising Sea Levels

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

2.6 HUMAN HEALTH EFFECTS

The potential health effects related directly to the emissions of carbon dioxide, methane, and nitrous oxide as they relate to development projects such as the proposed Project are still being debated in the scientific community. Their cumulative effects to global climate change 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 (28). Exhibit 2-A presents the potential impacts of global warming (29).

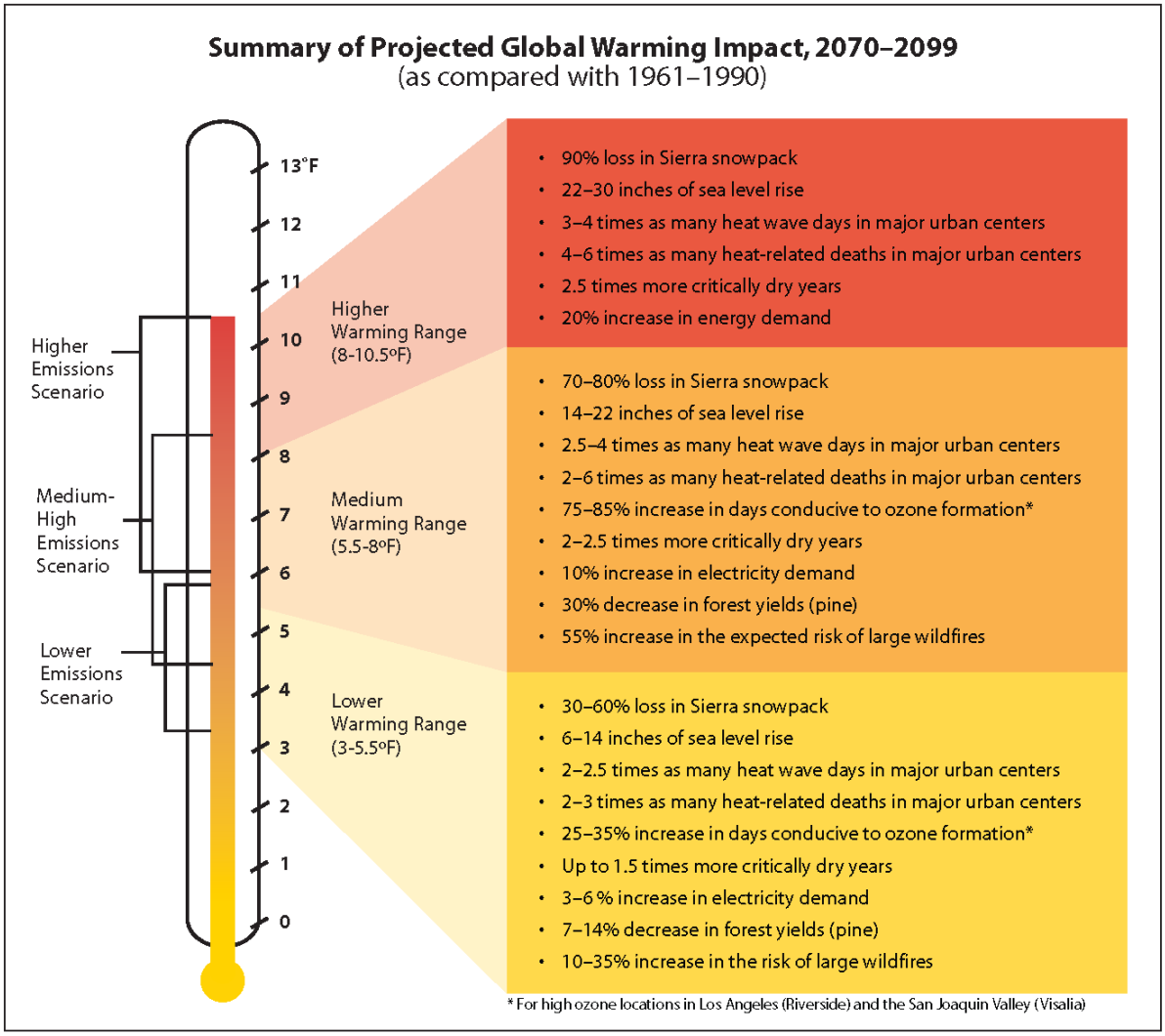
Specific health effects associated with directly emitted GHG emissions are as follows:

Water Vapor: 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.

Carbon Dioxide: According to the National Institute for Occupational Safety and Health (NIOSH) high concentrations of carbon dioxide 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 carbon dioxide in the earth's atmosphere are estimated to be approximately 370 parts per million (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 (30).

EXHIBIT 2-A: SUMMARY OF PROJECTED GLOBAL WARMING IMPACT



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

Methane: Methane is extremely reactive with oxidizers, halogens, and other halogen-containing compounds. Methane is also an asphyxiant and may displace oxygen in an enclosed space.

Nitrous Oxide: Nitrous Oxide is often referred to as laughing gas; it is a colorless GHG. The health effects associated with exposure to elevated concentrations of nitrous oxide include dizziness,

euphoria, slight hallucinations, and in extreme cases of elevated concentrations nitrous oxide can also cause brain damage (31).

Fluorinated Gases: High concentrations of fluorinated gases can also result in adverse health effects such as asphyxiation, dizziness, headache, cardiovascular disease, cardiac disorders, and in extreme cases, increased mortality.

Aerosols: The health effects of aerosols are similar to that of other fine particulate matter. Thus, aerosols can cause elevated respiratory and cardiovascular diseases as well as increased mortality (32).

2.7 REGULATORY SETTING

INTERNATIONAL

Climate change is a global issue involving GHG emissions from all around the world; therefore, countries such as the ones discussed below have made an effort to reduce GHGs.

Intergovernmental Panel on Climate Change. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations Framework Convention on Climate Change (Convention). On March 21, 1994, the U.S. joined a number of countries around the world in signing the Convention. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

International Climate Change Treaties. The Kyoto Protocol is an international agreement linked to the Convention. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at an average of five percent against 1990 levels over the five-year period 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. No binding agreement was reached in Copenhagen; however, the Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2°C above pre-industrial levels, subject to a review in 2015. The UN Climate Change Committee held additional meetings in Durban, South Africa in

November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining consensus among participants on individual climate change issues.

On September 23, 2014 more than 100 Heads of State and Government and leaders from the private sector and civil society met at the Climate Summit in New York hosted by the United Nations. At the Summit, heads of government, business and civil society announced actions in areas that would have the greatest impact on reducing emissions, including climate finance, energy, transport, industry, agriculture, cities, forests, and building resilience.

Parties to the U.N. Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12, 2015 in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating a four-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen them in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts and undergo international review.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st session of the UNFCCC Conference of the Parties (COP) 21. Together, the Paris Agreement and the accompanying COP decision:

- Reaffirm the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees;
- Establish binding commitments by all parties to make "nationally determined contributions" (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and "progress made in implementing and achieving" their NDCs, and to undergo international review;
- Commit all countries to submit new NDCs every five years, with the clear expectation that they will "represent a progression" beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing $100 billion a year in support by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
- Extend a mechanism to address "loss and damage" resulting from climate change, which explicitly will not "involve or provide a basis for any liability or compensation;"
- Require parties engaging in international emissions trading to avoid "double counting;" and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted toward another country's NDC (C2ES 2015a) (33).

On June 2, 2017 President Donald Trump announced his intention to withdraw from the Paris Agreement. It should be noted that under the terms of the agreement, the United Sates cannot

formally announce its resignation until November 4, 2019. Subsequently, withdrawal would be effective one year after notification in 2020.

NATIONAL

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 Supreme Court found that four GHGs, including carbon dioxide, are air pollutants subject to regulation under Section 202(a)(1) of the Clean Air Act. 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 Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—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. Supreme Court declined to review an Appeals Court ruling that upheld the EPA Administrator's findings (34).

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 Safety Administration 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 passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards would cut carbon dioxide 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

National Highway Safety Administration 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 (EPA 2012c). The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and medium duty 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 miles per gallon (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 percent reduction in carbon dioxide emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks 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-percent reduction for gasoline vehicles and a 15 percent reduction for diesel vehicles by the 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10 percent reduction in fuel consumption and carbon dioxide emissions from the 2014 to 2018 model years.

On April 2, 2018, the USEPA signed the Mid-term Evaluation Final Determination, which finds that the model year 2022-2025 GHG standards are not appropriate and should be revised (35). This Final Determination serves to initiate a notice to further consider appropriate standards for model year 2022-2025 light-duty vehicles. On August 24, 2018, the USEPA and NHTSA published a proposal to freeze the model year 2020 standards through model year 2026 and to revoke California's waiver under the Clean Air Act to establish more stringent standards (36).

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 or more per year 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 Clean Air Act 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 Clean Air Act, 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 percent 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.

Standards of Performance for GHG Emissions for New Stationary Sources: Electric Utility Generating Units. As required by a settlement agreement, the EPA proposed new performance standards for emissions of carbon dioxide for new, affected, fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts would be required to meet an output-based standard of 1,000 pounds of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology. It should be noted that on February 9, 2016 the U.S. Supreme Court issued a stay of this regulation pending litigation. Additionally, the current EPA Administrator has also signed a measure to repeal the Clean Power Plan, including the CO_2 standards.

Cap and Trade. Cap and trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. Successful examples in the U.S. include the Acid Rain Program and the NO_X Budget Trading Program and Clean Air Interstate Rule in the northeast. There is no federal GHG cap and trade program currently; however, some states have joined to create initiatives to provide a mechanism for cap and trade.

The Regional GHG Initiative is an effort to reduce GHGs among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners were originally California, British Columbia, Manitoba, Ontario, and Quebec. However, Manitoba and Ontario are not currently participating. California linked with Quebec's cap and trade system January 1, 2014, and joint offset auctions took place in 2015 (C2ES 2015).

SmartWay Program. The SmartWay Program is a public-private initiative between the EPA, large and small trucking companies, rail carriers, logistics companies, commercial manufacturers, retailers, and other federal and state agencies. Its purpose is to improve fuel efficiency and the

environmental performance (reduction of both GHG emissions and air pollution) of the goods movement supply chains. SmartWay is comprised of four components (EPA 2014):

1. SmartWay Transport Partnership: A partnership in which freight carriers and shippers commit to benchmark operations, track fuel consumption, and improve performance annually.
2. SmartWay Technology Program: A testing, verification, and designation program to help freight companies identify equipment, technologies, and strategies that save fuel and lower emissions.
3. SmartWay Vehicles: A program that ranks light-duty cars and small trucks and identifies superior environmental performers with the SmartWay logo.
4. SmartWay International Interests: Guidance and resources for countries seeking to develop freight sustainability programs modeled after SmartWay.

SmartWay effectively refers to requirements geared towards reducing fuel consumption. Most large trucking fleets driving newer vehicles are compliant with SmartWay design requirements. Moreover, over time, all heavy-duty trucks will have to comply with the ARB GHG Regulation that is designed with the SmartWay Program in mind, to reduce GHG emissions by making them more fuel-efficient. For instance, in 2015, 53 foot or longer dry vans or refrigerated trailers equipped with a combination of SmartWay-verified low-rolling resistance tires and SmartWay-verified aerodynamic devices would obtain a total of 10 percent or more fuel savings over traditional trailers.

Through the SmartWay Technology Program, the EPA has evaluated the fuel saving benefits of various devices through grants, cooperative agreements, emissions and fuel economy testing, demonstration projects and technical literature review. As a result, the EPA has determined the following types of technologies provide fuel saving and/or emission reducing benefits when used properly in their designed applications, and has verified certain products:

- Idle reduction technologies – less idling of the engine when it is not needed would reduce fuel consumption.
- Aerodynamic technologies minimize drag and improve airflow over the entire tractor-trailer vehicle. Aerodynamic technologies include gap fairings that reduce turbulence between the tractor and trailer, side skirts that minimize wind under the trailer, and rear fairings that reduce turbulence and pressure drop at the rear of the trailer.
- Low rolling resistance tires can roll longer without slowing down, thereby reducing the amount of fuel used. Rolling resistance (or rolling friction or rolling drag) is the force resisting the motion when a tire rolls on a surface. The wheel will eventually slow down because of this resistance.
- Retrofit technologies include things such as diesel particulate filters, emissions upgrades (to a higher tier), etc., which would reduce emissions.
- Federal excise tax exemptions.

CALIFORNIA

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 the landmark Assembly Bill (AB 32) California Global Warming Solutions Act of 2006 was specifically enacted to

address GHG emissions. 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. This section describes the major provisions of the legislation.

AB 32. The California State Legislature enacted AB 32, which requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "GHGs" as defined under AB 32 include carbon dioxide, methane, N_2O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The California Air Resources Board (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.*

ARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (ARB 2007). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a "business as usual" (BAU) scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations (ARB 2008). At that level, a 28.4 percent reduction was required to achieve the 427 million $MTCO_2e$ 1990 inventory. In October 2010, ARB prepared an updated 2020 forecast to account for the recession and slower forecasted growth. The forecasted inventory without the benefits of adopted regulation is now estimated at 545 million $MTCO_2e$. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels (ARB 2010).

Progress in Achieving AB 32 Targets and Remaining Reductions Required

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is shown in updated emission inventories prepared by ARB for 2000 through 2012 (ARB 2014a). The State has achieved the Executive Order S-3-05 target for 2010 of reducing GHG emissions to 2000 levels. As shown below, the 2010 emission inventory achieved this target.

- 1990: 427 million $MTCO_2e$ (AB 32 2020 target)
- 2000: 463 million $MTCO_2e$ (an average 8 percent reduction needed to achieve 1990 base)
- 2010: 450 million $MTCO_2e$ (an average 5 percent reduction needed to achieve 1990 base)

ARB has also made substantial progress in achieving its goal of achieving 1990 emissions levels by 2020. As described earlier in this section, ARB revised the 2020 BAU inventory forecast to account for new lower growth projections, which resulted in a new lower reduction from BAU to

achieve the 1990 base. The previous reduction from 2020 BAU needed to achieve 1990 levels was 28.4 percent and the latest reduction from 2020 BAU is 21.7 percent.

- 2020: 545 million $MTCO_2e$ BAU (an average 21.7 percent reduction from BAU needed to achieve 1990 base)

ARB Scoping Plan. ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32 (ARB 2008). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

The ARB approved the First Update to the Scoping Plan (Update) on May 22, 2014. The Update identifies the next steps for California's climate change strategy. The Update shows how California continues on its path to meet the near-term 2020 GHG limit, but also sets a path toward long-term, deep GHG emission reductions. The report establishes a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. The Update identifies progress made to meet the near-term objectives of AB 32 and defines California's climate change priorities and activities for the next several years. The Update does not set new targets for the State but describes a path that would achieve the long term 2050 goal of Executive Order S-05-03 for emissions to decline to 80 percent below 1990 levels by 2050 (ARB 2014).

Forecasting the amount of emissions that would occur in 2020 if no actions are taken was necessary to assess the amount of reductions California must achieve to return to the 1990 emissions level by 2020 as required by AB 32. The no-action scenario is known as "business-as-usual" or BAU. The ARB originally defined the BAU scenario as emissions in the absence of any GHG emission reduction measures discussed in the Scoping Plan.

As part of CEQA compliance for the Scoping Plan, ARB prepared a Supplemental Functional Equivalent Document (FED) in 2011. The FED included an updated 2020 BAU emissions inventory projection based on current economic forecasts (i.e., as influenced by the economic downturn) and emission reduction measures already in place, replacing its prior 2020 BAU emissions inventory. ARB staff derived the updated emissions estimates by projecting emissions growth, by sector, from the state's average emissions from 2006–2008. The new BAU estimate includes emission reductions for the million-solar-roofs program, the AB 1493 motor vehicle GHG emission standards, and the Low Carbon Fuels Standard. In addition, ARB factored into the 2020 BAU inventory emissions reductions associated with 33 percent RPS for electricity generation. The updated BAU estimate of 507 $MMTCO_2e$ by 2020 requires a reduction of 80 $MMTCO_2e$, or a 16 percent reduction below the estimated BAU levels to return to 1990 levels (i.e., 427 $MMTCO_2e$) by 2020.

In order to provide a BAU reduction that is consistent with the original definition in the Scoping Plan and with threshold definitions used in thresholds adopted by lead agencies for CEQA purposes and many climate action plans, the updated inventory without regulations was also included in the Supplemental FED. The ARB 2020 BAU projection for GHG emissions in California was originally estimated to be 596 $MMTCO_2e$. The updated ARB 2020 BAU projection in the Supplemental FED is 545 $MMTCO_2e$. Considering the updated BAU estimate of 545 $MMTCO_2e$ by 2020, ARB estimates a 21.7 percent reduction below the estimated statewide BAU levels is necessary to return to 1990 emission levels (i.e., 427 $MMTCO_2e$) by 2020, instead of the approximate 28.4 percent BAU reduction previously reported under the original Climate Change Scoping Plan (2008).

2017 Climate Change Scoping Plan Update

In November 2017, ARB released the final 2017 Scoping Plan Update, which identifies the State's post-2020 reduction strategy. The 2017 Scoping Plan Update reflects the 2030 target of a 40 percent 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 Low Carbon Fuel Standard, and much cleaner cars, trucks and freight movement, utilizing cleaner, renewable energy, and strategies to reduce methane emissions from agricultural and other wastes.

The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.

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 (methane, 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 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZEV buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementing SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent 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 ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing methane and hydroflurocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- 20 percent 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 2017 Scoping Plan 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 2017 Scoping Plan 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 $MTCO_2e$ 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 climate action plan or other plan to reduce GHG emissions is appropriate.

According to research conducted by the Lawrence Berkeley National Laboratory and supported by ARB, California, under its existing and proposed GHG reduction policies, is on track to meet the 2020 reduction targets under AB 32 and could achieve the 2030 goals under SB 32. The research utilized a new, validated model known as the California Lawrence Berkeley National Laboratory (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 GHG emissions through 2020 could range from 317 to 415 $MTCO_2e$ per year, "indicating that existing state policies will likely allow California to meet its target [of 2020 levels under AB 32]." CALGAPS also showed that by 2030, emissions could range from 211 to 428 $MTCO_2e$ per year, indicating that "even if all modeled policies are not implemented, reductions could be sufficient to reduce emissions 40 percent 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 percent reduction goal by 2050, various combinations of policies could allow California's cumulative emissions to remain very low through 2050 (37) (38).

Senate Bill 32. On September 8, 2016, Governor Jerry Brown signed the Senate Bill (SB) 32 and its companion bill, Assembly Bill (AB) 197. SB 32 requires the state to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030, a reduction target that was first introduced in Executive Order B-30-15. The new legislation builds upon the AB 32 goal of 1990 levels by 2020 and provides an intermediate goal to achieving S-3-05, which sets a statewide GHG reduction target of 80 percent below 1990 levels by 2050. AB 197 creates a legislative committee to oversee regulators to ensure that ARB not only responds to the Governor, but also the Legislature (11).

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 ARB, a cap-and-trade program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by the year 2020 and ultimately achieving an 80 percent reduction from 1990 levels by 2050. 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.

ARB adopted a California Cap-and-Trade Program pursuant to its authority under AB 32. See Title 17 of the California Code of Regulations (CCR) §§ 95800 to 96023). The Cap-and-Trade Program is designed to reduce GHG emissions from major sources (deemed "covered entities") by setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve AB 32's emission-reduction mandate of returning to 1990 levels of emissions by 2020. 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 $MTCO_2e$ per year must comply with the Cap-and-Trade Program. Triggering of the 25.000 $MTCO_2e$ per year "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 (MRR)).

Under the Cap-and-Trade Program, ARB 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" (30) for each $MTCO_2e$

of GHG they emit. There also are requirements to surrender compliance instruments covering 30 percent of the prior year's compliance obligation by November of each year. For example, in November 2014, a covered entity was required to submit compliance instruments to cover 30 percent of its 2013 GHG emissions.

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. 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 ARB in the First Update:

> *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 (ARB 2014).*

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate:

> *The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level, GHG emissions reductions. Also, due to the regulatory architecture adopted by ARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures (ARB 2014).*

As of January 1, 2015, the Cap-and-Trade Program covered approximately 85 percent of California's GHG emissions. 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. While the Cap-and-Trade Program technically covered fuel suppliers as early as 2012, they did not have a compliance obligation (i.e., they were not fully regulated) until 2015. The Cap-and-Trade Program covers the GHG emissions associated with the combustion of transportation fuels in California, whether refined in-state or imported. The point of regulation for transportation fuels is when they are "supplied" (i.e., delivered into commerce). Accordingly, as with stationary source GHG emissions and GHG emissions attributable to electricity use, virtually all, if not all, of GHG emissions from CEQA projects associated with vehicle-miles traveled (VMT) are covered by the Cap-and-Trade Program (ARB 2015) (39).

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. "Capped" strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the Program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. "Uncapped" strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions.[3]

SB 375 - the Sustainable Communities and Climate Protection Act of 2008. Passing the Senate on August 30, 2008, Senate Bill (SB) 375 was signed by the Governor on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent 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.

[3] On March 17, 2011, the San Francisco Superior Court issued a final decision in *Association of Irritated Residents v. California Air Resources Board* (Case No. CPF-09-509562). While the Court upheld the validity of the ARB Scoping Plan for the implementation of AB 32, the Court enjoined ARB from further rulemaking under AB 32 until ARB amends its CEQA environmental review of the Scoping Plan to address the flaws identified by the Court. On May 23, 2011, ARB filed an appeal. On June 24, 2011, the Court of Appeal granted ARB's petition staying the trail court's order pending consideration of the appeal. In the interest of informed decision-making, on June 13, 2011, ARB released the expanded alternatives analysis in a draft Supplement to the AB 32 Scoping Plan Functional Equivalent Document. The ARB Board approved the Scoping Plan and the CEQA document on August 24, 2011.

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 ARB 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.

AB 1493 Pavley Regulations and Fuel Efficiency Standards. California AB 1493, enacted on July 22, 2002, required ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the U.S. District Court for the District of Columbia in 2011.

The standards phase in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards will result in about a 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards will result in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.

The second phase of the implementation for the Pavley bill was incorporated into Amendments to the Low-Emission Vehicle Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car 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 will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The new rules will clean up gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles and hydrogen fuel cell cars. The package will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.

SB 350— Clean Energy and Pollution Reduction Act of 2015. In October 2015, the legislature approved, and the Governor signed SB 350, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Provisions for a 50 percent reduction in the use of petroleum statewide were removed from the Bill because of

opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly-owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electrify transmission markets and to improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States (California Leginfo 2015).

EXECUTIVE ORDERS RELATED TO GHG EMISSIONS

California's Executive Branch has taken several actions to reduce GHGs through the use of Executive Orders. Although not regulatory, they set the tone for the state and guide the actions of state agencies.

Executive Order B-55-18 and SB 100. Executive Order B-55-18 and SB 100. SB 100 and Executive Order B-55-18 were signed by Governor Brown on September 10, 2018. Under the existing RPS, 25 percent of retail sales are required to be from renewable sources by December 31, 2016, 33 percent by December 31, 2020, 40 percent by December 31, 2024, 45 percent by December 31, 2027, and 50 percent by December 31, 2030. SB 100 raises California's RPS requirement to 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. In addition to targets under AB 32 and SB32, Executive Order B-55-18 establishes a carbon neutrality goal for the state of California by 2045; and sets a goal to maintain net negative emissions thereafter. The Executive Order directs the California Natural Resources Agency, CalEPA, the Department of Food and Agriculture, and CARB to include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal.

Executive Order S-3-05. Former California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, 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 percent below 1990 levels.

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

Executive Order S-01-07 – Low Carbon Fuel Standard. The Governor signed Executive Order S-01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the Executive Order established a LCFS and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The Low Carbon Fuel Standard was challenged in the U.S. District Court in Fresno in 2011. The court's ruling issued on December 29, 2011, included a preliminary injunction against ARB's implementation of the rule. The Ninth Circuit Court of Appeals stayed the injunction on April 23, 2012, pending final ruling on appeal, allowing ARB to continue to implement and enforce the regulation. The Ninth Circuit Court's decision, filed September 18, 2013, vacated the preliminary injunction. In essence, the court held that Low Carbon Fuel Standards adopted by ARB were not in conflict with federal law. On August 8, 2013, the Fifth District Court of Appeal (California) ruled ARB failed to comply with CEQA and the Administrative Procedure Act (APA) when adopting regulations for Low Carbon Fuel Standards. In a partially published opinion, the Court of Appeal reversed the trial court's judgment and directed issuance of a writ of mandate setting aside Resolution 09-31 and two executive orders of ARB approving LCFS regulations promulgated to reduce GHG emissions. However, the court tailored its remedy to protect the public interest by allowing the LCFS regulations to remain operative while ARB complies with the procedural requirements it failed to satisfy.

To address the Court ruling, ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon intensity (low-CI) fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. On November 16, 2015 the Office of Administrative Law (OAL) approved the Final Rulemaking Package. The new LCFS regulation became effective on January 1, 2016.

Executive Order S-13-08. Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the Order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the ". . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." 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. On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The Order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050 and directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO_2 equivalent ($MMCO_2e$). The Order also requires the state's climate adaptation plan to be updated every three years, and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this Order is not legally enforceable for local governments and the private sector. Legislation that would update AB 32 to make post 2020 targets and requirements a mandate is in process in the State Legislature.

CALIFORNIA REGULATIONS AND BUILDING CODES

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

Title 20 Appliance Efficiency Standards. California Code of Regulations, 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 Energy Efficiency Standards and California Green Building Standards. California Code of Regulations 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 California Energy Commission (CEC) and will become effective on January 1, 2020. The 2019Title 24 standards are applicable to the Project.

California Code of Regulations, 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. CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2016 California Green Building Code Standards that became effective January 1, 2017. It should be noted that the CALGreen standards are currently in the process of being updated, but final rulemaking activity has not occurred, therefore at this time

the 2016 CalGreen standards are the currently adopted standards in effect. 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 percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. The State Building Code provides the minimum standard that buildings must meet in order to be certified for occupancy, which is generally enforced by the local building official. CALGreen requires:

- Short-term bicycle parking. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- Long-term bicycle parking. For new buildings with 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).
- Designated parking. Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- Recycling by Occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling (5.410.1).
- Construction waste. A minimum 65 percent diversion of construction and demolition waste from landfills, increasing voluntarily to 80 percent for new homes and commercial projects (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1 [residential]). All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).
- Wastewater reduction. Each building shall reduce the generation of wastewater by one of the following methods:
    - The installation of water-conserving fixtures (5.303.3) or
    - Using nonpotable water systems (5.303.4).
- Water use savings. 20 percent mandatory reduction of indoor water use with voluntary goal standards for 30, 35 and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- Water meters. Separate water meters for buildings in excess of 50,000 sf or buildings projected to consume more than 1,000 gallons per day (5.303.1).
- Irrigation efficiency. Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- Materials pollution control. Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard (5.404).
- Building commissioning. Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 sf to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

Model Water Efficient Landscape Ordinance. The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881, the Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the

Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected upon compliance with the ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed Department of Water Resources (DWR) to update the Ordinance through expedited regulation. The California Water Commission approved the revised Ordinance on July 15, 2015 effective December 15, 2015. New development projects that include landscape areas of 500 sf or more are subject to the Ordinance. The update requires:

- 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
- Reporting requirements for local agencies.

ARB Refrigerant Management Program. ARB adopted a regulation in 2009 to reduce refrigerant GHG emissions from stationary sources through refrigerant leak detection and monitoring, leak repair, system retirement and retrofitting, reporting and recordkeeping, and proper refrigerant cylinder use, sale, and disposal. The regulation is set forth in sections 95380 to 95398 of Title 17, California Code of Regulations. The rules implementing the regulation establish a limit on statewide GHG emissions from stationary facilities with refrigeration systems with more than 50 pounds of a high GWP refrigerant. The refrigerant management program is designed to (1) reduce emissions of high-GWP GHG refrigerants from leaky stationary, non-residential refrigeration equipment; (2) reduce emissions from the installation and servicing of refrigeration and air-conditioning appliances using high-GWP refrigerants; and (3) verify GHG emission reductions.

Tractor-Trailer GHG Regulation. The tractors and trailers subject to this regulation must either use EPA SmartWay certified tractors and trailers or retrofit their existing fleet with SmartWay verified technologies. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low rolling resistance tires. Sleeper cab tractors model year 2011 and later must be SmartWay certified. All other tractors must use SmartWay verified low rolling resistance tires. There are also requirements for trailers to have low rolling resistance tires and aerodynamic devices.

Phase I and 2 Heavy-Duty Vehicle GHG Standards. ARB has adopted a new regulation for GHG emissions from heavy-duty trucks and engines sold in California. It establishes GHG emission limits on truck and engine manufacturers and harmonizes with the U.S. EPA rule for new trucks and engines nationally. Existing heavy-duty vehicle regulations in California include engine criteria emission standards, tractor-trailer GHG requirements to implement SmartWay strategies (i.e., the Heavy-Duty Tractor-Trailer Greenhouse Gas Regulation), and in-use fleet retrofit requirements such as the Truck and Bus Regulation. In September 2011, the U.S. EPA adopted their new rule for heavy-duty trucks and engines. The U.S. EPA rule has compliance requirements for new compression and spark ignition engines, as well as trucks from Class 2b through Class 8.

Compliance requirements begin with model year (MY) 2014 with stringency levels increasing through MY 2018. The rule organizes truck compliance into three groupings, which include a) heavy-duty pickups and vans; b) vocational vehicles; and c) combination tractors. The U.S. EPA rule does not regulate trailers.

ARB staff has worked jointly with the U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) on the next phase of federal GHG emission standards for medium- and heavy-duty vehicles, called federal Phase 2. The federal Phase 2 standards were built on the improvements in engine and vehicle efficiency required by the Phase 1 emission standards and represent a significant opportunity to achieve further GHG reductions for 2018 and later model year heavy-duty vehicles, including trailers. But as discussed above, the USEPA and NHTSA have proposed to roll back GHG and fuel economy standards for cars and light-duty trucks, which suggests a similar rollback of Phase 2 standards for medium and heavy-duty vehicles may be pursued.

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 Office of Planning and Research 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 Office of Planning and Research 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 Office of Administrative law approved the amendments to the CEQA guidelines for implementing the California Environmental Quality Act. 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 1506.4 was amended to state 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 (1).

REGIONAL

The project is within the South Coast Air Basin (SCAB), which is under the jurisdiction of the SCAQMD.

South Coast Air Quality Management District

SCAQMD is the agency responsible for air quality planning and regulation in the SCAB. The SCAQMD addresses the impacts to climate change of projects subject to SCAQMD permit as a lead agency if they are the only agency having discretionary approval for the project and acts as a responsible agency when a land use agency must also approve discretionary permits for the project. The SCAQMD acts as an expert commenting agency for impacts to air quality. This expertise carries over to GHG emissions, so the agency helps local land use agencies through the development of models and emission thresholds that can be used to address GHG emissions.

In 2008, SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the SCAB. The Working Group developed several different options that are contained in the SCAQMD Draft Guidance Document – Interim CEQA GHG Significance Threshold, that could be applied by lead agencies. The working group has not provided additional guidance since release of the interim guidance in 2008. The SCAQMD Board has not approved the thresholds; however, the Guidance Document provides substantial evidence supporting the approaches to significance of GHG emissions that can be considered by the lead agency in adopting its own threshold. The current interim thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to the project's operational emissions. If a project's emissions are below one of the following screening thresholds, then the project is less than significant:
    - Residential and Commercial land use: 3,000 $MTCO_2e$ per year
    - Industrial land use: 10,000 $MTCO_2e$ per year
    - Based on land use type: residential: 3,500 $MTCO_2e$ per year; commercial: 1,400 $MTCO_2e$ per year; or mixed use: 3,000 $MTCO_2e$ per year
- Tier 4 has the following options:
    - Option 1: Reduce BAU emissions by a certain percentage; this percentage is currently undefined.
    - Option 2: Early implementation of applicable AB 32 Scoping Plan measures

  - Option 3, 2020 target for service populations (SP), which includes residents and employees: 4.8 $MTCO_2e$/SP/year for projects and 6.6 $MTCO_2e$/SP/year for plans;
  - Option 3, 2035 target: 3.0 $MTCO_2e$/SP/year for projects and 4.1 $MTCO_2e$/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's interim thresholds used the Executive Order S-3-05-year 2050 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus stabilizing global climate.

SCAQMD only has authority over GHG emissions from development projects that include air quality permits. At this time, it is unknown if the project would include stationary sources of emissions subject to SCAQMD permits. Notwithstanding, if the Project requires a stationary permit, it would be subject to the applicable SCAQMD regulations.

SCAQMD Regulation XXVII, adopted in 2009 includes the following rules:

- Rule 2700 defines terms and post global warming potentials.
- Rule 2701, SoCal Climate Solutions Exchange, establishes a voluntary program to encourage, quantify, and certify voluntary, high quality certified GHG emission reductions in the SCAQMD.
- Rule 2702, GHG Reduction Program created a program to produce GHG emission reductions within the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

2.8 SCAG REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

The 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for the SCAG region was prepared to ensure that the Southern California region attains the per capita vehicle miles targets for passenger vehicles identified by CARB, as required by Senate Bill 375 (40). The Project would be consistent with the plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands.

Development of the proposed Project would not conflict with the applicable goals of SCAG's *2016-2040 RTP/SCS.* The *RTP/SCS's Transportation System/Goods Movement* appendix is applicable to the Project because the Project is located in the SCAG region and the Project proposes one high cube logistics warehouse building for intended uses consisting of a variety of light industrial uses, including warehousing/distribution. Because the Project site is located within the SCAG region, an analysis of the Project's consistency with applicable SCAG goals is provided in Table 2-3.

TABLE 2-3: ANALYSIS OF CONSISTENCY WITH SCAG 2016-2040 RTP/SCS STRATEGY GOALS

RTP/SCS Goal	Goal Statement	Project Consistency Discussion
G1	Align the plan investments and policies with improving regional economic development and competitiveness.	No inconsistency identified. This policy would be implemented by cities and the counties within the SCAG region as part of comprehensive local and regional planning efforts.
G2	Maximize mobility and accessibility for all people and goods in the region.	No inconsistency identified. EIR Subsection 4.14, *Transportation and Traffic*, evaluates Project-related traffic impacts and specifies mitigation measures to ensure that roadway and intersection and intersection improvements needed to accommodate Project traffic volumes are implemented concurrent with proposed development, to the extent feasible.
G3	Ensure travel safety and reliability for all people and goods in the region.	No inconsistency identified. As disclosed in Section 4.14, *Transportation and Traffic*, there is no component of the proposed Project that would result in a substantial safety hazard to motorists (refer to analysis under Threshold e. Furthermore, EIR Subsection 4.14 specifies mitigation measures to ensure that roadway and intersection improvements meet safety standards and operate as efficiently as is feasible.
G4	Preserve and ensure a sustainable regional transportation system.	No inconsistency identified. This policy would be implemented by cities and the counties within the SCAG region as part of the overall planning and maintenance of the regional transportation system. The Project would have no adverse effect on such planning or maintenance efforts.

RTP/SCS Goal	Goal Statement	Project Consistency Discussion
G5	Maximize the productivity of our transportation system.	No inconsistency identified. This policy would be implemented by cities and the counties within the SCAG region as part of comprehensive transportation planning efforts. The Project would be consistent with the City of Menifee General Plan Circulation Element, which meets this goal to maximize productivity.
G6	Protect the environment and health for our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking).	No inconsistency identified. An analysis of the Project's environmental impacts is provided throughout this EIR, and mitigation measures are specified where warranted. Air quality is addressed in EIR Subsection 4.2, *Air Quality*, and mitigation measures are specified to reduce the Project's air quality impacts to the extent feasible. Additionally, and as discussed in EIR Subsection 4.6, *Greenhouse Gas Emissions*, the Project proposes to incorporate various measures related to building design, landscaping, and energy systems to promote the efficient use of energy. Additionally, the Project proposes to implement sidewalk and bike lane improvements along public roadway rights-of-way in a manner that is consistent with the City of Menifee General Plan. The Project study area is within the service area of the Riverside Transit Authority (RTA), a public transit agency serving various jurisdictions within Riverside County, although no bus service exists in the Project vicinity under existing conditions. As described in EIR Subsection 4.14, Threshold f., the Project would not conflict with any existing or planned RTA

RTP/SCS Goal	Goal Statement	Project Consistency Discussion
		routes.
G7	Actively encourage and create incentives for energy efficiency, where possible.	No inconsistency identified. This policy provides guidance to City staff to establish local incentive programs to encourage and promote energy efficient development. The Project's proposed design features related to building design, landscaping, and energy systems to promote the efficient use of energy are discussed throughout this EIR.
G8	Encourage land use and growth patterns that facilitate transit and non-motorized transportation.	No inconsistency identified. This policy provides guidance to the City to establish a regional land use plan that facilitates the use of transit and non-motorized forms of transportation. Although the Project proposes a Change of Zone to establish the Legado Specific Plan, the land uses planned as part of Legado Specific Plan are consistent with the site's existing General Plan land use designations (as discussed above under Threshold a). Additionally, the Project proposes to implement sidewalk and bike lane improvements along public roadway rights-of-way in a manner that is consistent with the City of Menifee General Plan. Based on the foregoing analysis, the Project would not conflict with this RTP/SCS goal.
G9	Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	No inconsistency identified. This policy provides guidance to the City of Menifee to monitor the transportation network and to coordinate with other agencies as appropriate.

2.9 NEWHALL RANCH DECISION

In its recent decision, Center for Biological Diversity v. Department of Fish and Wildlife, S217763 (Newhall) (41), the Court evaluated the California Department of Fish and Wildlife's (DFW) analysis of potential GHG emissions as contained in the EIR for the proposed land development called Newhall Ranch. In the EIR, the DFW analyzed GHG emissions under AB 32, using the BAU comparison as its sole significance determination criteria.

In Newhall, the California Supreme Court concluded that a finding of consistency with meeting statewide emission reduction goals is a legally permissible criterion of significance when analyzing potential impacts of GHG emissions under CEQA. However, the Court found that the EIR's conclusion that the project's emissions would be less than significant under that criterion was not supported by substantial evidence, and remanded back to the appellate court the narrow issue of whether substantial evidence supported the application of AB 32 statewide GHG reduction goal of approximately 28.5% to new land use projects.

The Court then identified "potential options" for lead agencies evaluating cumulative significance of a proposed land use development's GHG emissions in future CEQA documents:

1. Business As Usual Model: While the Court cautioned that the Scoping Plan may not be appropriate at the project-level, the BAU model might be used to determine what level of reduction from BAU a new land use development at the proposed location must contribute in order to comply with statewide goals pursuant to AB 32.

2. Compliance with Regulatory Programs Designed to Reduce GHG Emissions: The Court suggests that a lead agency could rely on a showing of compliance with regulatory programs designed to reduce GHG emissions. The Court clarifies that a significance analysis based on compliance with such statewide regulations only goes to impact within the area governed by the regulations.

3. Local Climate Action Plan or Other "Geographically Specific GHG Emission Reduction Plans": The Court points out that these plans may provide a basis for the tiering or streamlining of project-level CEQA analysis, so long as the plan is "sufficiently detailed and adequately supported."

4. Regional Sustainable Community Strategy (SCS): The Court also articulates that a lead agency need not additionally analyze GHG emissions from cars and light trucks in CEQA documents for certain residential, mixed use and transit priority projects that are consistent with an applicable SCS adopted pursuant to SB 375.

5. Numerical GHG Significance Thresholds: Although noting that use of such thresholds are not required, the Court favorably cited to the BAAQMD GHG significance thresholds, which are based on compliance with AB 32, and use a "service population" GHG ratio threshold for land use projects and a 10,000 ton annual GHG emission threshold for industrial projects. The Court remanded for further consideration the application of the 28.5% overall Scoping Plan metric, which is used by several Air Districts and, like the favorably-cited BAAQMD metric, is based on AB 32.

6. Executive Order Nos. S-3-05 and B-30-15: Citing to Executive Order Nos. S-3-05 and B- 30-15, the Court cautioned that those EIRs taking a goal-consistency approach to CEQA significance may in the future need to consider the project's effects on meeting emissions reduction targets beyond 2020.

2.10 DISCUSSION ON ESTABLISHMENT OF SIGNIFICANCE THRESHOLDS

The City of Menifee has not established local CEQA significance thresholds for GHG emissions, as described in Section 15064.7 of the CEQA guidelines. According to the FSOR for Regulatory Action, the revised Section 15064.7 gives lead agencies the discretion to determine their methodology for quantifying GHG emissions (42). As such, the City has selected the SCAQMD Tier 4 Option 3 approach to determining potential GHG emissions impacts.

2.10.1 THE SCAQMD EFFICIENCY MEASURE (TIER 4 OPTION 3)

The SCAQMD defines the service population as the total residents and employees associated with a project. The origin of the service population is based on CARB's 2008 Scoping Plan. The Scoping Plan identified that based on the GHG emissions inventories for the state, the people of California generate approximately 14 tons of GHG emissions per capita and would need to reduce annual emissions to approximately 10 tons per capita in order to meet the GHG reduction target of AB 32. Because people who live in California generally work in California, the service population metric did not include employees. As CEQA significance thresholds were being determined by air districts, the air districts considered applying this efficiency metric to their air district boundaries. Consistent with methodology provided by the Regional Targets Advisory Committee (RTAC) as part of the SB 375 target setting discussions, the definition of service population was amended to include employees in addition to residents. This is because the transportation sector is the primary source of project-related GHG emissions; and unlike the state as a whole, people who work in one county/air district may not live in the same county/ air district boundary. Also, people who live in a county/air district boundary would also have other trip ends such as school, parks, and retail uses. As such, the air district/county boundary as a whole did not take into account other users within the site.

Relevant to the proposed Project, the SCAQMD Tier 4 Option 3 is to utilize an efficiency target. The SCAQMD has proposed targets for project-level and plan-level analysis. At the September 2010 working group meeting the SCAQMD recommended a project-level efficiency target of 4.8 MT CO_2e per service population as a 2020 target.

The calculations behind this option are based on the same inventory calculated by CARB. The 4.8 metric ton per service population target is based on the same statewide 2020 GHG inventory in the CARB Scoping Plan, i.e., 295,530,000 MT CO_2e/yr. To derive the project level service population of 4.8 metric ton, SCAQMD took the 2020 statewide GHG reduction target for land use only (295,530,000 MTCO_2e/yr) and divided it by the total 2020 statewide population plus the total statewide employment for land use only (44,135,923 + 17,064,489) (i.e., (295,530,000 MT CO_2e/yr)/(44,135,923 + 17,064,489) = 4.8 MT CO_2e/yr). Thus, SCAQMD's threshold is another metric for assessing compliance with AB 32, just based on using numbers attributable to certain

sectors and trying to break down the analysis to a finer grain based on a per person methodology associated with land use-related sectors.

This approach is a widely accepted screening threshold used by numerous cities in the SCAB and is based on the SCAQMD staff's proposed GHG screening threshold for stationary source emissions for non-industrial projects, as described in the SCAQMD's *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* ("SCAQMD Interim GHG Threshold"). The SCAQMD Interim GHG Threshold identifies a screening threshold to determine whether additional analysis is required (43). As noted by the SCAQMD:

> *"…the…screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects...the policy objective of [SCAQMD's] recommended interim GHG significance threshold proposal is to achieve an emission capture rate of 90 percent of all new or modified stationary source projects. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that [SCAQMD] staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 [MMTCO$_2$e/yr]). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to [Best Available Control Technology] (BACT) for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility."* (43)

Although the SCAQMD's draft significance criteria have not been adopted, the City has determined that the SCAQMD's project level efficiency threshold methodology can be used to set an appropriate significance criterion by which to determine whether the project emits a significant amount of GHG. As previously noted, the 2017 Scoping Plan identifies a reduction target of 40% below 2020 levels by 2030. As such, the appropriate reduction target for 2030 would be 2.88 MT CO_2e/yr. For analysis purposes herein, the SP threshold for the Project's buildout year of 2025 was calculated by linear interpolation between the 2020 target of 4.8 MT CO_2e/yr and the 2030 target of 2.88 MT CO_2e/yr. As such, the target for the Project's buildout year of 2025 is 3.84 MT CO_2e/yr.

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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 GHG 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 California Code of Regulations §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to GHG if it would (1):

- 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 CALIFORNIA EMISSIONS ESTIMATOR MODEL™ EMPLOYED TO ANALYZE GHG EMISSIONS

On October 17, 2017, 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™ (CalEEMod™) v2016.3.2. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from 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 operational activity are provided in Appendices 3.1 and 3.3. The CalEEMod model includes GHG emissions from the following source categories: construction, area, energy, mobile, waste, water.

3.3.1 LAND USES MODELED IN CALEEMOD

The Project is located on a 331.0-acre parcel. As per information provided by the Project applicant, the Project is proposed to consist of up to 1,061 single family detached residential DUs, up to 225,000 s.f. of commercial use, up to 10,000 s.f. of recreational community center, and up to 11.23 acres of sports park use.

As CalEEMod does not provide an extensive selection of land use subtype categories, land uses that most closely fit the Project will be utilized. For purposes of analysis, the following land uses were modeled (45):

- 1,061 DU Single-Family Housing
- 225 TSF Regional Shopping Center

- 10 TSF Health Club[4]
- 11.23 acres City Park[5]

3.4 CONSTRUCTION AND OPERATIONAL LIFE-CYCLE ANALYSIS NOT REQUIRED

A full life-cycle analysis (LCA) for construction and operational activity is not included in this analysis due to the lack of consensus guidance on LCA methodology at this time (46). Life-cycle analysis (i.e., assessing economy-wide GHG emissions from the processes in manufacturing and transporting all raw materials used in the project development, infrastructure and on-going operations) depends on emission factors or econometric factors that are not well established for all processes. At this time, an LCA would be extremely speculative and thus has not been prepared.

Additionally, the SCAQMD recommends analyzing direct and indirect project GHG emissions generated within California and not life-cycle emissions because the life-cycle effects from a project could occur outside of California, might not be very well understood or documented, and would be challenging to mitigate (47). Additionally, the science to calculate life cycle emissions is not yet established or well defined; therefore, SCAQMD has not recommended, and is not requiring, life-cycle emissions analysis.

3.5 CONSTRUCTION EMISSIONS

Construction activities associated with the Project would result in emissions of CO_2 and CH_4 from construction activities. The report *Legado Specific Plan Air Quality Impact Analysis Report* (Urban Crossroads, Inc., 2019) contains detailed information regarding construction activity (48).

For construction phase Project emissions, GHGs are quantified and amortized over the life of the Project. To amortize the emissions over the life of the Project, the SCAQMD recommends calculating the total GHG emissions for the construction activities, dividing it by a 30-year project life then adding that number to the annual operational phase GHG emissions (49). As such, construction emissions were amortized over a 30-year period and added to the annual operational phase GHG emissions.

3.6 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:

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

[4] As per the CalEEMod User's Guide, the Health Club land use is defined as privately-owned facilities that primarily focus on individual fitness or training. Typically, they provide exercise classes; weightlifting, fitness and gymnastics equipment; spas; locker rooms; and small restaurants or snack bars.

[5] For purposes of analysis, the CalEEMod City Park land use will be used to model the 11.23-acre Sports Park.

- Solid Waste

3.6.1 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.

3.6.2 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 (the building energy use emissions do not include street lighting[6]).

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.

3.6.3 MOBILE SOURCE EMISSIONS

Vehicles

Project mobile source air quality impacts are dependent on both overall daily vehicle trip generation and the effect of the Project on peak hour traffic volumes and traffic operations in the vicinity of the Project. The Project-related operational air quality impacts are derived primarily from vehicle trips generated by the Project. Trip characteristics available from the report, *Legado Specific Plan Traffic Impact Analysis* (Urban Crossroads, Inc., 2019) were utilized in this analysis (50).

3.6.5 WATER SUPPLY, TREATMENT AND DISTRIBUTION

Indirect GHG emissions result from the production of electricity used to convey, treat and distribute water and wastewater. The amount of electricity required to convey, treat and distribute water depends on the volume of water as well as the sources of the water. The Project water demand was based on the Specific Plan land uses and the Eastern Municipal Water District (EMWD) demand factor criteria. As presented in the *Water Supply Assessment Report Fleming Ranch Project (SP 2017-187)*, the flow factor (gpd/unit) of 440 gpd/unit for Medium Density Residential uses and 2,220 gpd/unit for Commercial and Open Space land uses were utilized to

[6] The CalEEMod emissions inventory model does not include indirect emission related to street lighting. Indirect emissions related to street lighting are expected to be negligible and cannot be accurately quantified at this time as there is insufficient information as to the number and type of street lighting that would occur.

calculate the Project's annual water demand (51). For CalEEMod purposes, the flow factors were utilized to calculate the annual water demand factor by land use as shown on Table 3-1 below:

TABLE 3-1: ANNUAL WATER DEMAND BY LAND USE

Land Use	Base Unit	Project Size (units)	Water Use Factor (gpd/unit)	Annual Water Use (gpy)
Single Family Detached Residential Use	DU	1,061	440	170,396,600
Regional Shopping Center	Acre	20.10	2,200	16,140,300
Community Center	Acre	1.67	2,200	1,341,010
Sports Park	Acre	11.23	2,200	9,017,690

3.6.6 SOLID WASTE

Residential land uses will result in the generation and disposal of solid waste. A large percentage of this waste will 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 will 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 proposed Project were calculated by the CalEEMod™ model using default parameters.

3.7 SERVICE POPULATION

3.7.1 RESIDENTIAL

Implementation of the proposed Project would result in the construction of up to 1,061 DUs. According to the *City of Menifee General Plan Draft Housing Element 2013-2021*, the average size of households residing in Menifee is approximately 2.8 persons per household (pph) (52). As such, the Project would generate a future population of approximately 2,971 residents for the Project.

3.7.2 EMPLOYEES

The employment generation rates specified in Table 11B of the *Employment Density Study Summary Report* prepared for SCAG, indicates that the that the County of Riverside averages approximately 629 s.f. of retail space per employee (53). The employment calculation for the proposed 225,000 s.f. commercial use was calculated by dividing 225,000 s.f. by the employment density of 629 s.f. of retail space per employee to arrive at approximately 358 employees (225,000 s.f. ÷ 629 s.f. of retail space per employee = 358 employees). It should be noted that the end users of the commercial component of this Project are unknown and may include office tenants in addition to retail tenants.

3.7.3 SERVICE POPULATION

The service population is the sum of residents and employees for a given time. For purposes of analysis, the service population each scenario is shown below:

TABLE 3-2: SERVICE POPULATION

Land Use	Residents	Employees	Total
Single Family Detached Residential Use	2,971	-	2,971
Commercial Use	-	358	358
		SERVICE POPULATION	***3,329***

3.8 EMISSIONS SUMMARY

Impacts without Project Design Features and Mitigation

As shown in Table 3-3, prior to implementation of Project design features and mitigation, the proposed project will result in approximately 9.20 $MTCO_2e$ per service population which would exceed the threshold of 3.84 $MTCO_2e$ per service population. Detailed operational model outputs are presented in Appendices 3.2 and 3.3. Therefore, project-related emissions would have a significant cumulatively-considerable impact on GHG and climate change.

TABLE 3-3: TOTAL PROJECT ANNUAL GHG EMISSIONS (WITHOUT PDFS AND MMS)

Emission Source	Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	Total CO_2E
Annual construction-related emissions amortized over 30 years	484.81	0.06	0.00	486.19
Area	347.15	0.35	0.01	358.26
Energy	5,660.77	0.19	0.07	5,685.22
Mobile Sources	22,056.87	0.99	0.00	22,081.66
Waste	306.99	18.14	0.00	760.55
Water Usage	1,062.70	6.16	0.15	1,262.42
Total CO_2E (All Sources)	**30,634.30**			
Service Population	3,329			
Total CO_2E (All Sources) per Service Population	**9.20**			
SCAQMD Threshold per Service Population	3.84			
Exceedance?	**YES**			

Impacts with Project Design Features and Mitigation

The estimated total $MTCO_2e$ per service population is summarized on Tables 3-4. After implementation of Project design features and mitigation, the project will result in 8.32 $MTCO_2e$ per service population which would still exceed the threshold of 3.84 $MTCO_2e$ per service population. Detailed operational model outputs are presented in Appendices 3.4 and 3.5. As such, project-related emissions would have a potential significant direct or indirect impact on GHG and climate change.

TABLE 3-4: TOTAL PROJECT ANNUAL GHG EMISSIONS (WITH PDFS AND MMS)

Emission Source	Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	Total CO_2E
Annual construction-related emissions amortized over 30 years	484.81	0.06	0.00	486.19
Area	17.88	0.02	0.00	18.31
Energy	4,204.64	0.15	0.05	4,222.11
Mobile Sources	21,153.01	0.97	0.00	21,177.23
Waste	306.99	18.14	0.00	760.55
Water Usage	856.80	4.93	0.12	1,016.60
Total CO_2E (All Sources)	**27,681.00**			
Service Population	3,329			
Total CO_2E (All Sources) per Service Population	**8.32**			
SCAQMD Threshold per Service Population	3.84			
Exceedance?	**YES**			

3.9 GREENHOUSE GAS EMISSIONS FINDINGS AND RECOMMENDATIONS

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

Without consideration of PDFs and MMs, the Project would result in 9.20 $MTCO_2e$ per service population per year as summarized in Table 3-3 (presented previously). With implementation of PDFs and MMs, the project will result in 8.32 $MTCO_2e$ per service population as summarized on Table 3-4 (previously presented) which would still exceed the applicable threshold of 3.84 $MTCO_2e$ per service population. Thus, project-related emissions would have a potential significant direct or indirect impact on GHG and 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 GHGs.

2008 Scoping Plan Consistency

ARB's *Scoping Plan* identifies strategies to reduce California's GHG emissions in support of AB32 which requires the State to reduce its GHG emissions to 1990 levels by 2020. Many of the strategies identified in the Scoping Plan are not applicable at the project level, such as long-term technological improvements to reduce emissions from vehicles. Some measures are applicable and supported by the project, such as energy efficiency. Finally, while some measures are not directly applicable, the project would not conflict with their implementation. Reduction measures are grouped into 18 action categories, as follows:

1. **California Cap-and-Trade Program Linked to Western Climate Initiative Partner Jurisdictions.** Implement a broad-based California cap-and-trade program to provide a firm limit on emissions. Link the California cap–and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California.[7] Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms.
2. **California Light-Duty Vehicle GHG Standards.** Implement adopted Pavley standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.
3. **Energy Efficiency.** Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities).
4. **Renewables Portfolio Standards.** Achieve 33 percent renewable energy mix statewide.
5. **Low Carbon Fuel Standard.** Develop and adopt the Low Carbon Fuel Standard.
6. **Regional Transportation-Related GHG Targets.** Develop regional GHG emissions reduction targets for passenger vehicles.
7. **Vehicle Efficiency Measures.** Implement light-duty vehicle efficiency measures.
8. **Goods Movement.** Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.
9. **Million Solar Roofs Program.** Install 3,000 megawatts of solar-electric capacity under California's existing solar programs.
10. **Medium- and Heavy-Duty Vehicles.** Adopt medium- (MD) and heavy-duty (HD) vehicle efficiencies. Aerodynamic efficiency measures for HD trucks pulling trailers 53-feet or longer that include improvements in trailer aerodynamics and use of rolling resistance tires were adopted in 2008 and went into effect in 2010.[8] Future, yet to be determined improvements, includes hybridization of MD and HD trucks.
11. **Industrial Emissions.** Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce GHG emissions and provide other pollution reduction co-benefits. Reduce GHG emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.
12. **High Speed Rail.** Support implementation of a high-speed rail system.
13. **Green Building Strategy.** Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.
14. **High Global Warming Potential Gases.** Adopt measures to reduce high warming global potential gases.
15. **Recycling and Waste.** Reduce methane emissions at landfills. Increase waste diversion, composting and other beneficial uses of organic materials, and mandate commercial recycling. Move toward zero-waste.

[7] California Air Resources Board. California GHG Emissions – Forecast (2002-2020). October 2010
[8] California Air Resources Board. Scoping Plan Measures Implementation Timeline. October 2010

16. **Sustainable Forests.** Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation. The 2020 target for carbon sequestration is 5 million $MTCO_2e$/yr.
17. **Water.** Continue efficiency programs and use cleaner energy sources to move and treat water.
18. **Agriculture.** In the near-term, encourage investment in manure digesters and at the five-year Scoping Plan update determine if the program should be made mandatory by 2020.

Table 3-5 summarizes the project's consistency with the 2008 Scoping Plan. As summarized, the project will not conflict with any of the provisions of the Scoping Plan and in fact supports seven of the action categories through energy efficiency, water conservation, recycling, and landscaping.

TABLE 3-5: 2008 SCOPING PLAN CONSISTENCY SUMMARY[9]

Action	Supporting Measures	Consistency
Cap-and-Trade Program	--	Not applicable. These programs involve capping emissions from electricity generation, industrial facilities, and broad scoped fuels. Caps do not directly affect manufacturing projects.
Light-Duty Vehicle Standards	T-1	Not applicable. This is a statewide measure establishing vehicle emissions standards.
Energy Efficiency	E-1	Consistent. The project will include a variety of building, water, and solid waste efficiencies consistent with the current CALGREEN requirements.
	E-2	
	CR-1	
	CR-2	
Renewables Portfolio Standard	E-3	Not applicable. Establishes the minimum statewide renewable energy mix.
Low Carbon Fuel Standard	T-2	Not applicable. Establishes reduced carbon intensity of transportation fuels.
Regional Transportation-Related GHG Targets	T-3	Not applicable. This is a statewide measure and is not within the purview of this Project.
Vehicle Efficiency Measures	T-4	Not applicable. Identifies measures such as minimum tire-fuel efficiency, lower friction oil, and reduction in air conditioning use.
Goods Movement	T-5	Not applicable. Identifies measures to improve goods movement efficiencies such as advanced combustion strategies, friction reduction, waste heat recovery, and electrification of accessories. While these measures are yet to be implemented and will be voluntary, the proposed Project would not interfere with their implementation.
	T-6	

[9] Measures can be found at the following link: https://www.arb.ca.gov/cc/scopingplan/2013_update/appendix_b.pdf

Action	Supporting Measures	Consistency
Million Solar Roofs (MSR) Program	E-4	Not applicable. The MSR program sets a goal for use of solar systems throughout the state as a whole. The project currently does not include solar energy generation, and it is unknown if the building roof structure will be designed to support solar panels in the future.
Medium- & Heavy-Duty Vehicles	T-7	Not applicable. MD and HD trucks and trailers working from the proposed parcel delivery facility will be subject to aerodynamic and hybridization requirements as established by ARB; no feature of the project would interfere with implementation of these requirements and programs.
	T-8	
Industrial Emissions	I-1	Not applicable. These measures are applicable to large industrial facilities (> 500,000 $MTCO_2e$/yr) and other intensive uses such as refineries.
	I-2	
	I-3	
	I-4	
	I-5	
High Speed Rail	T-9	Not applicable. Supports increased mobility choice.
Green Building Strategy	GB-1	Consistent. The project will include a variety of building, water, and solid waste efficiencies consistent with the current CALGREEN requirements.
High Global Warming Potential Gases	H-1	Not applicable. The proposed Project is not substantial sources of high GWP emissions and will comply with any future changes in air conditioning, fire protection suppressant, and other requirements.
	H-2	
	H-3	
	H-4	
	H-5	
	H-6	
	H-7	
Recycling and Waste	RW-1	Consistent. The Project will recycle a minimum of 50 percent from construction activities and operations pursuant to AB 939 and AB 75 requirements.
	RW-2	
	RW-3	
Sustainable Forests	F-1	Consistent. The project will increase carbon sequestration by increasing on-site trees per the project landscaping plan.
Water	W-1	Consistent. The project will include use of low-flow fixtures and efficient landscaping pursuant to current CALGREEN requirements.
	W-2	
	W-3	
	W-4	
	W-5	
	W-6	
Agriculture	A-1	Not applicable. The project is not an agricultural use.

SB 32/2017 Scoping Plan Consistency

At the state level, Executive Orders S-3-05 and B-30-15 are orders from the State's Executive Branch for the purpose of reducing GHG emissions. The goal of Executive Order S-3-05 is to reduce GHG emissions to 1990 levels by 2020 was codified by the Legislature as the 2006 Global Warming Solutions Act (AB 32). The Project, as analyzed above, is consistent with AB 32. Therefore, the Project does not conflict with this component of Executive Order S-3-05. The Executive Orders also establish goals to reduce GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. As previously stated, the 2017 Scoping Plan Update reflects the 2030 reduction target, set by Executive Order B-30-15 and codified by SB 32. However, studies have shown that, in order to meet the 2030 and 2050 targets, aggressive technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. In its Climate Change Scoping Plan, ARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail." In the First Scoping Plan Update, however, ARB generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; largescale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately."

Unlike the 2020 and 2030 reduction targets of AB 32 and SB 32, respectively the 2050 target of Executive Order S-3-05 has not been codified. Accordingly, the 2050 reduction target has not been the subject of any analysis by CARB. For example, CARB has not prepared an update to the aforementioned Scoping Plan that provides guidance to local agencies as to how they may seek to contribute to the achievement of the 2050 reduction target.

In 2017, the California Supreme Court examined the need to use the Executive Order S-3-05 2050 reduction target in Cleveland National Forest Foundation v. San Diego Association of Governments (2017) 3 Cal.5th 497 (Cleveland National). The case arose from SANDAG's adoption of its 2050 Regional Transportation Plan, which included its Sustainable Communities Strategy, as required by SB 375 (discussed above). On review, the Supreme Court held that SANDAG did not violate CEQA by not considering the Executive Order S-3-05 2050 reduction target.

As explained above, the 2050 reduction target of Executive Order S-3-05 has not been codified, unlike the 2020 and 2030 reduction targets of AB 32 and SB 32, respectively. Accordingly, the 2050 reduction target has not been the subject of any analysis by CARB. For example, CARB has not prepared an update to the aforementioned Scoping Plan that provides guidance to local agencies as to how they may seek to contribute to the achievement of the 2050 reduction target.

Further, the Project is much smaller in size and scope in comparison to the Regional Transportation Plan examined in *Cleveland National*. In that case, the California Supreme Court held that SANDAG did not violate CEQA by not considering the Executive Order S-3-05 2050 reduction target. Accordingly, there is no information presently available to assess the Project's consistency with regard to the 2050 target of Executive Order S-3-05.

The 2017 Scoping Plan Update reflects the 2030 target of a 40 percent reduction below 1990 levels, set by Executive Order B-30-15 and codified by SB 32. Table 3-6 summarizes the project's consistency with the 2017 Scoping Plan. As summarized, the project will not conflict with any of the provisions of the Scoping Plan and in fact supports seven of the action categories.

TABLE 3-6 2017 SCOPING PLAN CONSISTENCY SUMMARY[10]

Action	Responsible Parties	Consistency
Implement SB 350 by 2030		
Increase the Renewables Portfolio Standard to 50 percent of retail sales by 2030 and ensure grid reliability.	CPUC CEC CARB	Consistent. This measure is not directly applicable to development projects, but the Proposed Project would use energy from Southern California Edison, which has committed to diversify its portfolio of energy sources by increasing energy from wind and solar sources.
Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.		Consistent. Although this measure is directed towards policymakers, the proposed Project would be designed and constructed to implement the energy efficiency measures for new commercial developments and would include several measures designed to reduce energy consumption.
Reduce GHG emissions in the electricity sector through the implementation of the above measures and other actions as modeled in IRPs to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly- owned utilities meet GHG emissions reductions planning targets through a combination of measures as described in IRPs.		Consistent. The proposed Project would be designed and constructed to implement the energy efficiency measures, where applicable by including several measures designed to reduce energy consumption. The proposed Project includes energy efficient field lighting and fixtures that meet the current Title 24 Standards throughout the Project Site and would be a modern development with energy efficient boilers, heaters, and air conditioning systems.
Implement Mobile Source Strategy (Cleaner Technology and Fuels)		
At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025.	CARB CalSTA SGC Caltrans	Consistent. These are CARB enforced standards; vehicles that access the project that

[10] Measures can be found at the following link: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

Action	Responsible Parties	Consistency
	CEC OPR Local Agencies	are required to comply with the standards will comply with the strategy.
At least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030.		Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean cars regulations.		Not applicable. This measure is not within the purview of this Project.
Medium- and heavy-duty GHG Phase 2.		Not applicable. This measure is not within the purview of this Project.
Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NO_X standard.		Not applicable. This measure is not within the purview of this Project.
Last Mile Delivery: New regulation that would result in the use of low NO_X or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10 percent in 2025 and remaining flat through 2030.		Not applicable. This measure is not within the purview of this Project.
Further reduce VMT through continued implementation of SB 375 and regional Sustainable Communities Strategies; forthcoming statewide implementation of SB 743; and potential additional VMT reduction strategies not specified in the Mobile Source Strategy but included in the document "Potential VMT Reduction Strategies for Discussion."		Not applicable. This measure is not within the purview of this Project.
Increase stringency of SB 375 Sustainable Communities Strategy (2035 targets).	CARB	Not applicable. The Project is not within the purview of SB 375 and would therefore not conflict with this measure.

Action	Responsible Parties	Consistency
By 2019, adjust performance measures used to select and design transportation facilities		
Harmonize project performance with emissions reductions and increase competitiveness of transit and active transportation modes (e.g. via guideline documents, funding programs, project selection, etc.).	CalSTA SGC OPR CARB GoBiz IBank DOF CTC Caltrans	Not applicable. Although this is directed towards CARB and Caltrans, the Proposed Project would be designed to promote and support pedestrian activity on-site and in the Project Site area. The Project Site is within proximity to residential neighborhoods.
By 2019, develop pricing policies to support low-GHG transportation (e.g. low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts).	CalSTA Caltrans CTC OPR/SGC CARB	Not applicable. Although this measure is directed towards policymakers, the proposed Project would comply with AB 939, which sets a statewide policy that not less than 50 percent of solid waste generated be source reduced, recycled, or composted. Additionally, the proposed Project would be required to have a recycling program and recycling collection. During construction, the proposed Project shall recycle and reuse construction and demolition waste per City Solid Waste procedures.
Implement California Sustainable Freight Action Plan		
Improve freight system efficiency.	CalSTA CalEPA CNRA CARB Caltrans CEC GoBiz	When adopted, this measure would apply to all trucks accessing the Project site, this may include existing trucks or new trucks that are part of the statewide goods movement sector.
Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.		Not applicable. This measure is not within the purview of this Project.
Adopt a Low Carbon Fuel Standard with a CI reduction of 18 percent.	CARB	Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030). When adopted, this measure would apply to all fuel purchased and used by the Project in the state.
Implement the Short-Lived Climate Pollutant Strategy by 2030		

Action	Responsible Parties	Consistency
40 percent reduction in methane and hydrofluorocarbon emissions below 2013 levels.	CARB CalRecycle CDFA SWRCB Local Air Districts	When adopted, the Project would be required to comply with this measure and reduce SLPS accordingly.
50 percent reduction in black carbon emissions below 2013 levels.		Not applicable. This measure is not within the purview of this Project.
By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.	CARB CalRecycle CDFA SWRCB Local Air Districts	Not applicable. This measure is not within the purview of this Project.
Implement the post-2020 Cap-and-Trade Program with declining annual caps.	CARB	When adopted, the Project would be required to comply with the Cap-and-Trade Program if it generates emissions from sectors covered by Cap-and-Trade.
By 2018, develop Integrated Natural and Working Lands Implementation Plan to secure California's land base as a net carbon sink		
Protect land from conversion through conservation easements and other incentives.	CNRA Departments Within CDFA CalEPA CARB	Not applicable. This measure is not within the purview of this Project.
Increase the long-term resilience of carbon storage in the land base and enhance sequestration capacity		Not applicable. This measure is not within the purview of this Project.
Utilize wood and agricultural products to increase the amount of carbon stored in the natural and built environments		Not applicable. This measure is not within the purview of this Project.
Establish scenario projections to serve as the foundation for the Implementation Plan		Not applicable. This measure is not within the purview of this Project.
Establish a carbon accounting framework for natural and working lands as described in SB 859 by 2018	CARB	Not applicable. This measure is not within the purview of this Project.
Implement Forest Carbon Plan	CNRA CAL FIRE	Not applicable. This measure is not within the purview of this Project.

Action	Responsible Parties	Consistency
	CalEPA and Departments Within	
Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.	State Agencies & Local Agencies	Not applicable. This measure is not within the purview of this Project.

As shown above, the Project would not conflict with any of the 2017 Scoping Plan elements as any regulations adopted would apply directly or indirectly to the Project. Further, recent studies show that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40 percent below 1990 levels by 2030 (37).

Notwithstanding, because the Project exceeds the applicable numeric threshold and results in a cumulatively considerable impact with respect to GHG emissions, a significant and unavoidable finding with respect to this criterion is also identified.

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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 Legado Specific Plan 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 at (949) 336-5987.

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

PROFESSIONAL CERTIFICATIONS

Planned Communities and Urban Infill – Urban Land Institute • June, 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April, 2008
Principles of Ambient Air Monitoring – California Air Resources Board • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
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APPENDIX 3.1:

CALEEMOD ANNUAL CONSTRUCTION EMISSIONS MODEL OUTPUTS

Legado (Construction - Mitigated)

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	11.23	Acre	11.23	489,178.80	0
Health Club	10.00	1000sqft	1.67	10,000.00	0
Single Family Housing	1,061.00	Dwelling Unit	216.90	3,001,750.00	2971
Regional Shopping Center	225.00	1000sqft	20.10	225,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Legado (Construction - Mitigated) - South Coast AQMD Air District, Annual

Project Characteristics -

Land Use - As per the Legado Community Development Plan, the Residential Planning Area is 216.9 acres; the Commercial Area is 20.1 acres; and the Community Park/Center is 12.9 acres. It should also be noted that as per the Plan, the population is 2.8 persons per household = 2,971 persons. As home size has not been provided, it is assumed that 50% of the lot acreage is the building sf.

Construction Phase - Construction Schedule adjusted to meet the 2025 OY.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment - Hours are based on an 8-hour workday.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment -

Grading - For purposes of analysis, based on the construction equipment and CalEEMod methodology, it is assumed that 4 acres per day will be disturbed during Grading (Phase 1 & 2) activities.

Architectural Coating - Rule 1113

Vehicle Trips - Construction Run Only.

Woodstoves - Construction Run Only.

Energy Use - Construction Run Only.

Water And Wastewater - Construction Run Only.

Solid Waste - Construction Run Only.

Construction Off-road Equipment Mitigation - Rule 403

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Residential_Exterior	2,026,181.00	4,052,363.00
tblArchitecturalCoating	ConstArea_Residential_Interior	6,078,544.00	12,157,088.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_Residential_Exterior	2026181	4052363
tblAreaCoating	Area_Residential_Interior	6078544	12157088
tblConstructionPhase	NumDays	465.00	180.00

Legado (Construction - Mitigated) - South Coast AQMD Air District, Annual

tblConstructionPhase	NumDays	4,650.00	1,550.00
tblConstructionPhase	NumDays	330.00	1,490.00
tblConstructionPhase	NumDays	465.00	180.00
tblEnergyUse	LightingElect	2.93	0.00
tblEnergyUse	LightingElect	5.61	0.00
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24E	2.44	0.00
tblEnergyUse	NT24E	6,155.97	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	NT24NG	0.30	0.00
tblEnergyUse	NT24NG	6,030.00	0.00
tblEnergyUse	T24E	2.20	0.00
tblEnergyUse	T24E	4.58	0.00
tblEnergyUse	T24E	951.67	0.00
tblEnergyUse	T24NG	15.36	0.00
tblEnergyUse	T24NG	1.92	0.00
tblEnergyUse	T24NG	24,566.15	0.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	901.85	0.00
tblFireplaces	NumberNoFireplace	106.10	0.00
tblFireplaces	NumberWood	53.05	0.00
tblGrading	AcresOfGrading	630.00	720.00
tblGrading	AcresOfGrading	630.00	720.00
tblLandUse	LandUseSquareFeet	1,909,800.00	3,001,750.00

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tblLandUse	LotAcreage	0.23	1.67
tblLandUse	LotAcreage	344.48	216.90
tblLandUse	LotAcreage	5.17	20.10
tblLandUse	Population	3,034.00	2,971.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	SolidWasteGenerationRate	0.97	0.00
tblSolidWaste	SolidWasteGenerationRate	57.00	0.00
tblSolidWaste	SolidWasteGenerationRate	236.25	0.00
tblSolidWaste	SolidWasteGenerationRate	1,218.11	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CC_TTP	64.10	0.00
tblVehicleTrips	CC_TTP	64.70	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	16.60	0.00

tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.90	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	28.00	0.00
tblVehicleTrips	DV_TP	39.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	8.70	0.00
tblVehicleTrips	HO_TTP	40.60	0.00
tblVehicleTrips	HS_TL	5.90	0.00
tblVehicleTrips	HS_TTP	19.20	0.00
tblVehicleTrips	HW_TL	14.70	0.00
tblVehicleTrips	HW_TTP	40.20	0.00
tblVehicleTrips	PB_TP	6.00	0.00
tblVehicleTrips	PB_TP	9.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	66.00	0.00
tblVehicleTrips	PR_TP	52.00	0.00
tblVehicleTrips	PR_TP	54.00	0.00
tblVehicleTrips	PR_TP	86.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	ST_TR	9.91	0.00

tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWater	IndoorWaterUseRate	591,431.44	0.00
tblWater	IndoorWaterUseRate	16,666,317.33	0.00
tblWater	IndoorWaterUseRate	69,128,421.18	0.00
tblWater	OutdoorWaterUseRate	13,380,335.56	0.00
tblWater	OutdoorWaterUseRate	362,490.24	0.00
tblWater	OutdoorWaterUseRate	10,214,839.66	0.00
tblWater	OutdoorWaterUseRate	43,580,961.18	0.00
tblWoodstoves	NumberCatalytic	53.05	0.00
tblWoodstoves	NumberNoncatalytic	53.05	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.5691	6.5208	3.5845	8.1400e-003	1.0179	0.2582	1.2761	0.3644	0.2378	0.6023	0.0000	735.0049	735.0049	0.1974	0.0000	739.9397
2020	3.8718	8.6414	7.3571	0.0249	1.3057	0.2552	1.5609	0.3512	0.2396	0.5908	0.0000	2,276.7039	2,276.7039	0.2148	0.0000	2,282.0732
2021	4.3496	7.9481	7.0415	0.0248	1.3320	0.2235	1.5554	0.3581	0.2097	0.5678	0.0000	2,264.6697	2,264.6697	0.2092	0.0000	2,269.8986
2022	4.2575	7.1688	6.6292	0.0242	1.3268	0.1932	1.5200	0.3567	0.1813	0.5380	0.0000	2,213.5501	2,213.5501	0.2032	0.0000	2,218.6301
2023	4.1794	5.9753	6.2544	0.0236	1.3268	0.1679	1.4947	0.3567	0.1575	0.5142	0.0000	2,155.6764	2,155.6764	0.1941	0.0000	2,160.5299
2024	4.5608	9.6598	9.2405	0.0310	2.2877	0.3153	2.6030	0.7058	0.2927	0.9984	0.0000	2,812.8306	2,812.8306	0.4041	0.0000	2,822.9327
2025	3.7012	5.6372	6.8454	0.0229	1.1835	0.1664	1.3499	0.3182	0.1550	0.4732	0.0000	2,085.7236	2,085.7236	0.2440	0.0000	2,091.8243
Maximum	**4.5608**	**9.6598**	**9.2405**	**0.0310**	**2.2877**	**0.3153**	**2.6030**	**0.7058**	**0.2927**	**0.9984**	**0.0000**	**2,812.8306**	**2,812.8306**	**0.4041**	**0.0000**	**2,822.9327**

2.1 Overall Construction

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					
2019	0.5691	6.5208	3.5845	8.1400e-003	0.4544	0.2582	0.7126	0.1575	0.2378	0.3954	0.0000	735.0042	735.0042	0.1974	0.0000	739.9389
2020	3.8718	8.6414	7.3571	0.0249	1.3057	0.2552	1.5609	0.3512	0.2396	0.5908	0.0000	2,276.7032	2,276.7032	0.2148	0.0000	2,282.0726
2021	4.3496	7.9481	7.0415	0.0248	1.3320	0.2235	1.5554	0.3581	0.2097	0.5678	0.0000	2,264.6691	2,264.6691	0.2092	0.0000	2,269.8979
2022	4.2575	7.1688	6.6292	0.0242	1.3268	0.1932	1.5200	0.3567	0.1813	0.5380	0.0000	2,213.5494	2,213.5494	0.2032	0.0000	2,218.6295
2023	4.1794	5.9753	6.2544	0.0236	1.3268	0.1679	1.4947	0.3567	0.1575	0.5142	0.0000	2,155.6758	2,155.6758	0.1941	0.0000	2,160.5293
2024	4.5608	9.6598	9.2405	0.0310	1.7242	0.3153	2.0395	0.4989	0.2927	0.7916	0.0000	2,812.8292	2,812.8292	0.4041	0.0000	2,822.9313
2025	3.7012	5.6372	6.8454	0.0229	1.1835	0.1664	1.3499	0.3182	0.1550	0.4732	0.0000	2,085.7228	2,085.7228	0.2440	0.0000	2,091.8234
Maximum	**4.5608**	**9.6598**	**9.2405**	**0.0310**	**1.7242**	**0.3153**	**2.0395**	**0.4989**	**0.2927**	**0.7916**	**0.0000**	**2,812.8292**	**2,812.8292**	**0.4041**	**0.0000**	**2,822.9313**

	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**	**11.52**	**0.00**	**9.92**	**14.72**	**0.00**	**9.66**	**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	**4-1-2019**	**6-30-2019**	2.3235	2.3235
2	**7-1-2019**	**9-30-2019**	2.3491	2.3491
3	**10-1-2019**	**12-31-2019**	2.3972	2.3972
4	**1-1-2020**	**3-31-2020**	2.6238	2.6238

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5	**4-1-2020**	**6-30-2020**	3.2398	3.2398
6	**7-1-2020**	**9-30-2020**	3.2754	3.2754
7	**10-1-2020**	**12-31-2020**	3.2941	3.2941
8	**1-1-2021**	**3-31-2021**	3.0263	3.0263
9	**4-1-2021**	**6-30-2021**	3.0442	3.0442
10	**7-1-2021**	**9-30-2021**	3.0777	3.0777
11	**10-1-2021**	**12-31-2021**	3.0935	3.0935
12	**1-1-2022**	**3-31-2022**	2.8229	2.8229
13	**4-1-2022**	**6-30-2022**	2.8401	2.8401
14	**7-1-2022**	**9-30-2022**	2.8714	2.8714
15	**10-1-2022**	**12-31-2022**	2.8857	2.8857
16	**1-1-2023**	**3-31-2023**	2.5122	2.5122
17	**4-1-2023**	**6-30-2023**	2.5276	2.5276
18	**7-1-2023**	**9-30-2023**	2.5554	2.5554
19	**10-1-2023**	**12-31-2023**	2.5680	2.5680
20	**1-1-2024**	**3-31-2024**	2.8252	2.8252
21	**4-1-2024**	**6-30-2024**	3.8390	3.8390
22	**7-1-2024**	**9-30-2024**	3.9947	3.9947
23	**10-1-2024**	**12-31-2024**	3.5222	3.5222
24	**1-1-2025**	**3-31-2025**	2.6141	2.6141
25	**4-1-2025**	**6-30-2025**	2.6316	2.6316
26	**7-1-2025**	**9-30-2025**	2.6606	2.6606
		Highest	3.9947	3.9947

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	14.0163	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**14.0163**	**0.1259**	**10.9345**	**5.8000e-004**	**0.0000**	**0.0607**	**0.0607**	**0.0000**	**0.0607**	**0.0607**	**0.0000**	**17.8792**	**17.8792**	**0.0171**	**0.0000**	**18.3075**

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	14.0163	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**14.0163**	**0.1259**	**10.9345**	**5.8000e-004**	**0.0000**	**0.0607**	**0.0607**	**0.0000**	**0.0607**	**0.0607**	**0.0000**	**17.8792**	**17.8792**	**0.0171**	**0.0000**	**18.3075**

	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading (Phase 1)	Grading	4/1/2019	12/6/2019	5	180	
2	Building Construction	Building Construction	12/7/2019	11/14/2025	5	1550	
3	Architectural Coating	Architectural Coating	3/1/2020	11/14/2025	5	1490	
4	Grading (Phase 2)	Grading	3/8/2024	11/14/2024	5	180	
5	Paving	Paving	9/1/2024	12/5/2025	5	330	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 12,157,088; Residential Outdoor: 4,052,363; Non-Residential Indoor: 352,500; Non-Residential Outdoor: 117,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Legado (Construction - Mitigated) - South Coast AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading (Phase 1)	Crawler Tractors	2	8.00	212	0.43
Grading (Phase 1)	Excavators	2	8.00	158	0.38
Grading (Phase 1)	Graders	1	8.00	187	0.41
Grading (Phase 1)	Rubber Tired Dozers	1	8.00	247	0.40
Grading (Phase 1)	Scrapers	2	8.00	367	0.48
Grading (Phase 1)	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Crawler Tractors	3	8.00	212	0.43
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	8.00	78	0.48
Grading (Phase 2)	Crawler Tractors	2	8.00	212	0.43
Grading (Phase 2)	Excavators	2	8.00	158	0.38
Grading (Phase 2)	Graders	1	8.00	187	0.41
Grading (Phase 2)	Rubber Tired Dozers	1	8.00	247	0.40
Grading (Phase 2)	Scrapers	2	8.00	367	0.48
Grading (Phase 2)	Tractors/Loaders/Backhoes	0	8.00	97	0.37
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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading (Phase 1)	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	664.00	232.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	133.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading (Phase 2)	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading (Phase 1) - 2019

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					0.9238	0.0000	0.9238	0.3391	0.0000	0.3391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4945	5.9250	3.0538	6.4300e-003		0.2406	0.2406		0.2214	0.2214	0.0000	578.0174	578.0174	0.1829	0.0000	582.5894
Total	**0.4945**	**5.9250**	**3.0538**	**6.4300e-003**	**0.9238**	**0.2406**	**1.1644**	**0.3391**	**0.2214**	**0.5605**	**0.0000**	**578.0174**	**578.0174**	**0.1829**	**0.0000**	**582.5894**

3.2 Grading (Phase 1) - 2019

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	8.6900e-003	6.9000e-003	0.0751	2.0000e-004	0.0198	1.6000e-004	0.0199	5.2400e-003	1.4000e-004	5.3900e-003	0.0000	18.3473	18.3473	5.7000e-004	0.0000	18.3616
Total	**8.6900e-003**	**6.9000e-003**	**0.0751**	**2.0000e-004**	**0.0198**	**1.6000e-004**	**0.0199**	**5.2400e-003**	**1.4000e-004**	**5.3900e-003**	**0.0000**	**18.3473**	**18.3473**	**5.7000e-004**	**0.0000**	**18.3616**

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					0.3603	0.0000	0.3603	0.1323	0.0000	0.1323	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4945	5.9250	3.0538	6.4300e-003		0.2406	0.2406		0.2214	0.2214	0.0000	578.0167	578.0167	0.1829	0.0000	582.5887
Total	**0.4945**	**5.9250**	**3.0538**	**6.4300e-003**	**0.3603**	**0.2406**	**0.6009**	**0.1323**	**0.2214**	**0.3536**	**0.0000**	**578.0167**	**578.0167**	**0.1829**	**0.0000**	**582.5887**

3.2 Grading (Phase 1) - 2019

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	8.6900e-003	6.9000e-003	0.0751	2.0000e-004	0.0198	1.6000e-004	0.0199	5.2400e-003	1.4000e-004	5.3900e-003	0.0000	18.3473	18.3473	5.7000e-004	0.0000	18.3616
Total	**8.6900e-003**	**6.9000e-003**	**0.0751**	**2.0000e-004**	**0.0198**	**1.6000e-004**	**0.0199**	**5.2400e-003**	**1.4000e-004**	**5.3900e-003**	**0.0000**	**18.3473**	**18.3473**	**5.7000e-004**	**0.0000**	**18.3616**

3.3 Building Construction - 2019

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	0.0310	0.3373	0.1627	3.7000e-004		0.0154	0.0154		0.0144	0.0144	0.0000	32.2904	32.2904	8.7600e-003	0.0000	32.5094
Total	**0.0310**	**0.3373**	**0.1627**	**3.7000e-004**		**0.0154**	**0.0154**		**0.0144**	**0.0144**	**0.0000**	**32.2904**	**32.2904**	**8.7600e-003**	**0.0000**	**32.5094**

3.3 Building Construction - 2019

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	7.7500e-003	0.2299	0.0577	5.1000e-004	0.0124	1.5000e-003	0.0139	3.5900e-003	1.4400e-003	5.0300e-003	0.0000	48.8210	48.8210	3.3800e-003	0.0000	48.9055
Worker	0.0273	0.0217	0.2353	6.4000e-004	0.0619	4.9000e-004	0.0624	0.0165	4.5000e-004	0.0169	0.0000	57.5289	57.5289	1.8000e-003	0.0000	57.5738
Total	**0.0350**	**0.2516**	**0.2930**	**1.1500e-003**	**0.0744**	**1.9900e-003**	**0.0763**	**0.0200**	**1.8900e-003**	**0.0219**	**0.0000**	**106.3499**	**106.3499**	**5.1800e-003**	**0.0000**	**106.4793**

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	0.0310	0.3373	0.1627	3.7000e-004		0.0154	0.0154		0.0144	0.0144	0.0000	32.2903	32.2903	8.7600e-003	0.0000	32.5094
Total	**0.0310**	**0.3373**	**0.1627**	**3.7000e-004**		**0.0154**	**0.0154**		**0.0144**	**0.0144**	**0.0000**	**32.2903**	**32.2903**	**8.7600e-003**	**0.0000**	**32.5094**

3.3 Building Construction - 2019

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	7.7500e-003	0.2299	0.0577	5.1000e-004	0.0124	1.5000e-003	0.0139	3.5900e-003	1.4400e-003	5.0300e-003	0.0000	48.8210	48.8210	3.3800e-003	0.0000	48.9055
Worker	0.0273	0.0217	0.2353	6.4000e-004	0.0619	4.9000e-004	0.0624	0.0165	4.5000e-004	0.0169	0.0000	57.5289	57.5289	1.8000e-003	0.0000	57.5738
Total	**0.0350**	**0.2516**	**0.2930**	**1.1500e-003**	**0.0744**	**1.9900e-003**	**0.0763**	**0.0200**	**1.8900e-003**	**0.0219**	**0.0000**	**106.3499**	**106.3499**	**5.1800e-003**	**0.0000**	**106.4793**

3.3 Building Construction - 2020

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	0.4406	4.8047	2.4404	5.6400e-003		0.2145	0.2145		0.2003	0.2003	0.0000	488.9792	488.9792	0.1340	0.0000	492.3302
Total	**0.4406**	**4.8047**	**2.4404**	**5.6400e-003**		**0.2145**	**0.2145**		**0.2003**	**0.2003**	**0.0000**	**488.9792**	**488.9792**	**0.1340**	**0.0000**	**492.3302**

3.3 Building Construction - 2020

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	0.1018	3.2433	0.8034	7.7300e-003	0.1916	0.0159	0.2075	0.0553	0.0152	0.0705	0.0000	747.4970	747.4970	0.0491	0.0000	748.7237
Worker	0.3883	0.2977	3.2944	9.5100e-003	0.9543	7.3700e-003	0.9617	0.2535	6.7900e-003	0.2602	0.0000	859.1114	859.1114	0.0247	0.0000	859.7277
Total	**0.4901**	**3.5411**	**4.0978**	**0.0172**	**1.1459**	**0.0233**	**1.1692**	**0.3087**	**0.0220**	**0.3307**	**0.0000**	**1,606.6084**	**1,606.6084**	**0.0737**	**0.0000**	**1,608.4514**

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	0.4406	4.8047	2.4404	5.6400e-003		0.2145	0.2145		0.2003	0.2003	0.0000	488.9786	488.9786	0.1340	0.0000	492.3296
Total	**0.4406**	**4.8047**	**2.4404**	**5.6400e-003**		**0.2145**	**0.2145**		**0.2003**	**0.2003**	**0.0000**	**488.9786**	**488.9786**	**0.1340**	**0.0000**	**492.3296**

3.3 Building Construction - 2020

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	0.1018	3.2433	0.8034	7.7300e-003	0.1916	0.0159	0.2075	0.0553	0.0152	0.0705	0.0000	747.4970	747.4970	0.0491	0.0000	748.7237
Worker	0.3883	0.2977	3.2944	9.5100e-003	0.9543	7.3700e-003	0.9617	0.2535	6.7900e-003	0.2602	0.0000	859.1114	859.1114	0.0247	0.0000	859.7277
Total	**0.4901**	**3.5411**	**4.0978**	**0.0172**	**1.1459**	**0.0233**	**1.1692**	**0.3087**	**0.0220**	**0.3307**	**0.0000**	**1,606.6084**	**1,606.6084**	**0.0737**	**0.0000**	**1,608.4514**

3.3 Building Construction - 2021

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	0.4063	4.4326	2.3745	5.6200e-003		0.1927	0.1927		0.1798	0.1798	0.0000	487.0975	487.0975	0.1327	0.0000	490.4150
Total	**0.4063**	**4.4326**	**2.3745**	**5.6200e-003**		**0.1927**	**0.1927**		**0.1798**	**0.1798**	**0.0000**	**487.0975**	**487.0975**	**0.1327**	**0.0000**	**490.4150**

3.3 Building Construction - 2021

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	0.0861	2.9295	0.7263	7.6300e-003	0.1908	5.8900e-003	0.1967	0.0551	5.6400e-003	0.0607	0.0000	739.1780	739.1780	0.0468	0.0000	740.3467
Worker	0.3612	0.2670	3.0197	9.1600e-003	0.9507	7.1300e-003	0.9578	0.2525	6.5700e-003	0.2591	0.0000	828.0985	828.0985	0.0222	0.0000	828.6538
Total	**0.4473**	**3.1964**	**3.7460**	**0.0168**	**1.1415**	**0.0130**	**1.1546**	**0.3075**	**0.0122**	**0.3198**	**0.0000**	**1,567.2765**	**1,567.2765**	**0.0690**	**0.0000**	**1,569.0004**

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	0.4063	4.4326	2.3745	5.6200e-003		0.1927	0.1927		0.1798	0.1798	0.0000	487.0969	487.0969	0.1327	0.0000	490.4144
Total	**0.4063**	**4.4326**	**2.3745**	**5.6200e-003**		**0.1927**	**0.1927**		**0.1798**	**0.1798**	**0.0000**	**487.0969**	**487.0969**	**0.1327**	**0.0000**	**490.4144**

3.3 Building Construction - 2021

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	0.0861	2.9295	0.7263	7.6300e-003	0.1908	5.8900e-003	0.1967	0.0551	5.6400e-003	0.0607	0.0000	739.1780	739.1780	0.0468	0.0000	740.3467
Worker	0.3612	0.2670	3.0197	9.1600e-003	0.9507	7.1300e-003	0.9578	0.2525	6.5700e-003	0.2591	0.0000	828.0985	828.0985	0.0222	0.0000	828.6538
Total	**0.4473**	**3.1964**	**3.7460**	**0.0168**	**1.1415**	**0.0130**	**1.1546**	**0.3075**	**0.0122**	**0.3198**	**0.0000**	**1,567.2765**	**1,567.2765**	**0.0690**	**0.0000**	**1,569.0004**

3.3 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3635	3.8693	2.2971	5.5900e-003		0.1657	0.1657		0.1546	0.1546	0.0000	484.7716	484.7716	0.1315	0.0000	488.0597
Total	**0.3635**	**3.8693**	**2.2971**	**5.5900e-003**		**0.1657**	**0.1657**		**0.1546**	**0.1546**	**0.0000**	**484.7716**	**484.7716**	**0.1315**	**0.0000**	**488.0597**

3.3 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	0.0805	2.7671	0.6838	7.5300e-003	0.1901	5.0900e-003	0.1952	0.0549	4.8700e-003	0.0597	0.0000	729.8627	729.8627	0.0448	0.0000	730.9830
Worker	0.3379	0.2402	2.7776	8.8000e-003	0.9470	6.9000e-003	0.9539	0.2515	6.3500e-003	0.2579	0.0000	795.3499	795.3499	0.0200	0.0000	795.8494
Total	**0.4183**	**3.0073**	**3.4614**	**0.0163**	**1.1372**	**0.0120**	**1.1491**	**0.3064**	**0.0112**	**0.3176**	**0.0000**	**1,525.2125**	**1,525.2125**	**0.0648**	**0.0000**	**1,526.8324**

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	0.3635	3.8693	2.2971	5.5900e-003		0.1657	0.1657		0.1546	0.1546	0.0000	484.7710	484.7710	0.1315	0.0000	488.0591
Total	**0.3635**	**3.8693**	**2.2971**	**5.5900e-003**		**0.1657**	**0.1657**		**0.1546**	**0.1546**	**0.0000**	**484.7710**	**484.7710**	**0.1315**	**0.0000**	**488.0591**

3.3 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	0.0805	2.7671	0.6838	7.5300e-003	0.1901	5.0900e-003	0.1952	0.0549	4.8700e-003	0.0597	0.0000	729.8627	729.8627	0.0448	0.0000	730.9830
Worker	0.3379	0.2402	2.7776	8.8000e-003	0.9470	6.9000e-003	0.9539	0.2515	6.3500e-003	0.2579	0.0000	795.3499	795.3499	0.0200	0.0000	795.8494
Total	**0.4183**	**3.0073**	**3.4614**	**0.0163**	**1.1372**	**0.0120**	**1.1491**	**0.3064**	**0.0112**	**0.3176**	**0.0000**	**1,525.2125**	**1,525.2125**	**0.0648**	**0.0000**	**1,526.8324**

3.3 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	0.3317	3.4066	2.2551	5.5900e-003		0.1452	0.1452		0.1355	0.1355	0.0000	484.5012	484.5012	0.1309	0.0000	487.7742
Total	**0.3317**	**3.4066**	**2.2551**	**5.5900e-003**		**0.1452**	**0.1452**		**0.1355**	**0.1355**	**0.0000**	**484.5012**	**484.5012**	**0.1309**	**0.0000**	**487.7742**

3.3 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	0.0601	2.0821	0.6114	7.2900e-003	0.1901	2.3700e-003	0.1925	0.0549	2.2600e-003	0.0571	0.0000	707.8628	707.8628	0.0390	0.0000	708.8367
Worker	0.3181	0.2173	2.5610	8.4700e-003	0.9470	6.7200e-003	0.9538	0.2515	6.1900e-003	0.2577	0.0000	765.6879	765.6879	0.0180	0.0000	766.1380
Total	**0.3781**	**2.2994**	**3.1724**	**0.0158**	**1.1372**	**9.0900e-003**	**1.1462**	**0.3064**	**8.4500e-003**	**0.3148**	**0.0000**	**1,473.5507**	**1,473.5507**	**0.0570**	**0.0000**	**1,474.9747**

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	0.3317	3.4066	2.2551	5.5900e-003		0.1452	0.1452		0.1355	0.1355	0.0000	484.5006	484.5006	0.1309	0.0000	487.7736
Total	**0.3317**	**3.4066**	**2.2551**	**5.5900e-003**		**0.1452**	**0.1452**		**0.1355**	**0.1355**	**0.0000**	**484.5006**	**484.5006**	**0.1309**	**0.0000**	**487.7736**

3.3 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	0.0601	2.0821	0.6114	7.2900e-003	0.1901	2.3700e-003	0.1925	0.0549	2.2600e-003	0.0571	0.0000	707.8628	707.8628	0.0390	0.0000	708.8367
Worker	0.3181	0.2173	2.5610	8.4700e-003	0.9470	6.7200e-003	0.9538	0.2515	6.1900e-003	0.2577	0.0000	765.6879	765.6879	0.0180	0.0000	766.1380
Total	**0.3781**	**2.2994**	**3.1724**	**0.0158**	**1.1372**	**9.0900e-003**	**1.1462**	**0.3064**	**8.4500e-003**	**0.3148**	**0.0000**	**1,473.5507**	**1,473.5507**	**0.0570**	**0.0000**	**1,474.9747**

3.3 Building Construction - 2024

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	0.3154	3.1865	2.2437	5.6300e-003		0.1323	0.1323		0.1234	0.1234	0.0000	488.3619	488.3619	0.1315	0.0000	491.6503
Total	**0.3154**	**3.1865**	**2.2437**	**5.6300e-003**		**0.1323**	**0.1323**		**0.1234**	**0.1234**	**0.0000**	**488.3619**	**488.3619**	**0.1315**	**0.0000**	**491.6503**

3.3 Building Construction - 2024

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	0.0592	2.0932	0.5982	7.3200e-003	0.1916	2.3600e-003	0.1939	0.0553	2.2500e-003	0.0575	0.0000	710.7878	710.7878	0.0386	0.0000	711.7535
Worker	0.3037	0.1995	2.4071	8.2500e-003	0.9543	6.6800e-003	0.9610	0.2535	6.1500e-003	0.2596	0.0000	746.1863	746.1863	0.0166	0.0000	746.6016
Total	**0.3630**	**2.2926**	**3.0052**	**0.0156**	**1.1459**	**9.0400e-003**	**1.1549**	**0.3087**	**8.4000e-003**	**0.3171**	**0.0000**	**1,456.9741**	**1,456.9741**	**0.0552**	**0.0000**	**1,458.3551**

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	0.3154	3.1865	2.2437	5.6300e-003		0.1323	0.1323		0.1234	0.1234	0.0000	488.3613	488.3613	0.1315	0.0000	491.6497
Total	**0.3154**	**3.1865**	**2.2437**	**5.6300e-003**		**0.1323**	**0.1323**		**0.1234**	**0.1234**	**0.0000**	**488.3613**	**488.3613**	**0.1315**	**0.0000**	**491.6497**

3.3 Building Construction - 2024

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	0.0592	2.0932	0.5982	7.3200e-003	0.1916	2.3600e-003	0.1939	0.0553	2.2500e-003	0.0575	0.0000	710.7878	710.7878	0.0386	0.0000	711.7535
Worker	0.3037	0.1995	2.4071	8.2500e-003	0.9543	6.6800e-003	0.9610	0.2535	6.1500e-003	0.2596	0.0000	746.1863	746.1863	0.0166	0.0000	746.6016
Total	**0.3630**	**2.2926**	**3.0052**	**0.0156**	**1.1459**	**9.0400e-003**	**1.1549**	**0.3087**	**8.4000e-003**	**0.3171**	**0.0000**	**1,456.9741**	**1,456.9741**	**0.0552**	**0.0000**	**1,458.3551**

3.3 Building Construction - 2025

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	0.2486	2.4207	1.9107	4.9000e-003		0.0987	0.0987		0.0921	0.0921	0.0000	424.8699	424.8699	0.1141	0.0000	427.7213
Total	**0.2486**	**2.4207**	**1.9107**	**4.9000e-003**		**0.0987**	**0.0987**		**0.0921**	**0.0921**	**0.0000**	**424.8699**	**424.8699**	**0.1141**	**0.0000**	**427.7213**

3.3 Building Construction - 2025

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	0.0502	1.8053	0.5067	6.3300e-003	0.1667	2.0200e-003	0.1687	0.0481	1.9300e-003	0.0500	0.0000	615.0754	615.0754	0.0331	0.0000	615.9019
Worker	0.2514	0.1587	1.9453	6.8900e-003	0.8305	5.7000e-003	0.8362	0.2206	5.2500e-003	0.2258	0.0000	623.7739	623.7739	0.0132	0.0000	624.1032
Total	**0.3016**	**1.9641**	**2.4521**	**0.0132**	**0.9972**	**7.7200e-003**	**1.0049**	**0.2687**	**7.1800e-003**	**0.2758**	**0.0000**	**1,238.8493**	**1,238.8493**	**0.0462**	**0.0000**	**1,240.0051**

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	0.2486	2.4207	1.9107	4.9000e-003		0.0987	0.0987		0.0921	0.0921	0.0000	424.8694	424.8694	0.1141	0.0000	427.7207
Total	**0.2486**	**2.4207**	**1.9107**	**4.9000e-003**		**0.0987**	**0.0987**		**0.0921**	**0.0921**	**0.0000**	**424.8694**	**424.8694**	**0.1141**	**0.0000**	**427.7207**

3.3 Building Construction - 2025

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	0.0502	1.8053	0.5067	6.3300e-003	0.1667	2.0200e-003	0.1687	0.0481	1.9300e-003	0.0500	0.0000	615.0754	615.0754	0.0331	0.0000	615.9019
Worker	0.2514	0.1587	1.9453	6.8900e-003	0.8305	5.7000e-003	0.8362	0.2206	5.2500e-003	0.2258	0.0000	623.7739	623.7739	0.0132	0.0000	624.1032
Total	**0.3016**	**1.9641**	**2.4521**	**0.0132**	**0.9972**	**7.7200e-003**	**1.0049**	**0.2687**	**7.1800e-003**	**0.2758**	**0.0000**	**1,238.8493**	**1,238.8493**	**0.0462**	**0.0000**	**1,240.0051**

3.4 Architectural Coating - 2020

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	2.8407					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0354	0.2458	0.2674	4.3000e-004		0.0162	0.0162		0.0162	0.0162	0.0000	37.2775	37.2775	2.8900e-003	0.0000	37.3497
Total	**2.8761**	**0.2458**	**0.2674**	**4.3000e-004**		**0.0162**	**0.0162**		**0.0162**	**0.0162**	**0.0000**	**37.2775**	**37.2775**	**2.8900e-003**	**0.0000**	**37.3497**

3.4 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0650	0.0499	0.5516	1.5900e-003	0.1598	1.2300e-003	0.1610	0.0424	1.1400e-003	0.0436	0.0000	143.8387	143.8387	4.1300e-003	0.0000	143.9419
Total	**0.0650**	**0.0499**	**0.5516**	**1.5900e-003**	**0.1598**	**1.2300e-003**	**0.1610**	**0.0424**	**1.1400e-003**	**0.0436**	**0.0000**	**143.8387**	**143.8387**	**4.1300e-003**	**0.0000**	**143.9419**

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	2.8407					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0354	0.2458	0.2674	4.3000e-004		0.0162	0.0162		0.0162	0.0162	0.0000	37.2775	37.2775	2.8900e-003	0.0000	37.3496
Total	**2.8761**	**0.2458**	**0.2674**	**4.3000e-004**		**0.0162**	**0.0162**		**0.0162**	**0.0162**	**0.0000**	**37.2775**	**37.2775**	**2.8900e-003**	**0.0000**	**37.3496**

3.4 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0650	0.0499	0.5516	1.5900e-003	0.1598	1.2300e-003	0.1610	0.0424	1.1400e-003	0.0436	0.0000	143.8387	143.8387	4.1300e-003	0.0000	143.9419
Total	**0.0650**	**0.0499**	**0.5516**	**1.5900e-003**	**0.1598**	**1.2300e-003**	**0.1610**	**0.0424**	**1.1400e-003**	**0.0436**	**0.0000**	**143.8387**	**143.8387**	**4.1300e-003**	**0.0000**	**143.9419**

3.4 Architectural Coating - 2021

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	3.3855					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0381	0.2657	0.3163	5.2000e-004		0.0164	0.0164		0.0164	0.0164	0.0000	44.4266	44.4266	3.0500e-003	0.0000	44.5028
Total	**3.4236**	**0.2657**	**0.3163**	**5.2000e-004**		**0.0164**	**0.0164**		**0.0164**	**0.0164**	**0.0000**	**44.4266**	**44.4266**	**3.0500e-003**	**0.0000**	**44.5028**

3.4 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0723	0.0535	0.6048	1.8300e-003	0.1904	1.4300e-003	0.1919	0.0506	1.3200e-003	0.0519	0.0000	165.8691	165.8691	4.4500e-003	0.0000	165.9803
Total	**0.0723**	**0.0535**	**0.6048**	**1.8300e-003**	**0.1904**	**1.4300e-003**	**0.1919**	**0.0506**	**1.3200e-003**	**0.0519**	**0.0000**	**165.8691**	**165.8691**	**4.4500e-003**	**0.0000**	**165.9803**

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	3.3855					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0381	0.2657	0.3163	5.2000e-004		0.0164	0.0164		0.0164	0.0164	0.0000	44.4266	44.4266	3.0500e-003	0.0000	44.5028
Total	**3.4236**	**0.2657**	**0.3163**	**5.2000e-004**		**0.0164**	**0.0164**		**0.0164**	**0.0164**	**0.0000**	**44.4266**	**44.4266**	**3.0500e-003**	**0.0000**	**44.5028**

3.4 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0723	0.0535	0.6048	1.8300e-003	0.1904	1.4300e-003	0.1919	0.0506	1.3200e-003	0.0519	0.0000	165.8691	165.8691	4.4500e-003	0.0000	165.9803
Total	**0.0723**	**0.0535**	**0.6048**	**1.8300e-003**	**0.1904**	**1.4300e-003**	**0.1919**	**0.0506**	**1.3200e-003**	**0.0519**	**0.0000**	**165.8691**	**165.8691**	**4.4500e-003**	**0.0000**	**165.9803**

3.4 Architectural Coating - 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					
Archit. Coating	3.3726					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0355	0.2441	0.3144	5.2000e-004		0.0142	0.0142		0.0142	0.0142	0.0000	44.2564	44.2564	2.8800e-003	0.0000	44.3284
Total	**3.4080**	**0.2441**	**0.3144**	**5.2000e-004**		**0.0142**	**0.0142**		**0.0142**	**0.0142**	**0.0000**	**44.2564**	**44.2564**	**2.8800e-003**	**0.0000**	**44.3284**

3.4 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0677	0.0481	0.5564	1.7600e-003	0.1897	1.3800e-003	0.1911	0.0504	1.2700e-003	0.0517	0.0000	159.3095	159.3095	4.0000e-003	0.0000	159.4096
Total	**0.0677**	**0.0481**	**0.5564**	**1.7600e-003**	**0.1897**	**1.3800e-003**	**0.1911**	**0.0504**	**1.2700e-003**	**0.0517**	**0.0000**	**159.3095**	**159.3095**	**4.0000e-003**	**0.0000**	**159.4096**

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	3.3726					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0355	0.2441	0.3144	5.2000e-004		0.0142	0.0142		0.0142	0.0142	0.0000	44.2564	44.2564	2.8800e-003	0.0000	44.3284
Total	**3.4080**	**0.2441**	**0.3144**	**5.2000e-004**		**0.0142**	**0.0142**		**0.0142**	**0.0142**	**0.0000**	**44.2564**	**44.2564**	**2.8800e-003**	**0.0000**	**44.3284**

3.4 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0677	0.0481	0.5564	1.7600e-003	0.1897	1.3800e-003	0.1911	0.0504	1.2700e-003	0.0517	0.0000	159.3095	159.3095	4.0000e-003	0.0000	159.4096
Total	**0.0677**	**0.0481**	**0.5564**	**1.7600e-003**	**0.1897**	**1.3800e-003**	**0.1911**	**0.0504**	**1.2700e-003**	**0.0517**	**0.0000**	**159.3095**	**159.3095**	**4.0000e-003**	**0.0000**	**159.4096**

3.4 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	3.3726					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0332	0.2259	0.3139	5.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	44.2564	44.2564	2.6500e-003	0.0000	44.3226
Total	**3.4058**	**0.2259**	**0.3139**	**5.2000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**44.2564**	**44.2564**	**2.6500e-003**	**0.0000**	**44.3226**

3.4 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	0.0637	0.0435	0.5130	1.7000e-003	0.1897	1.3500e-003	0.1910	0.0504	1.2400e-003	0.0516	0.0000	153.3682	153.3682	3.6100e-003	0.0000	153.4584
Total	**0.0637**	**0.0435**	**0.5130**	**1.7000e-003**	**0.1897**	**1.3500e-003**	**0.1910**	**0.0504**	**1.2400e-003**	**0.0516**	**0.0000**	**153.3682**	**153.3682**	**3.6100e-003**	**0.0000**	**153.4584**

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	3.3726					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0332	0.2259	0.3139	5.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	44.2564	44.2564	2.6500e-003	0.0000	44.3225
Total	**3.4058**	**0.2259**	**0.3139**	**5.2000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**44.2564**	**44.2564**	**2.6500e-003**	**0.0000**	**44.3225**

3.4 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	0.0637	0.0435	0.5130	1.7000e-003	0.1897	1.3500e-003	0.1910	0.0504	1.2400e-003	0.0516	0.0000	153.3682	153.3682	3.6100e-003	0.0000	153.4584
Total	**0.0637**	**0.0435**	**0.5130**	**1.7000e-003**	**0.1897**	**1.3500e-003**	**0.1910**	**0.0504**	**1.2400e-003**	**0.0516**	**0.0000**	**153.3682**	**153.3682**	**3.6100e-003**	**0.0000**	**153.4584**

3.4 Architectural Coating - 2024

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	3.3985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0316	0.2129	0.3162	5.2000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	44.5968	44.5968	2.5100e-003	0.0000	44.6596
Total	**3.4301**	**0.2129**	**0.3162**	**5.2000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**44.5968**	**44.5968**	**2.5100e-003**	**0.0000**	**44.6596**

3.4 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0608	0.0400	0.4821	1.6500e-003	0.1912	1.3400e-003	0.1925	0.0508	1.2300e-003	0.0520	0.0000	149.4620	149.4620	3.3300e-003	0.0000	149.5452
Total	**0.0608**	**0.0400**	**0.4821**	**1.6500e-003**	**0.1912**	**1.3400e-003**	**0.1925**	**0.0508**	**1.2300e-003**	**0.0520**	**0.0000**	**149.4620**	**149.4620**	**3.3300e-003**	**0.0000**	**149.5452**

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	3.3985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0316	0.2129	0.3162	5.2000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	44.5968	44.5968	2.5100e-003	0.0000	44.6596
Total	**3.4301**	**0.2129**	**0.3162**	**5.2000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**44.5968**	**44.5968**	**2.5100e-003**	**0.0000**	**44.6596**

3.4 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0608	0.0400	0.4821	1.6500e-003	0.1912	1.3400e-003	0.1925	0.0508	1.2300e-003	0.0520	0.0000	149.4620	149.4620	3.3300e-003	0.0000	149.5452
Total	**0.0608**	**0.0400**	**0.4821**	**1.6500e-003**	**0.1912**	**1.3400e-003**	**0.1925**	**0.0508**	**1.2300e-003**	**0.0520**	**0.0000**	**149.4620**	**149.4620**	**3.3300e-003**	**0.0000**	**149.5452**

3.4 Architectural Coating - 2025

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	2.9575					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0260	0.1741	0.2750	4.5000e-004		7.8300e-003	7.8300e-003		7.8300e-003	7.8300e-003	0.0000	38.8095	38.8095	2.1200e-003	0.0000	38.8624
Total	**2.9834**	**0.1741**	**0.2750**	**4.5000e-004**		**7.8300e-003**	**7.8300e-003**		**7.8300e-003**	**7.8300e-003**	**0.0000**	**38.8095**	**38.8095**	**2.1200e-003**	**0.0000**	**38.8624**

3.4 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0504	0.0318	0.3897	1.3800e-003	0.1664	1.1400e-003	0.1675	0.0442	1.0500e-003	0.0452	0.0000	124.9427	124.9427	2.6400e-003	0.0000	125.0086
Total	**0.0504**	**0.0318**	**0.3897**	**1.3800e-003**	**0.1664**	**1.1400e-003**	**0.1675**	**0.0442**	**1.0500e-003**	**0.0452**	**0.0000**	**124.9427**	**124.9427**	**2.6400e-003**	**0.0000**	**125.0086**

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	2.9575					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0260	0.1741	0.2750	4.5000e-004		7.8300e-003	7.8300e-003		7.8300e-003	7.8300e-003	0.0000	38.8094	38.8094	2.1200e-003	0.0000	38.8623
Total	**2.9834**	**0.1741**	**0.2750**	**4.5000e-004**		**7.8300e-003**	**7.8300e-003**		**7.8300e-003**	**7.8300e-003**	**0.0000**	**38.8094**	**38.8094**	**2.1200e-003**	**0.0000**	**38.8623**

3.4 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0504	0.0318	0.3897	1.3800e-003	0.1664	1.1400e-003	0.1675	0.0442	1.0500e-003	0.0452	0.0000	124.9427	124.9427	2.6400e-003	0.0000	125.0086
Total	**0.0504**	**0.0318**	**0.3897**	**1.3800e-003**	**0.1664**	**1.1400e-003**	**0.1675**	**0.0442**	**1.0500e-003**	**0.0452**	**0.0000**	**124.9427**	**124.9427**	**2.6400e-003**	**0.0000**	**125.0086**

3.5 Grading (Phase 2) - 2024

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					0.9238	0.0000	0.9238	0.3391	0.0000	0.3391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3401	3.5079	2.4891	6.4400e-003		0.1414	0.1414		0.1301	0.1301	0.0000	565.2818	565.2818	0.1828	0.0000	569.8524
Total	**0.3401**	**3.5079**	**2.4891**	**6.4400e-003**	**0.9238**	**0.1414**	**1.0652**	**0.3391**	**0.1301**	**0.4692**	**0.0000**	**565.2818**	**565.2818**	**0.1828**	**0.0000**	**569.8524**

3.5 Grading (Phase 2) - 2024

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	6.2900e-003	4.1300e-003	0.0498	1.7000e-004	0.0198	1.4000e-004	0.0199	5.2400e-003	1.3000e-004	5.3700e-003	0.0000	15.4412	15.4412	3.4000e-004	0.0000	15.4498
Total	**6.2900e-003**	**4.1300e-003**	**0.0498**	**1.7000e-004**	**0.0198**	**1.4000e-004**	**0.0199**	**5.2400e-003**	**1.3000e-004**	**5.3700e-003**	**0.0000**	**15.4412**	**15.4412**	**3.4000e-004**	**0.0000**	**15.4498**

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					0.3603	0.0000	0.3603	0.1323	0.0000	0.1323	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3401	3.5079	2.4891	6.4400e-003		0.1414	0.1414		0.1301	0.1301	0.0000	565.2811	565.2811	0.1828	0.0000	569.8517
Total	**0.3401**	**3.5079**	**2.4891**	**6.4400e-003**	**0.3603**	**0.1414**	**0.5017**	**0.1323**	**0.1301**	**0.2624**	**0.0000**	**565.2811**	**565.2811**	**0.1828**	**0.0000**	**569.8517**

3.5 Grading (Phase 2) - 2024

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	6.2900e-003	4.1300e-003	0.0498	1.7000e-004	0.0198	1.4000e-004	0.0199	5.2400e-003	1.3000e-004	5.3700e-003	0.0000	15.4412	15.4412	3.4000e-004	0.0000	15.4498
Total	**6.2900e-003**	**4.1300e-003**	**0.0498**	**1.7000e-004**	**0.0198**	**1.4000e-004**	**0.0199**	**5.2400e-003**	**1.3000e-004**	**5.3700e-003**	**0.0000**	**15.4412**	**15.4412**	**3.4000e-004**	**0.0000**	**15.4498**

3.6 Paving - 2024

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	0.0430	0.4143	0.6362	9.9000e-004		0.0204	0.0204		0.0188	0.0188	0.0000	87.1154	87.1154	0.0282	0.0000	87.8198
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0430**	**0.4143**	**0.6362**	**9.9000e-004**		**0.0204**	**0.0204**		**0.0188**	**0.0188**	**0.0000**	**87.1154**	**87.1154**	**0.0282**	**0.0000**	**87.8198**

3.6 Paving - 2024

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	2.2800e-003	1.5000e-003	0.0181	6.0000e-005	7.1600e-003	5.0000e-005	7.2100e-003	1.9000e-003	5.0000e-005	1.9500e-003	0.0000	5.5974	5.5974	1.2000e-004	0.0000	5.6005
Total	**2.2800e-003**	**1.5000e-003**	**0.0181**	**6.0000e-005**	**7.1600e-003**	**5.0000e-005**	**7.2100e-003**	**1.9000e-003**	**5.0000e-005**	**1.9500e-003**	**0.0000**	**5.5974**	**5.5974**	**1.2000e-004**	**0.0000**	**5.6005**

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	0.0430	0.4143	0.6362	9.9000e-004		0.0204	0.0204		0.0188	0.0188	0.0000	87.1153	87.1153	0.0282	0.0000	87.8197
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0430**	**0.4143**	**0.6362**	**9.9000e-004**		**0.0204**	**0.0204**		**0.0188**	**0.0188**	**0.0000**	**87.1153**	**87.1153**	**0.0282**	**0.0000**	**87.8197**

3.6 Paving - 2024

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	2.2800e-003	1.5000e-003	0.0181	6.0000e-005	7.1600e-003	5.0000e-005	7.2100e-003	1.9000e-003	5.0000e-005	1.9500e-003	0.0000	5.5974	5.5974	1.2000e-004	0.0000	5.6005
Total	**2.2800e-003**	**1.5000e-003**	**0.0181**	**6.0000e-005**	**7.1600e-003**	**5.0000e-005**	**7.2100e-003**	**1.9000e-003**	**5.0000e-005**	**1.9500e-003**	**0.0000**	**5.5974**	**5.5974**	**1.2000e-004**	**0.0000**	**5.6005**

3.6 Paving - 2025

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	0.1112	1.0427	1.7712	2.7700e-003		0.0509	0.0509		0.0468	0.0468	0.0000	243.2340	243.2340	0.0787	0.0000	245.2006
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1112**	**1.0427**	**1.7712**	**2.7700e-003**		**0.0509**	**0.0509**		**0.0468**	**0.0468**	**0.0000**	**243.2340**	**243.2340**	**0.0787**	**0.0000**	**245.2006**

3.6 Paving - 2025

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	6.0500e-003	3.8200e-003	0.0468	1.7000e-004	0.0200	1.4000e-004	0.0201	5.3100e-003	1.3000e-004	5.4400e-003	0.0000	15.0183	15.0183	3.2000e-004	0.0000	15.0263
Total	**6.0500e-003**	**3.8200e-003**	**0.0468**	**1.7000e-004**	**0.0200**	**1.4000e-004**	**0.0201**	**5.3100e-003**	**1.3000e-004**	**5.4400e-003**	**0.0000**	**15.0183**	**15.0183**	**3.2000e-004**	**0.0000**	**15.0263**

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	0.1112	1.0427	1.7712	2.7700e-003		0.0509	0.0509		0.0468	0.0468	0.0000	243.2337	243.2337	0.0787	0.0000	245.2003
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1112**	**1.0427**	**1.7712**	**2.7700e-003**		**0.0509**	**0.0509**		**0.0468**	**0.0468**	**0.0000**	**243.2337**	**243.2337**	**0.0787**	**0.0000**	**245.2003**

3.6 Paving - 2025

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	6.0500e-003	3.8200e-003	0.0468	1.7000e-004	0.0200	1.4000e-004	0.0201	5.3100e-003	1.3000e-004	5.4400e-003	0.0000	15.0183	15.0183	3.2000e-004	0.0000	15.0263
Total	**6.0500e-003**	**3.8200e-003**	**0.0468**	**1.7000e-004**	**0.0200**	**1.4000e-004**	**0.0201**	**5.3100e-003**	**1.3000e-004**	**5.4400e-003**	**0.0000**	**15.0183**	**15.0183**	**3.2000e-004**	**0.0000**	**15.0263**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Health Club	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Regional Shopping Center	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Health Club	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Single Family Housing	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	14.0163	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Unmitigated	14.0163	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075

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	1.9872					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.7006					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3285	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Total	**14.0163**	**0.1259**	**10.9345**	**5.8000e-004**		**0.0607**	**0.0607**		**0.0607**	**0.0607**	**0.0000**	**17.8792**	**17.8792**	**0.0171**	**0.0000**	**18.3075**

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	1.9872					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.7006					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3285	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Total	**14.0163**	**0.1259**	**10.9345**	**5.8000e-004**		**0.0607**	**0.0607**		**0.0607**	**0.0607**	**0.0000**	**17.8792**	**17.8792**	**0.0171**	**0.0000**	**18.3075**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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APPENDIX 3.2:

CALEEMOD ANNUAL OPERATIONS EMISSIONS MODEL OUTPUTS (WITHOUT PDFS, BACMS, AND MMS)

Legado (Operations - Unmitigated)

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	11.23	Acre	11.23	489,178.80	0
Health Club	10.00	1000sqft	1.67	10,000.00	0
Single Family Housing	1,061.00	Dwelling Unit	216.90	3,001,750.00	2971
Regional Shopping Center	225.00	1000sqft	20.10	225,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Legado (Operations - Unmitigated) - Riverside-South Coast County, Annual

Project Characteristics -

Land Use - As per the Legado Community Development Plan, the Residential Planning Area is 216.9 acres; the Commercial Area is 20.1 acres; and the Community Park/Center is 12.9 acres. It should also be noted that as per the Plan, the population is 2.8 persons per household = 2,971 persons. As home size has not been provided, it is assumed that 50% of the lot acreage is the building sf.

Construction Phase - Operations Run Only

Off-road Equipment - Operations Run Only

Vehicle Trips - Trip Rates for Single Family Residential, Regional Shopping Center, and Health Center based on information provided in ITE 10th Edition. Trip Rate for City Park based on San Diego Municipal Code Land Development Code Trip Generation Manual.

Water And Wastewater - As per the WSA, the water demand was calculated for the Project based on the SP's proposed land use and EMWD demand factor.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	1.00
tblLandUse	LandUseSquareFeet	1,909,800.00	3,001,750.00
tblLandUse	LotAcreage	0.23	1.67
tblLandUse	LotAcreage	344.48	216.90
tblLandUse	LotAcreage	5.17	20.10
tblLandUse	Population	3,034.00	2,971.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblVehicleTrips	WD_TR	1.89	50.00
tblVehicleTrips	WD_TR	32.93	33.82
tblVehicleTrips	WD_TR	42.70	41.76
tblVehicleTrips	WD_TR	9.52	7.78
tblWater	IndoorWaterUseRate	591,431.44	1,341,010.00
tblWater	IndoorWaterUseRate	16,666,317.33	16,140,300.00
tblWater	IndoorWaterUseRate	69,128,421.18	170,396,600.00
tblWater	OutdoorWaterUseRate	13,380,335.56	9,017,690.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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	16.5524	0.4011	17.6792	0.0178		1.0738	1.0738		1.0738	1.0738	112.6984	234.4469	347.1453	0.3532	7.6500e-003	358.2553
Energy	0.1795	1.5362	0.6705	9.7900e-003		0.1240	0.1240		0.1240	0.1240	0.0000	5,660.7690	5,660.7690	0.1944	0.0658	5,685.2215
Mobile	4.0606	30.5685	46.9590	0.2373	19.6478	0.1369	19.7847	5.2622	0.1275	5.3897	0.0000	22,056.8664	22,056.8664	0.9918	0.0000	22,081.6612
Waste						0.0000	0.0000		0.0000	0.0000	306.9893	0.0000	306.9893	18.1426	0.0000	760.5531
Water						0.0000	0.0000		0.0000	0.0000	59.6050	1,003.0978	1,062.7028	6.1634	0.1531	1,262.4186
Total	**20.7925**	**32.5058**	**65.3087**	**0.2648**	**19.6478**	**1.3347**	**20.9825**	**5.2622**	**1.3253**	**6.5875**	**479.2927**	**28,955.1801**	**29,434.4729**	**25.8454**	**0.2265**	**30,148.1097**

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	16.5524	0.4011	17.6792	0.0178		1.0738	1.0738		1.0738	1.0738	112.6984	234.4469	347.1453	0.3532	7.6500e-003	358.2553
Energy	0.1795	1.5362	0.6705	9.7900e-003		0.1240	0.1240		0.1240	0.1240	0.0000	5,660.7690	5,660.7690	0.1944	0.0658	5,685.2215
Mobile	4.0606	30.5685	46.9590	0.2373	19.6478	0.1369	19.7847	5.2622	0.1275	5.3897	0.0000	22,056.8664	22,056.8664	0.9918	0.0000	22,081.6612
Waste						0.0000	0.0000		0.0000	0.0000	306.9893	0.0000	306.9893	18.1426	0.0000	760.5531
Water						0.0000	0.0000		0.0000	0.0000	59.6050	1,003.0978	1,062.7028	6.1634	0.1531	1,262.4186
Total	**20.7925**	**32.5058**	**65.3087**	**0.2648**	**19.6478**	**1.3347**	**20.9825**	**5.2622**	**1.3253**	**6.5875**	**479.2927**	**28,955.1801**	**29,434.4729**	**25.8454**	**0.2265**	**30,148.1097**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2019	4/1/2019	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; 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
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

3.2 Demolition - 2019

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

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	4.0606	30.5685	46.9590	0.2373	19.6478	0.1369	19.7847	5.2622	0.1275	5.3897	0.0000	22,056.8664	22,056.8664	0.9918	0.0000	22,081.6612
Unmitigated	4.0606	30.5685	46.9590	0.2373	19.6478	0.1369	19.7847	5.2622	0.1275	5.3897	0.0000	22,056.8664	22,056.8664	0.9918	0.0000	22,081.6612

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	561.50	255.48	187.99	1,336,401	1,336,401
Health Club	338.20	208.70	267.30	662,102	662,102
Regional Shopping Center	9,396.00	11,243.25	5679.00	19,744,371	19,744,371
Single Family Housing	8,254.58	10,514.51	9145.82	29,745,443	29,745,443
Total	18,550.28	22,221.94	15,280.11	51,488,317	51,488,317

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
Single Family Housing	14.70	5.90	8.70	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
City Park	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789
Health Club	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789
Regional Shopping Center	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789
Single Family Housing	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789

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	3,884.4525	3,884.4525	0.1604	0.0332	3,898.3492
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,884.4525	3,884.4525	0.1604	0.0332	3,898.3492
NaturalGas Mitigated	0.1795	1.5362	0.6705	9.7900e-003		0.1240	0.1240		0.1240	0.1240	0.0000	1,776.3166	1,776.3166	0.0341	0.0326	1,786.8723
NaturalGas Unmitigated	0.1795	1.5362	0.6705	9.7900e-003		0.1240	0.1240		0.1240	0.1240	0.0000	1,776.3166	1,776.3166	0.0341	0.0326	1,786.8723

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	324900	1.7500e-003	0.0159	0.0134	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.3379	17.3379	3.3000e-004	3.2000e-004	17.4409
Regional Shopping Center	499500	2.6900e-003	0.0245	0.0206	1.5000e-004		1.8600e-003	1.8600e-003		1.8600e-003	1.8600e-003	0.0000	26.6552	26.6552	5.1000e-004	4.9000e-004	26.8136
Single Family Housing	3.24625e+007	0.1750	1.4958	0.6365	9.5500e-003		0.1209	0.1209		0.1209	0.1209	0.0000	1,732.3234	1,732.3234	0.0332	0.0318	1,742.6178
Total		**0.1795**	**1.5362**	**0.6705**	**9.8000e-003**		**0.1240**	**0.1240**		**0.1240**	**0.1240**	**0.0000**	**1,776.3166**	**1,776.3166**	**0.0340**	**0.0326**	**1,786.8723**

5.2 Energy by Land Use - NaturalGas

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	324900	1.7500e-003	0.0159	0.0134	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.3379	17.3379	3.3000e-004	3.2000e-004	17.4409
Regional Shopping Center	499500	2.6900e-003	0.0245	0.0206	1.5000e-004		1.8600e-003	1.8600e-003		1.8600e-003	1.8600e-003	0.0000	26.6552	26.6552	5.1000e-004	4.9000e-004	26.8136
Single Family Housing	3.24625e+007	0.1750	1.4958	0.6365	9.5500e-003		0.1209	0.1209		0.1209	0.1209	0.0000	1,732.3234	1,732.3234	0.0332	0.0318	1,742.6178
Total		**0.1795**	**1.5362**	**0.6705**	**9.8000e-003**		**0.1240**	**0.1240**		**0.1240**	**0.1240**	**0.0000**	**1,776.3166**	**1,776.3166**	**0.0340**	**0.0326**	**1,786.8723**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Health Club	101500	32.3401	1.3400e-003	2.8000e-004	32.4558
Regional Shopping Center	2.84175e+006	905.4424	0.0374	7.7300e-003	908.6817
Single Family Housing	9.24819e+006	2,946.6700	0.1217	0.0252	2,957.2118
Total		**3,884.4525**	**0.1604**	**0.0332**	**3,898.3492**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Health Club	101500	32.3401	1.3400e-003	2.8000e-004	32.4558
Regional Shopping Center	2.84175e+006	905.4424	0.0374	7.7300e-003	908.6817
Single Family Housing	9.24819e+006	2,946.6700	0.1217	0.0252	2,957.2118
Total		**3,884.4525**	**0.1604**	**0.0332**	**3,898.3492**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	16.5524	0.4011	17.6792	0.0178		1.0738	1.0738		1.0738	1.0738	112.6984	234.4469	347.1453	0.3532	7.6500e-003	358.2553
Unmitigated	16.5524	0.4011	17.6792	0.0178		1.0738	1.0738		1.0738	1.0738	112.6984	234.4469	347.1453	0.3532	7.6500e-003	358.2553

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	1.0481					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.7006					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4753	0.2752	6.7447	0.0172		1.0131	1.0131		1.0131	1.0131	112.6984	216.5677	329.2661	0.3361	7.6500e-003	339.9478
Landscaping	0.3285	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Total	**16.5524**	**0.4011**	**17.6792**	**0.0178**		**1.0738**	**1.0738**		**1.0738**	**1.0738**	**112.6984**	**234.4469**	**347.1454**	**0.3532**	**7.6500e-003**	**358.2553**

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	1.0481					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.7006					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4753	0.2752	6.7447	0.0172		1.0131	1.0131		1.0131	1.0131	112.6984	216.5677	329.2661	0.3361	7.6500e-003	339.9478
Landscaping	0.3285	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Total	**16.5524**	**0.4011**	**17.6792**	**0.0178**		**1.0738**	**1.0738**		**1.0738**	**1.0738**	**112.6984**	**234.4469**	**347.1454**	**0.3532**	**7.6500e-003**	**358.2553**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1,062.7028	6.1634	0.1531	1,262.4186
Unmitigated	1,062.7028	6.1634	0.1531	1,262.4186

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 9.01769	31.9216	1.3200e-003	2.7000e-004	32.0358
Health Club	1.34101 / 0.36249	7.2722	0.0440	1.0900e-003	8.6965
Regional Shopping Center	16.1403 / 10.2148	108.2423	0.5302	0.0133	125.4602
Single Family Housing	170.397 / 43.581	915.2668	5.5879	0.1385	1,096.2260
Total		**1,062.7028**	**6.1634**	**0.1531**	**1,262.4186**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 9.01769	31.9216	1.3200e-003	2.7000e-004	32.0358
Health Club	1.34101 / 0.36249	7.2722	0.0440	1.0900e-003	8.6965
Regional Shopping Center	16.1403 / 10.2148	108.2423	0.5302	0.0133	125.4602
Single Family Housing	170.397 / 43.581	915.2668	5.5879	0.1385	1,096.2260
Total		**1,062.7028**	**6.1634**	**0.1531**	**1,262.4186**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	306.9893	18.1426	0.0000	760.5531
Unmitigated	306.9893	18.1426	0.0000	760.5531

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.97	0.1969	0.0116	0.0000	0.4878
Health Club	57	11.5705	0.6838	0.0000	28.6654
Regional Shopping Center	236.25	47.9566	2.8342	0.0000	118.8105
Single Family Housing	1218.11	247.2653	14.6130	0.0000	612.5894
Total		**306.9893**	**18.1426**	**0.0000**	**760.5531**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.97	0.1969	0.0116	0.0000	0.4878
Health Club	57	11.5705	0.6838	0.0000	28.6654
Regional Shopping Center	236.25	47.9566	2.8342	0.0000	118.8105
Single Family Housing	1218.11	247.2653	14.6130	0.0000	612.5894
Total		**306.9893**	**18.1426**	**0.0000**	**760.5531**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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APPENDIX 3.3:

CALEEMOD ANNUAL OPERATIONS EMISSIONS MODEL OUTPUTS (WITH PDFS, BACMS, AND MMS)

Legado (Operations - Mitigated)

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	11.23	Acre	11.23	489,178.80	0
Health Club	10.00	1000sqft	1.67	10,000.00	0
Single Family Housing	1,061.00	Dwelling Unit	216.90	3,001,750.00	2971
Regional Shopping Center	225.00	1000sqft	20.10	225,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Legado (Operations - Mitigated) - Riverside-South Coast County, Annual

Project Characteristics -

Land Use - As per the Legado Community Development Plan, the Residential Planning Area is 216.9 acres; the Commercial Area is 20.1 acres; and the Community Park/Center is 12.9 acres. It should also be noted that as per the Plan, the population is 2.8 persons per household = 2,971 persons. As home size has not been provided, it is assumed that 50% of the lot acreage is the building sf.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Vehicle Trips - Trip Rates for Single Family Residential, Regional Shopping Center, and Health Center based on information provided in ITE 10th Edition. Trip Rate for City Park based on San Diego Municipal Code Land Development Code Trip Generation Manual.

Woodstoves - Rule 445

Energy Use - Homes built under the 2019 standards will use about 53 percent less energy than those under the 2016 standards due to energey efficiency measures and rooftop solar generation. Nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades

Water And Wastewater - A 20% water reduction will be applied to outdoor water use for both the residential and retail components of the proposed Project.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	1.00
tblEnergyUse	LightingElect	2.93	2.05
tblEnergyUse	LightingElect	5.61	3.93
tblEnergyUse	LightingElect	1,608.84	756.15
tblEnergyUse	T24E	2.20	1.54
tblEnergyUse	T24E	4.58	3.21
tblEnergyUse	T24E	951.67	447.28
tblEnergyUse	T24NG	15.36	10.75
tblEnergyUse	T24NG	1.92	1.34
tblEnergyUse	T24NG	24,566.15	11,546.09
tblFireplaces	NumberGas	901.85	1,061.00
tblFireplaces	NumberNoFireplace	106.10	0.00
tblFireplaces	NumberWood	53.05	0.00
tblLandUse	LandUseSquareFeet	1,909,800.00	3,001,750.00
tblLandUse	LotAcreage	0.23	1.67

tblLandUse	LotAcreage	344.48	216.90
tblLandUse	LotAcreage	5.17	20.10
tblLandUse	Population	3,034.00	2,971.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblVehicleTrips	DV_TP	35.00	12.00
tblVehicleTrips	PB_TP	11.00	34.00
tblVehicleTrips	WD_TR	1.89	50.00
tblVehicleTrips	WD_TR	32.93	33.82
tblVehicleTrips	WD_TR	42.70	41.76
tblVehicleTrips	WD_TR	9.52	7.78
tblWater	IndoorWaterUseRate	591,431.44	1,341,010.00
tblWater	IndoorWaterUseRate	16,666,317.33	16,140,300.00
tblWater	IndoorWaterUseRate	69,128,421.18	170,396,600.00
tblWater	OutdoorWaterUseRate	13,380,335.56	9,017,690.00
tblWater	OutdoorWaterUseRate	362,490.24	289,992.00
tblWater	OutdoorWaterUseRate	10,214,839.66	8,171,872.00
tblWater	OutdoorWaterUseRate	43,580,961.18	34,864,769.00
tblWoodstoves	NumberCatalytic	53.05	0.00
tblWoodstoves	NumberNoncatalytic	53.05	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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	13.1029	0.3460	11.0281	1.9800e-003		0.0785	0.0785		0.0785	0.0785	0.0000	272.6647	272.6647	0.0220	4.6700e-003	274.6071
Energy	0.1041	0.8910	0.3923	5.6800e-003		0.0719	0.0719		0.0719	0.0719	0.0000	4,231.8306	4,231.8306	0.1519	0.0462	4,249.4054
Mobile	4.0166	30.2759	45.7341	0.2305	18.9878	0.1329	19.1207	5.0855	0.1238	5.2092	0.0000	21,424.8561	21,424.8561	0.9758	0.0000	21,449.2509
Waste						0.0000	0.0000		0.0000	0.0000	306.9893	0.0000	306.9893	18.1426	0.0000	760.5531
Water						0.0000	0.0000		0.0000	0.0000	59.6050	964.7550	1,024.3600	6.1618	0.1528	1,223.9386
Total	**17.2236**	**31.5129**	**57.1546**	**0.2381**	**18.9878**	**0.2833**	**19.2711**	**5.0855**	**0.2741**	**5.3596**	**366.5943**	**26,894.1064**	**27,260.7007**	**25.4541**	**0.2037**	**27,957.7549**

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	13.0772	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Energy	0.1041	0.8910	0.3923	5.6800e-003		0.0719	0.0719		0.0719	0.0719	0.0000	4,204.6359	4,204.6359	0.1508	0.0460	4,222.1133
Mobile	3.9977	30.1501	45.2072	0.2275	18.7039	0.1312	18.8352	5.0094	0.1222	5.1316	0.0000	21,153.0100	21,153.0100	0.9689	0.0000	21,177.2328
Waste						0.0000	0.0000		0.0000	0.0000	306.9893	0.0000	306.9893	18.1426	0.0000	760.5531
Water						0.0000	0.0000		0.0000	0.0000	47.6840	808.8626	856.5466	4.9310	0.1226	1,016.3420
Total	**17.1789**	**31.1671**	**56.5341**	**0.2338**	**18.7039**	**0.2638**	**18.9677**	**5.0094**	**0.2547**	**5.2642**	**354.6733**	**26,184.3877**	**26,539.0610**	**24.2104**	**0.1686**	**27,194.5487**

	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	**0.26**	**1.10**	**1.09**	**1.82**	**1.50**	**6.88**	**1.57**	**1.49**	**7.07**	**1.78**	**3.25**	**2.64**	**2.65**	**4.89**	**17.25**	**2.73**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2019	4/1/2019	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; 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
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

3.2 Demolition - 2019

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

Implement NEV Network

	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	3.9977	30.1501	45.2072	0.2275	18.7039	0.1312	18.8352	5.0094	0.1222	5.1316	0.0000	21,153.0100	21,153.0100	0.9689	0.0000	21,177.2328
Unmitigated	4.0166	30.2759	45.7341	0.2305	18.9878	0.1329	19.1207	5.0855	0.1238	5.2092	0.0000	21,424.8561	21,424.8561	0.9758	0.0000	21,449.2509

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	561.50	255.48	187.99	1,336,401	1,316,421
Health Club	338.20	208.70	267.30	662,102	652,204
Regional Shopping Center	9,396.00	11,243.25	5679.00	18,014,902	17,745,579
Single Family Housing	8,254.58	10,514.51	9145.82	29,745,443	29,300,749
Total	18,550.28	22,221.94	15,280.11	49,758,848	49,014,954

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	12	34
Single Family Housing	14.70	5.90	8.70	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
City Park	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789
Health Club	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789
Regional Shopping Center	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789
Single Family Housing	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	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	3,174.9262	3,174.9262	0.1311	0.0271	3,186.2846
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,202.1209	3,202.1209	0.1322	0.0274	3,213.5766
NaturalGas Mitigated	0.1041	0.8910	0.3923	5.6800e-003		0.0719	0.0719		0.0719	0.0719	0.0000	1,029.7097	1,029.7097	0.0197	0.0189	1,035.8288
NaturalGas Unmitigated	0.1041	0.8910	0.3923	5.6800e-003		0.0719	0.0719		0.0719	0.0719	0.0000	1,029.7097	1,029.7097	0.0197	0.0189	1,035.8288

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	278800	1.5000e-003	0.0137	0.0115	8.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003	0.0000	14.8778	14.8778	2.9000e-004	2.7000e-004	14.9662
Regional Shopping Center	369000	1.9900e-003	0.0181	0.0152	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.6913	19.6913	3.8000e-004	3.6000e-004	19.8083
Single Family Housing	1.86482e+007	0.1006	0.8593	0.3657	5.4800e-003		0.0695	0.0695		0.0695	0.0695	0.0000	995.1407	995.1407	0.0191	0.0182	1,001.0543
Total		**0.1040**	**0.8910**	**0.3923**	**5.6700e-003**		**0.0719**	**0.0719**		**0.0719**	**0.0719**	**0.0000**	**1,029.7097**	**1,029.7097**	**0.0197**	**0.0189**	**1,035.8288**

5.2 Energy by Land Use - NaturalGas

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	278800	1.5000e-003	0.0137	0.0115	8.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003	0.0000	14.8778	14.8778	2.9000e-004	2.7000e-004	14.9662
Regional Shopping Center	369000	1.9900e-003	0.0181	0.0152	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.6913	19.6913	3.8000e-004	3.6000e-004	19.8083
Single Family Housing	1.86482e+007	0.1006	0.8593	0.3657	5.4800e-003		0.0695	0.0695		0.0695	0.0695	0.0000	995.1407	995.1407	0.0191	0.0182	1,001.0543
Total		**0.1040**	**0.8910**	**0.3923**	**5.6700e-003**		**0.0719**	**0.0719**		**0.0719**	**0.0719**	**0.0000**	**1,029.7097**	**1,029.7097**	**0.0197**	**0.0189**	**1,035.8288**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Health Club	86100	27.4333	1.1300e-003	2.3000e-004	27.5315
Regional Shopping Center	2.1555e+006	686.7885	0.0284	5.8700e-003	689.2455
Single Family Housing	7.80832e+006	2,487.8991	0.1027	0.0213	2,496.7997
Total		**3,202.1209**	**0.1322**	**0.0274**	**3,213.5766**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Health Club	85075	27.1067	1.1200e-003	2.3000e-004	27.2037
Regional Shopping Center	2.11129e+006	672.7014	0.0278	5.7500e-003	675.1080
Single Family Housing	7.76821e+006	2,475.1180	0.1022	0.0211	2,483.9728
Total		**3,174.9262**	**0.1311**	**0.0271**	**3,186.2846**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

No Hearths Installed

	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	13.0772	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Unmitigated	13.1029	0.3460	11.0281	1.9800e-003		0.0785	0.0785		0.0785	0.0785	0.0000	272.6647	272.6647	0.0220	4.6700e-003	274.6071

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	1.0481					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.7006					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0257	0.2200	0.0936	1.4000e-003		0.0178	0.0178		0.0178	0.0178	0.0000	254.7855	254.7855	4.8800e-003	4.6700e-003	256.2996
Landscaping	0.3285	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Total	**13.1029**	**0.3459**	**11.0281**	**1.9800e-003**		**0.0785**	**0.0785**		**0.0785**	**0.0785**	**0.0000**	**272.6647**	**272.6647**	**0.0220**	**4.6700e-003**	**274.6071**

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	1.0481					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.7006					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3285	0.1259	10.9345	5.8000e-004		0.0607	0.0607		0.0607	0.0607	0.0000	17.8792	17.8792	0.0171	0.0000	18.3075
Total	**13.0772**	**0.1259**	**10.9345**	**5.8000e-004**		**0.0607**	**0.0607**		**0.0607**	**0.0607**	**0.0000**	**17.8792**	**17.8792**	**0.0171**	**0.0000**	**18.3075**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	856.5466	4.9310	0.1226	1,016.3420
Unmitigated	1,024.3600	6.1618	0.1528	1,223.9386

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 9.01769	31.9216	1.3200e-003	2.7000e-004	32.0358
Health Club	1.34101 / 0.289992	7.0155	0.0440	1.0900e-003	8.4390
Regional Shopping Center	16.1403 / 8.17187	101.0104	0.5299	0.0132	118.2025
Single Family Housing	170.397 / 34.8648	884.4125	5.5867	0.1382	1,065.2613
Total		**1,024.3600**	**6.1618**	**0.1528**	**1,223.9386**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 9.01769	31.9216	1.3200e-003	2.7000e-004	32.0358
Health Club	1.07281 / 0.289992	5.8177	0.0352	8.7000e-004	6.9572
Regional Shopping Center	12.9122 / 8.17187	86.5939	0.4242	0.0106	100.3682
Single Family Housing	136.317 / 34.8648	732.2134	4.4703	0.1108	876.9808
Total		**856.5466**	**4.9310**	**0.1226**	**1,016.3420**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	306.9893	18.1426	0.0000	760.5531
Unmitigated	306.9893	18.1426	0.0000	760.5531

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.97	0.1969	0.0116	0.0000	0.4878
Health Club	57	11.5705	0.6838	0.0000	28.6654
Regional Shopping Center	236.25	47.9566	2.8342	0.0000	118.8105
Single Family Housing	1218.11	247.2653	14.6130	0.0000	612.5894
Total		**306.9893**	**18.1426**	**0.0000**	**760.5531**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.97	0.1969	0.0116	0.0000	0.4878
Health Club	57	11.5705	0.6838	0.0000	28.6654
Regional Shopping Center	236.25	47.9566	2.8342	0.0000	118.8105
Single Family Housing	1218.11	247.2653	14.6130	0.0000	612.5894
Total		**306.9893**	**18.1426**	**0.0000**	**760.5531**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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