AIR QUALITY AND GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

HISTORIC TOWN CENTER MASTER PLAN REPEAL, GPA AND ORDINANCE CHANGE PROJECT

CITY OF SAN JUAN CAPISTRANO

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TABLE OF CONTENTS

1.0 Introduction 1

1.1 Purpose of Analysis and Study Objectives 1
1.2 Site Location and Study Area 1
1.3 Proposed Project Description 2
1.5 Executive Summary 5
1.5 Mitigation Measures for the Proposed Project 6

2.0 Air Pollutants 8

2.1 Criteria Pollutants and Ozone Precursors 8
2.2 Other Pollutants of Concern 10

3.0 Greenhouse Gases 12

3.1 Greenhouse Gases 12
3.2 Global Warming Potential 14
3.3 Greenhouse Gas Emissions Inventory 15

4.0 Air Quality Management 16

4.1 Federal – United States Environmental Protection Agency 16
4.2 State – California Air Resources Board 19
4.3 Regional – Southern California 21
4.4 Local – City of San Juan Capistrano 23

5.0 Global Climate Change Management 25

5.1 International 25
5.2 Federal – United States Environmental Protection Agency 25
5.3 State 26
5.3 Regional – Southern California 32
5.4 Local – City of San Juan Capistrano 33

6.0 Atmospheric Setting 35

6.1 South Coast Air Basin 35
6.2 Local Climate 35
6.3 Monitored Local Air Quality 36
6.4 Toxic Air Contaminant Levels in the Air Basin 38

7.0 Modeling Parameters and Assumptions 39

7.1 CalEEMod Model Input Parameters 39

8.0 Thresholds of Significance 42

8.1 Regional Air Quality 42
8.2 Local Air Quality 42
8.3 Toxic Air Contaminants 42
8.4 Odor Impacts 43
8.5 Greenhouse Gas Emissions 43

TABLE OF CONTENTS CONTINUED

9.0 Impact Analysis 45

9.1 CEQA Thresholds of Significance 45
9.2 Air Quality Compliance 45
9.3 Cumulative Net Increase in Non-Attainment Pollution 47
9.4 Sensitive Receptors 52
9.5 Odor Emissions Adversely Affecting a Substantial Number of People 55
9.6 Generation of Greenhouse Gas Emissions 56
9.7 Greenhouse Gas Plan Consistency 57

10.0 References 59

APPENDIX

Appendix A – CalEEMod Model Daily Printouts

Appendix B – CalEEMod Model Annual Printouts

LIST OF FIGURES

Figure 1 – Project Location 7

LIST OF TABLES

Table A – HTCMP Repeal Development Land Use Summary 5
Table B – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs 14
Table C – State and Federal Criteria Pollutant Standards 17
Table D – South Coast Air Basin Attainment Status 18
Table E – Monthly Climate Data 36
Table F – Local Area Air Quality Monitoring Summary 37
Table G – CalEEMod Land Use Parameters 39
Table H – SCAQMD Regional Criteria Pollutant Emission Thresholds of Significance 42
Table I – Construction-Related Regional Criteria Pollutant Emissions 48
Table J – Operational Regional Criteria Pollutant Emissions 49
Table K – Project's Contribution to Criteria Pollutants in the South Coast Air Basin 50
Table L – Project Related Greenhouse Gas Annual Emissions Forecast for Buildout Year 2040 57

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Air Basin	South Coast Air Basin
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
BSFC	Brake Specific Fuel Consumption
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
Cf_4	tetrafluoromethane
C_2F_6	hexafluoroethane
C_2H_6	ethane
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
ºF	Fahrenheit
FTIP	Federal Transportation Improvement Program
GHG	Greenhouse gas
GWP	Global warming potential
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change

LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
MATES	Multiple Air Toxics Exposure Study
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
MWh	Megawatt-hour
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
O_3	Ozone
OPR	Office of Planning and Research
Pb	Lead
Pfc	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion
PPT	Parts per trillion
RTIP	Regional Transportation Improvement Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SF_6	Sulfur Hexafluoride
SIP	State Implementation Plan
SO_x	Sulfur oxides
TAC	Toxic air contaminants
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile organic compounds

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Air Quality and Greenhouse Gas (GHG) Emissions Impact Analysis has been completed to determine the air quality and GHG emissions impacts associated with the proposed Historic Town Center Master Plan (HTCMP) Repeal, General Plan Amendment (GPA) and Ordinance Change Project (the Project). The following is provided in this report:

- A description of the proposed project;
- A description of the atmospheric setting;
- A description of the criteria pollutants and GHGs;
- A description of the air quality regulatory framework;
- A description of the GHG emissions regulatory framework;
- A description of the air quality and GHG emissions thresholds including the California Environmental Quality Act (CEQA) significance thresholds;
- An analysis of the conformity of the proposed project with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP);
- An analysis of the short-term construction related and long-term operational air quality and GHG emissions impacts; and
- An analysis of the conformity of the proposed project with all applicable GHG emissions reduction plans and policies.

1.2 Site Location and Study Area

The Project site is located in the City of San Juan Capistrano (City). The Project site includes both: 1) The Historic Town Center (HTC) Area, which is approximately 48 acres; and 2) The Historic Town Center Master Plan (HTCMP) area, which is approximately 104 acres. Most of the HTC Area is located within the HTCMP Area. The HTC Area is bounded by residential communities, small markets, restaurants, the Junipero Serra School and two churches to the north; Interstate 5 (I-5) to the east; San Juan Creek, retail shopping centers, restaurants, church uses and a residential neighborhood to the south; residential communities to the west. Figure 1 shows the locations of the HTC Area and HTCMP Area.

Sensitive Receptors in Project Vicinity

The SCAQMD defines sensitive receptors as residences, hospitals, and convalescent facilities where an individual may remain for 24 hours or more. The nearest sensitive receptors to the HTC Area are the residences located on the west side of the railroad, approximately 40 feet west of the HTC Area. The nearest schools to the HTC Area are San Juan Elementary School located on the north side of Spring Street, approximately 60 feet north of the HTC Area and Junipero Serra High School located on the north side of Acjachema Street, approximately 40 feet north of the HTC Area.

1.3 Proposed Project Description

Background

On March 6, 2018, the City Council directed staff to initiate a General Plan Amendment (GPA) Land Use Code amendment study to correct inconsistencies between the Historic Town Center Master Plan (HTCMP), Form Based Code (FBC), and General Plan. The City Council also directed staff to consider two-story buildings to remain limited to 35 feet in height with hotel buildings limited to 3 stories and 45 feet in height. Staff were also directed to initiate the process to repeal the HTCMP.

Project Description

The implementation of the HTCMP and the FBC introduced land use inconsistencies between the Master Plan, the City of San Juan Capistrano General Plan, and the FBC. To remedy the inconsistencies, this Project proposes repeal of the HTCMP and FBC as well as several revisions to the Zoning Code and General Plan Land Use Element. The inconsistencies and the proposed actions to remedy them include the following:

<u>Repeal of HTCMP and FBC</u>

The repeal of the HTCMP and the FBC would remove the inconsistencies that now burden the City's land use law and clarify allowable land uses in the HTC Area and HTCMP Area. The accompanying GPA and Zoning Ordinance will provide further clarity with respect to floor area ratios, building height limits, and parking and setback regulations in the Project area. In addition, repealing the HTCMP would result in maintaining the existing roadway network and eliminate the identified future roadway connections proposed in the HTCMP, including the proposed extensions of Forster Street, Yorba Street, and Avenida Los Amigos.

Residential Land Use

The HTCMP encourages residential housing on the HTCMP Area (City 2012a). In addition, the FBC contains residential use standards for uses such as studios and multi-family housing (City 2012b). However, the General Plan Land Use Element does not allow housing in the HTCMP area (City 1999). Repeal of the HTCMP and FBC would eliminate these inconsistencies and maintain the existing condition status quo, as there are no residential housing projects located within the Project area.

FBC Repeal

The repeal of the HTCMP FBC would also remove the Freeway Edge Overlay and Town Center Edge designations from the area east of Del Obispo Street. This area would retain the General Commercial land use designation, as noted in the General Plan Land Use Map. The overlays would have allowed for additional development potential beyond the General Commercial designation for the area east of Del Obispo Street once the area experienced cumulative floor expansion by 10% from the date of the adoption of the code, or modification of property access, or if the property was rezoned. Since none of these conditions were met, this area would retain both the current General Commercial zoning and General Commercial land use designation; and the overlay designations would be removed.

<u>General Plan Text Amendments</u>

The General Plan text amendments will include removing references to the HTCMP, as well as the following revisions:

Floor Area Ratio (FAR)

The General Plan limits the FAR in the HTCMP area to 0.5:1 (City 2012a, City 1999). The Project would amend the City's General Plan to allow a FAR of up to 0.75:1 for the Town Center (TC) and Town Center Edge (TCE) Districts, as established within the Project area; and a FAR of up to 1.5:1 for buildings that include provisions for public gathering spaces. Table LA-4, Development Capacity, will also be revised due to the increase in allowable FAR.

Zoning Code Amendment

Adopting Language from the Former FBC into the Zoning Code.

Building Heights

The FBC limits buildings in the Project area to two stories with a maximum height of 35 feet (City 2012b), with the exception of hotel uses which are permitted a maximum of three stories with no specific height limit (City 2012b). This has created uncertainty as to whether three-story buildings must adhere to the 35-foot height limit called out for two-story buildings in the FBC. The Project would amend the Zoning Code to clarify that buildings within the TC and TCE Districts, with the exception of hotels, are limited to a maximum of two-stories and 35 feet in height. Hotel buildings are limited to a maximum height of three stories and 45 feet in height in the HTC area.

Parking

The Park Once Program was incorporated into the Land Use Code in 2011 as a method to attract uses to the Historic Town Center and surrounding areas and help create a pedestrian friendly, vibrant downtown (Land Use Ordinance 2011). The program establishes simplified parking requirements for certain retail, commercial, entertainment, and food uses, and allows said uses to satisfy their on-site parking requirement by entering into shared parking agreements with adjoining uses or proximity to a City parking facility. The 2012 FBC adopted the Park Once Program and also established more detailed parking requirements and identified the payment of an in-lieu fee that would be used toward construction of a downtown parking garage as an added method to satisfy parking requirements (City 2012b). The Project readopts and affirms the Park Once Program, including the shared parking provisions, through establishing standards and land use parking ratios in the Project area for non-residential properties within five-minute walking distance radius (i.e., approximately 1,500 linear feet) of the intersection of Camino Capistrano and Forster Street.

Setbacks

The HTCMP establishes setback requirements between the Esslinger Building and Judge Egan House and any new buildings on adjoining lots (City 2012a, City 2012b). Since this setback was intended to be a part of the HTCMP and not the FBC, the setback is considered policy and not part of the legally binding Land Use Ordinance. Nonetheless, the policy has created confusion as to how the setback requirements are to be applied. In addition, City staff has identified the following inconsistencies within the FBC relating to setbacks that should also be addressed: 1) inconsistency between the required yard setbacks; 2) inconsistency between the minimum 2-foot vertical separation required between a building's ground floor and the adjacent sidewalk, and the actual separation distances that exist in the HTCMP area; 3) inconsistency between the vertical limits identified in Table 2 C (B) and Terrace Frontage Type 3A.5; and 4) inconsistencies between the FBC development standards and the prevailing development pattern of the commercial properties along the west side of Camino Capistrano near Acjachema Street.

In order to clarify setbacks in the Project area, the Project proposes that new construction on properties adjacent to Inventory of Historic and Cultural Landmarks (IHCL) listed historic buildings or structures identified by the City in the Project area would require a setback from the historic building of one foot for every foot in new building height. Specifically, setbacks are described in Table 3-554-1 in Appendix A.

Land Use Designations

The repeal of the HTCMP and the FBC which includes the Town Center Edge and Freeway Edge Overlays; properties that previously had these overlays will remain designated General Commercial (GC) as shown on the General Plan Land Use Map (City 1999). The Zoning Code will be amended to include the Town Center (TC) and Town Center Edge (TCE) Districts, and prescribe definitions, development standards, frontage standards, parking standards, and design standards. These Districts were previously included in the FBC, and they will retain the development standards already established for these areas.

Modification of Non-conforming Uses

The Project would modify the Zoning Code to define and clarify regulation of non-conforming uses in the TC and TCE Districts, such as when specific frontage types apply. This would apply to structures that are not in conformance with the Zoning Code due to these structures existing prior to the adoption of that document. For nonconforming uses, minor modifications to existing buildings in the TC and TCE Districts may be approved by the Development Services Director subject to the requirements of Section 9-2.313 Architectural Control review.

Development Summary

The *Historic Town Center Master Plan General Plan Amendment Rezone Draft Environmental Impact Report* (2011 HTCMP EIR), prepared by Templeton Planning Group, November 1, 2011, quantified the existing land uses in the HTCMP, which according to City Planning Staff, have not changed since the end of 2011 for the HTC area. In addition, the 2011 HTCMP EIR analyzed a No Project Alternative that would be very similar to the proposed project except for the following changes:

(1) The building height of hotels would be increased from 2 to 3 stories, which potentially could result in 33 percent more hotel rooms than the No Project Alternative discussed in the 2011 HTCMP EIR. This would increase the maximum number of hotel rooms from 214 to 285.

(2) The FAR for the Retail, Commercial/Office and Civic land uses would be increased from 0.5:1 to 0.75:1 and may be increased to 1.5:1 for buildings that include public gathering spaces. According to City Staff over half of the existing properties in the HTC currently exceed the 0.5:1 FAR or have other restrictions such as historical designations that would make it very unlikely that these properties would ever be changed with approval of increased FAR. In addition, only a few properties within the HTC are of a large enough size to be capable of incorporating a public gathering space in order to meet the requirements for a FAR of up to 1.5:1. As such, the emissions calculations provided in this analysis are based on 40 percent of the Retail, Commercial/Office, and Civic square footage shown in the No Project Alternative, increased by 50 percent to account for the FAR increase to 0.75:1 and 10 percent of the Retail, Commercial/Office and Civic square footage shown in the No Project Alternative increased by 200 percent to account for the FAR increase to 1.5:1.

The HTCMP Repeal Development Land Use Summary, including a comparison to the HTCMP and existing conditions is shown in Table A.

Table A – HTCMP Repeal Development Land Use Summary

Land Use	Existing Conditions[1]	HTCMP Buildout[1]	HTCMP Repeal Buildout (Proposed Project)	Difference HTCMP Repeal to: HTCMP	Difference HTCMP Repeal to: Existing
Retail	559,089 SF	532,820 SF	726,816 SF	193,996 SF	167,727 SF
Commercial/Office	103,434 SF	217,099 SF	134,464 SF	(82,635) SF	31,030 SF
Civic	49,872 SF	70,533 SF	64,834 SF	(5,699) SF	14,962 SF
Religious	107,490 SF	107,490 SF	107,490 SF	0	0
Education	77,617 SF	77,617 SF	77,617 SF	0	0
Other	19,385 SF	14,907 SF	19,385 SF	4,478 SF	0
Residential (units)	0	279	0	(279)	0
Hotel (rooms)	0 RM	214 RM	285 RM	71 RM	285 RM
Parking Spaces	3,419 PS	3,716 PS	3,477 PS	(239) PS	58 PS

Notes:
[1] Obtained from Table 3.3-1 of the 2011 HTCMP EIR (Templeton Planning Group, 2011).
[2] Compared
Definitions: SF = Square Feet; RM = Hotel Room; PS = Parking Space

1.5 Executive Summary

Standard Air Quality and GHG Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the SCAQMD and State of California (State).

South Coast Air Quality Management District Rules

The following lists the SCAQMD rules that are applicable, but not limited to the proposed project.

- Rule 402 Nuisance – Controls the emissions of odors and other air contaminants;
- Rule 403 Fugitive Dust – Controls the emissions of fugitive dust;
- Rules 1108 and 1108.1 Cutback and Emulsified Asphalt – Controls the volatile organic compounds (VOC) content in asphalt;
- Rule 1113 Architectural Coatings – Controls the VOC content in paints and solvents; and
- Rule 1143 Paint Thinners – Controls the VOC content in paint thinners.

State Rules

The following lists the State Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to the proposed project.

- CCR Title 13, Article 4.8, Chapter 9, Section 2449 – In use Off-Road Diesel Vehicles;
- CCR Title 13, Section 2025 – On-Road Diesel Truck Fleets;
- CCR Title 24 Part 6 – California Building Energy Standards; and
- CCR Title 24 Part 11 – California Green Building Standards.

Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines air quality and GHG emissions checklist questions.

Conflict with or obstruct implementation of the applicable air quality plan?

Potentially significant impact. Air Quality Mitigation Measure 1 has been provided to reduce this impact to less than significant levels.

Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?

Potentially significant impact. Air Quality Mitigation Measure 1 has been provided to reduce this impact to less than significant levels.

Expose sensitive receptors to substantial pollutant concentrations?

Potentially significant impact. Air Quality Mitigation Measure 1 has been provided to reduce this impact to less than significant levels.

Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than significant impact.

Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant impact.

Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

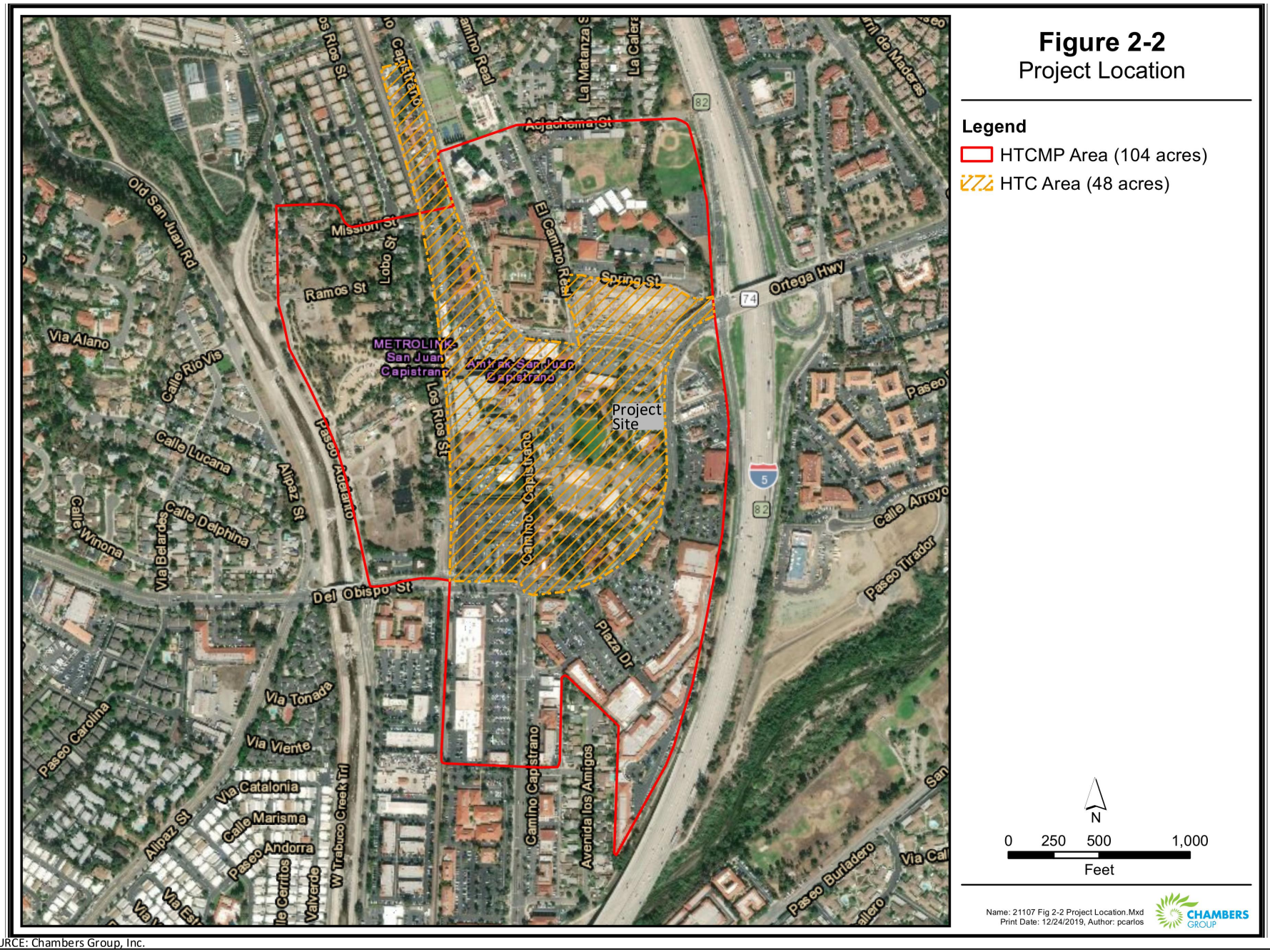
Less than significant impact.

1.5 Mitigation Measures for the Proposed Project

This analysis found that implementation of the State and SCAQMD air quality and GHG emissions reductions regulations listed above as well as implementation of the following mitigation would limit criteria pollutants, odors, and GHG emissions from the proposed project to less than significant levels.

Air Quality Mitigation Measure 1

All land use development projects within the HTC Area that require either earthmoving activities or extensive demolition or building construction shall prepare a project specific air quality assessment that analyzes the construction and operational regional and localized air impacts created from the specific project and addresses all CEQA-related air quality and greenhouse gas emissions checklist questions. If the air quality assessment finds a significant impact, the air quality assessment shall develop adequate mitigation to reduce the impacts to a less than significant level.



SOURCE: Chambers Group, Inc.

VISTA ENVIRONMENTAL

Figure 1
Project Location Map

2.0 AIR POLLUTANTS

Air pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

2.1 Criteria Pollutants and Ozone Precursors

The criteria pollutants consist of: ozone, NO_x, CO, SO_x, lead (Pb), and particulate matter (PM). The ozone precursors consist of NO_x and VOC. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants and ozone precursors.

Nitrogen Oxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of NO_2 can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NO_x and the pollutants formed from NO_x can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone is not usually emitted directly into the air, instead it is created by a chemical reaction between NOx and VOC in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes approximately 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing

and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Oxides

Sulfur Oxide (SOx) gases are formed when fuel containing sulfur, such as coal and oil is burned, as well as from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

Particle matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) that are also known as *Respirable Particulate Matter* are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) that are also known as *Fine Particulate Matter* have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Volatile Organic Compounds

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

VOC is not classified as a criteria pollutant, since VOCs by themselves are not a known source of adverse health effects. The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered toxic air contaminants (TACs). There are no separate health standards for VOCs as a group.

2.2 Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. TACs is a term that is defined under the California Clean Air Act and consists of the same substances that are defined as Hazardous Air Pollutants (HAPs) in the Federal Clean Air Act. There are over 700 hundred different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is DPM. DPM is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led the CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by CARB and as a HAP by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. The nearest likely locations of naturally occurring asbestos, as identified in the *General Location Guide for Ultramafic Rocks in California*, prepared by the California Division of Mines and Geology, is located in Santa Barbara County. The nearest historic asbestos mine to the project site, as identified in the *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California,* prepared by U.S. Geological Survey, is located at Asbestos Mountain, which is approximately 60 miles east of the project site in the San Jacinto Mountains. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

3.0 GREENHOUSE GASES

3.1 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHGs), play a critical role in the Earth's radiation amount by trapping infrared radiation from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor 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 a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. 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 is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also 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).

Carbon Dioxide

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s, each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that 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. This could result in an average global temperature rise of at least two degrees Celsius or 3.6 degrees Fahrenheit.

Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs)). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N_2O is also commonly used as an aerosol spray propellant (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and race cars).

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 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 in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

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 (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays 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). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

Sulfur Hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. 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.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

3.2 Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. The GHGs listed by the IPCC and the CEQA Guidelines are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. To simplify reporting and analysis, GHGs are commonly defined in terms of their GWP. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2e. As such, the GWP of CO_2 is equal to 1. The GWP values used in this analysis are based on the 2007 IPCC Fourth Assessment Report, which are used in CARB's 2014 Scoping Plan Update and the CalEEMod Model Version 2016.3.2 and are detailed in Table B. The IPCC has updated the Global Warming Potentials of some gases in their Fifth Assessment Report, however the new values have not yet been incorporated into the CalEEMod model that has been utilized in this analysis.

Table B – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs

Gas	Atmospheric Lifetime (years)[1]	Global Warming Potential (100 Year Horizon)[2]	Atmospheric Abundance
Carbon Dioxide (CO_2)	50-200	1	379 ppm
Methane (CH_4)	9-15	25	1,774 ppb
Nitrous Oxide (N_2O)	114	298	319 ppb
HFC-23	270	14,800	18 ppt
HFC-134a	14	1,430	35 ppt
HFC-152a	1.4	124	3.9 ppt
PFC: Tetrafluoromethane (CF_4)	50,000	7,390	74 ppt
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200	2.9 ppt
Sulfur Hexafluoride (SF_6)	3,200	22,800	5.6 ppt

Notes:
[1] Defined as the half-life of the gas.
[2] Compared to the same quantity of CO_2 emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEMod (Version 2016.3.2),that is used in this report (CalEEMod user guide: Appendix A).
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: IPCC 2007, EPA 2015

3.3 Greenhouse Gas Emissions Inventory

According to https://cdiac.ess-dive.lbl.gov/trends/emis/tre_glob_2014.html 9,855 million metric tons (MMT) of CO_2 equivalent (CO_2e) emissions were created globally in the year 2014. According to https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data the breakdown of global GHG emissions by sector consists of: 25 percent from electricity and heat production; 21 percent from industry; 24 percent from agriculture, forestry and other land use activities; 14 percent from transportation; 6 percent from building energy use; and 10 percent from all other sources of energy use.

According to *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2016,* prepared by EPA, in 2016 total U.S. GHG emissions were 6,511.3 million metric tons (MMT) of CO_2 equivalent (CO_2e) emissions. Total U.S. emissions have increased by 2.4 percent between 1990 and 2016 and GHG emissions decreased by 1.9 percent between 2015 and 2016. The recent decrease in GHG emissions was a result of multiple factors, including substitution from coal to natural gas in the electricity sector and from a warmer winter and a slow-down in the economy in 2016. However, according to https://rhg.com/research/preliminary-us-emissions-estimates-for-2018/ the preliminary estimates for 2018 show that GHG emissions have increased by 3.4 percent, which is primarily a result from a strong economy that required the use of more transportation fuels and power generation.

According to https://www.arb.ca.gov/cc/inventory/data/data.htm the State of California created 429.4 $MMTCO_2e$ in 2016. The breakdown of California GHG emissions by sector consists of: 41 percent from transportation; 23 percent from industrial; 16 percent from electricity generation; 8 percent from agriculture; 7 percent from residential buildings; 5 percent from commercial buildings; and 1 percent from other uses of energy. In 2016, GHG emissions were 12 $MMTCO_2e$ lower than 2015 levels, which represent a 6 percent year-over-year decline.

4.0 AIR QUALITY MANAGEMENT

The air quality at the project site is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

4.1 Federal – United States Environmental Protection Agency

The Clean Air Act, first passed in 1963 with major amendments in 1970, 1977 and 1990, is the overarching legislation covering regulation of air pollution in the United States. The Clean Air Act has established the mandate for requiring regulation of both mobile and stationary sources of air pollution at the state and federal level. The Environmental Protection Agency (EPA) was created in 1970 in order to consolidate research, monitoring, standard-setting and enforcement authority into a single agency.

The EPA is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. NAAQS pollutants were identified using medical evidence and are shown below in Table C.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP. The CARB defines attainment as the category given to an area with no violations in the past three years. As indicated below in Table D, the Air Basin has been designated by EPA for the national standards as a non-attainment area for ozone and PM2.5 and partial non-attainment for lead. Currently, the Air Basin is in attainment with the national ambient air quality standards for CO, PM10, SO_2, and NO_2.

Table C – State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm / 1-hour 0.07 ppm / 8-hour	0.070 ppm, / 8-hour	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm / 1-hour 9.0 ppm / 8-hour	35.0 ppm / 1-hour 9.0 ppm / 8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm / 1-hour 0.030 ppm / annual	100 ppb / 1-hour 0.053 ppm / annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm / 1-hour 0.04 ppm / 24-hour	75 ppb / 1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 µg/m^3 / 24-hour 20 µg/m^3 / annual	150 µg/m^3 / 24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3 / 24-hour 12 µg/m^3 / annual	
Sulfates	25 µg/m^3 / 24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage.
Lead	1.5 µg/m^3 / 30-day	0.15 µg/m^3 /3-month rolling	(a) Learning disabilities; and (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf .

Table D – South Coast Air Basin Attainment Status

Criteria Pollutant	Standard	Averaging Time	Designation[a)]	Attainment Date[b)]
1-Hour Ozone[c)]	NAAQS	1979 1-Hour (0.12 ppm)	Nonattainment (Extreme)	2/6/2023 (revised deadline)
	CAAQS	1-Hour (0.09 ppm)	Nonattainment	N/A
8-Hour Ozone[d)]	NAAQS	1997 8-Hour (0.08 ppm)	Nonattainment (Extreme)	6/15/2024
	NAAQS	2008 8-Hour (0.075 ppm)	Nonattainment (Extreme)	8/3/2038
	NAAQS	2015 8-Hour (0.070 ppm)	Pending – Expect Nonattainment (Extreme)	Pending (beyond 2032)
	CAAQS	8-Hour (0.070 ppm)	Nonattainment	Beyond 2032
CO	NAAQS	1-Hour (35 ppm) 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
	CAAQS	1-Hour (20 ppm) 8-Hour (9 ppm)	Attainment	6/11/2007 (attained)
NO_2[e)]	NAAQS	2010 1-Hour (0.10 ppm)	Unclassifiable/ Attainment	N/A (attained)
	NAAQS	1971 Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (attained)
	CAAQS	1-Hour (0.18 ppm) Annual (0.030 ppm)	Attainment	---
SO_2[f)]	NAAQS	2010 1-Hour (75 ppb)	Designations Pending (expect Unclassifiable/ Attainment)	N/A (attained)
	NAAQS	1971 24-Hour (0.14 ppm) 1971 Annual (0.03 ppm)	Unclassifiable/ Attainment	3/19/1979 (attained)
PM10	NAAQS	1987 24-hour (150 $\mu g/m^3$)	Attainment (Maintenance)[g)]	7/26/2013 (attained)
	CAAQS	24-hour (50 $\mu g/m^3$) Annual (20 $\mu g/m^3$)	Nonattainment	N/A
PM2.5[h)]	NAAQS	2006 24-Hour (35 $\mu g/m^3$)	Nonattainment (Serious)	12/31/2019
	NAAQS	1997 Annual (15.0 $\mu g/m^3$)	Attainment (final determination pending)	8/24/2016 (attained 2013)
	NAAQS	2012 Annual (12.0 $\mu g/m^3$)	Nonattainment (Moderate)	12/31/2021
	CAAQS	Annual (12.0 $\mu g/m^3$)	Nonattainment	N/A
Lead[i)]	NAAQS	2008 3-Months Rolling (0.15 $\mu g/m^3$)	Nonattainment (Partial) (Attainment determination requested)	12/31/2015

Source: SCAQMD, February 2016

Notes:

a) U.S. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassifiable/Attainment or Unclassifiable

b) A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration

c) The 1979 1-hour O_3 standard (0.12 ppm) was revoked, effective June 15, 2005; however, the Basin has not attained this standard and therefore has some continuing obligations with respect to the revoked standard

d) The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm. Effective 12/28/15 with classifications and implementation goals to be finalized by 10/1/17; the 1997 8-hour O_3 NAAQS (0.08 ppm) was revoked in the 2008 O_3 implementation rule, effective 4/6/15;there are continuing obligations under the revoked 1997 and revised 2008 O_3 until they are attained.

e) New NO_2 1-hour standard, effective August 2, 2010; attainment designations January 20, 2012; annual NO_2 standard retained

f) The 1971 annual and 24-hour SO_2 standards were revoked, effective August 23, 2010; however, these 1971 standards will remain in effect

until one year after U.S. EPA promulgates area designations for the 2010 SO_2 1-hour standard. Area designations are still pending, with Basin expected to be designated Unclassifiable /Attainment.
g) Annual PM10 standard was revoked, effective December 18, 2006; 24-hour PM10 NAAQS deadline was 12/31/2006; SCAQMD request for attainment redesignation and PM10 maintenance plan was approved by U.S. EPA on June 26, 2013, effective July 26, 2013.
h) The attainment deadline for the 2006 24-Hour PM2.5 NAAQS was 12/31/15 for the former "moderate" classification; EPA approved reclassification to "serious", effective 2/12/16 with an attainment deadline of 12/31/19; the 2012 (proposal year) annual PM2.5 NAAQS was revised on 1/15/13, effective 3/18/13, from 15 to 12 μg/m^3; new annual designations were final 1/15/15, effective 4/15/15; on July 25, 2016 EPA finalized a determination that the Basin attained the 1997 annual (15.0 μg/m^3) and 24-hour PM2.5 (65 μg/m^3) NAAQS, effective August 24, 2016
i) Partial Nonattainment designation – Los Angeles County portion of Basin only for near-source monitors. Expect to remain in attainment based on current monitoring data; attainment re-designation request pending.

In 2015, one or more stations in the Air Basin exceeded the most current federal standards on a total of 146 days (40 percent of the year), including: 8-hour ozone (113 days over 2015 ozone NAAQS), 24-hour PM2.5 (30 days, including near-road sites; 25 days for ambient sites only), PM10 (2 days), and NO_2 (1 day). Despite substantial improvement in air quality over the past few decades, some air monitoring stations in the Air Basin still exceed the NAAQS for ozone more frequently than any other area in the United States. Seven of the top 10 stations in the nation most frequently exceeding the 2015 8-hour ozone NAAQS in 2015 were located within the Air Basin, including stations in San Bernardino, Riverside, and Los Angeles Counties (SCAQMD, 2016).

PM2.5 levels in the Air Basin have improved significantly in recent years. By 2013 and again in 2014 and 2015, there were no stations measuring PM2.5 in the Air Basin that violated the former 1997 annual PM2.5 NAAQS (15.0 μg/m^3) for the 3-year design value period. On July 25, 2016 the EPA finalized a determination that the Basin attained the 1997 annual (15.0 μg/m^3) and 24-hour PM2.5 (65 μg/m^3) NAAQS, effective August 24, 2016. Of the 17 federal PM2.5 monitors at ambient stations in the Air Basin for the 2013-2015 period, five stations had design values over the current 2012 annual PM2.5 NAAQS (12.0 μg/m^3), including: Mira Loma (Air Basin maximum at 14.1 μg/m^3), Rubidoux, Fontana, Ontario, Central Los Angeles, and Compton. For the 24-hour PM2.5 NAAQS (35.0 μg/m^3) there were 14 stations in the Air Basin in 2015 that had one or more daily exceedances of the standard, with a combined total of 25 days over that standard in the Air Basin. While it was previously anticipated that the Air Basin's 24-hour PM2.5 NAAQS would be attained by 2015, this did not occur based on the data for 2013 through 2015. The higher number of days exceeding the 24-hour PM2.5 NAAQS over what was expected is largely attributed to the severe drought conditions over this period that allowed for more stagnant conditions in the Air Basin with multi-day buildups of higher PM2.5 concentrations. This was caused by the lack of storm-related dispersion and rain-out of PM and its precursors (SCAQMD, 2016).

The Air Basin is currently in attainment for the federal standards for SO_2, CO, NO_2, and PM10 and Orange County is currently in attainment for the federal standards for lead. While the concentration level of the 1-hour NO_2 federal standard (100 ppb) was exceeded in the Air Basin for one day in 2015 (Long Beach-Hudson Station), the NAAQS NO_2 design value has not been exceeded. Therefore, the Air Basin remains in attainment of the NO_2 NAAQS (SCAQMD, 2016).

4.2 State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The CAAQS for criteria pollutants are shown above in Table C. In addition, the CARB establishes emission standards for motor vehicles

sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The Air Basin has been designated by the CARB as a non-attainment area for ozone, PM10 and PM2.5. Currently, the Air Basin is in attainment with the ambient air quality standards for CO, NO_2, SO_2, lead, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

The following lists the State of California Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to all warehouse projects in the State.

Assembly Bill 2588

The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release in California. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

CARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the California Air Resources Board (CARB) adopted California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 to reduce diesel particulate matter (DPM) and NOx emissions from in-use off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. Performance requirements of the rule are based on a fleet's average NOx emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirement making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less). Currently, no commercial operation in California may add any equipment to their fleet that has a Tier 0 or Tier 1 engine. By January 1, 2018 medium and large fleets will be restricted from adding Tier 2 engines to their fleets and by January 2023, no commercial operation will be allowed to add Tier 2 engines to their fleets. It should be noted that commercial fleets may continue to use their existing Tier 0 and 1 equipment, if they can demonstrate that the average emissions from their entire fleet emissions meet the NOx emissions targets.

CARB Resolution 08-43 for On-Road Diesel Truck Fleets

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. By January 1, 2014, 50 percent of a truck fleet is required to have installed Best Available Control Technology (BACT) for NOx emissions and 100 percent of a truck fleet installed BACT for PM10 emissions. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of

California. All on-road diesel trucks utilized during construction of the proposed project will be required to comply with Resolution 08-43.

4.3 Regional – Southern California

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. The *Final 2016 Air Quality Management Plan* (2016 AQMP) was adopted by the SCAQMD Board on March 3, 2016 and was adopted by CARB on March 23, 2017 for inclusion into the California State Implementation Plan (SIP). The 2016 AQMP was prepared in order to meet the following standards:

- 8-hour Ozone (75 ppb) by 2032
- Annual PM2.5 (12 µg/m3) by 2021-2025
- 8-hour Ozone (80 ppb) by 2024 (updated from the 2007 and 2012 AQMPs)
- 1-hour Ozone (120 ppb) by 2023 (updated from the 2012 AQMP)
- 24-hour PM2.5 (35 $\mu g/m^3$) by 2019 (updated from the 2012 AQMP)

In addition to meeting the above standards, the 2016 AQMP also includes revisions to the attainment demonstrations for the 1997 8-hour ozone NAAQS and the 1979 1-hour ozone NAAQS. The prior 2012 AQMP was prepared in order to demonstrate attainment with the 24-hour PM2.5 standard by 2014 through adoption of all feasible measures. The prior 2007 AQMP demonstrated attainment with the 1997 8-hour ozone (80 ppb) standard by 2023, through implementation of future improvements in control techniques and technologies. These “black box” emissions reductions represent 65 percent of the remaining NOx emission reductions by 2023 in order to show attainment with the 1997 8-hour ozone NAAQS. Given the magnitude of these needed emissions reductions, additional NOx control measures have been provided in the 2012 AQMP even though the primary purpose was to show compliance with 24-hour PM2.5 emissions standards.

The 2016 AQMP provides a new approach that focuses on available, proven and cost effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities to promote reductions in GHG emissions and TAC emissions as well as efficiencies in energy use, transportation, and goods movement. The 2016 AQMP recognizes the critical importance of working with other agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings and industrial facilities to cleaner technologies in a manner that benefits not only air quality, but also local businesses and the regional economy.

Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout

the Air Basin. Instead, this is controlled through local jurisdictions in accordance to the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the *CEQA Air Quality Handbook* (SCAQMD CEQA Handbook), prepared by SCAQMD, 1993, with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs detailed in the AQMPs. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Air Basin, and adverse impacts will be minimized.

The following lists the SCAQMD rules that are applicable but not limited to all land development projects in the Air Basin.

Rule 402 - Nuisance

Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Compliance with Rule 402 will reduce local air quality and odor impacts to nearby sensitive receptors.

Rule 403- Fugitive Dust

Rule 403 governs emissions of fugitive dust during construction activities and requires that no person shall cause or allow the emissions of fugitive dust such that dust remains visible in the atmosphere beyond the property line or the dust emission exceeds 20 percent opacity, if the dust is from the operation of a motorized vehicle. Compliance with this rule is achieved through application of standard Best Available Control Measures, which include but are not limited to the measures below. Compliance with these rules would reduce local air quality impacts to nearby sensitive receptors.

- Utilize either a pad of washed gravel 50 feet long, 100 feet of paved surface, a wheel shaker, or a wheel washing device to remove material from vehicle tires and undercarriages before leaving project site.
- Do not allow any track out of material to extend more than 25 feet onto a public roadway and remove all track out at the end of each workday.
- Water all exposed areas on active sites at least three times per day and pre-water all areas prior to clearing and soil moving activities.
- Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas that will remain inactive for 10 days or longer.
- Pre-water all material to be exported prior to loading, and either cover all loads or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114.

- Replant all disturbed area as soon as practical.
- Suspend all grading activities when wind speeds (including wind gusts) exceed 25 miles per hour.
- Restrict traffic speeds on all unpaved roads to 15 miles per hour or less.

Rules 1108 and 1108.1 – Cutback and Emulsified Asphalt

Rules 1108 and 1108.1 govern the sale, use, and manufacturing of asphalt and limits the VOC content in asphalt. This rule regulates the VOC contents of asphalt used during construction as well as any on-going maintenance during operations. Therefore, all asphalt used during construction and operation of the proposed project must comply with SCAQMD Rules 1108 and 1108.1.

Rule 1113 – Architectural Coatings

Rule 1113 governs the sale, use, and manufacturing of architectural coatings and limits the VOC content in sealers, coatings, paints and solvents. This rule regulates the VOC contents of paints available during construction. Therefore, all paints and solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1113.

Rule 1143 – Paint Thinners

Rule 1143 governs the sale, use, and manufacturing of paint thinners and multi-purpose solvents that are used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations. This rule regulates the VOC content of solvents used during construction. Solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1143.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS), adopted April, 2016 and the *2019 Federal Transportation Improvement* Program (FTIP), adopted September 2018, which addresses regional development and growth forecasts. Although the RTP/SCS and FTIP are primarily planning documents for future transportation projects a key component of these plans are to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The RTP/SCS, FTIP, and AQMP are based on projections originating within the City and County General Plans.

4.4 Local – City of San Juan Capistrano

The *City of San Juan Capistrano General Plan*, adopted December 1999, provides the following air quality-related goals and policies that are applicable to the proposed project.

Conservation & Open Space Goal 6: Improve Air Quality

Policy 6.1: Cooperate with the South Coast Air Quality Management District and Southern California Association of Governments in their efforts to implement the regional Air Quality Management Plan.

Policy 6.2: Implement City-wide traffic flow improvements.

Policy 6.3: Achieve a greater balance between jobs and housing in San Juan Capistrano.

Policy 6.4: Integrate air quality planning with land use and transportation planning.

Policy 6.5: Cooperate and participate in regional air quality. management planning, programs, and enforcement measures.

Policy 6.6: Promote energy conservation and recycling by the public and private sectors.

5.0 GLOBAL CLIMATE CHANGE MANAGEMENT

The regulatory setting related to global climate change is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to reduce GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for global climate change regulations are discussed below.

5.1 International

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries, the objective of reducing their collective GHG emissions by five percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182 countries, but has not been ratified by the United States. It should be noted that Japan and Canada opted out of the Kyoto Protocol and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012 and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force. The Parties to the Kyoto Protocol negotiated the Paris Agreement in December 2015, agreeing to set a goal of limiting global warming to less than 2 degrees Celsius compared with pre-industrial levels. The Paris Agreement has been adopted by 195 nations with 147 ratifying it, including the United States by President Obama, who ratified it by Executive Order on September 3, 2016. On June 1, 2017, President Trump announced that the United States is withdrawing from the Paris Agreement, however the Paris Agreement is still legally binding by the other remaining nations.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

5.2 Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for implementing federal policy to address global climate change. The Federal government administers a wide array of public-private partnerships to reduce U.S. GHG intensity. These programs focus on energy efficiency, renewable energy, methane, and other non-CO_2 gases, agricultural practices and implementation of technologies to achieve GHG reductions. EPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires 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 to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions did not impose any requirements on industry or other entities, however, since 2009 the EPA has been providing GHG emission standards for vehicles and other stationary sources of GHG emissions that are regulated by the EPA. On September 13, 2013 the EPA Administrator signed 40 CFR Part 60, that limits emissions from new sources to 1,100 pounds of CO_2 per MWh for fossil fuel-fired utility boilers and 1,000 pounds of CO_2 per MWh for large natural gas-fired combustion units.

On August 3, 2015, the EPA announced the Clean Power Plan, emissions guidelines for U.S. states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23 2015). On February 9, 2016 the Supreme Court stayed implementation of the Clean Power Plan due to a legal challenge from 29 states and in April 2017, the Supreme Court put the case on a 60 day hold and directed both sides to make arguments for whether it should keep the case on hold indefinitely or close it and remand the issue to the EPA. On October 11, 2017, the EPA issued a formal proposal to repeal the Clean Power Plan and on June 19, 2019, the EPA issued the Affordable Clean Energy Rule that replaces the Clean Power Plan.

On September 27, 2019, the EPA and the National Highway Safety Administration published the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks* (SAFE Vehicles Rule). Part One of the Rule revokes California's authority to set its own GHG emissions standards and zero-emission vehicle mandates in California, which results in one emission standard to be used nationally for all passenger cars and light trucks that is set by the EPA.

5.3 State

The California Air Resources Board (CARB) has the primary responsible for implementing state policy to address global climate change, however there are State regulations related to global climate change that affect a variety of State agencies. CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both the federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2008, CARB approved a Climate Change Scoping Plan that proposes a "comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008). The Climate Change Scoping Plan has a range of GHG reduction actions which include direct regulations; alternative compliance mechanisms; monetary and non-monetary incentives; voluntary actions; market-based mechanisms such as a cap-and-trade system. In 2014, CARB approved the First Update to the Climate Change Scoping Plan (CARB, 2014) that identifies additional strategies moving beyond the 2020 targets to the year 2050. On December 14, 2017 CARB adopted the California's 2017 Climate Change Scoping Plan, November 2017 (CARB, 2017) that provides specific statewide policies and measures to achieve the 2030 GHG reduction target of 40 percent below 1990 levels by 2030 and the aspirational 2050 GHG reduction target of 80 percent below 1990 levels by 2050. In addition, the State has passed the following laws directing CARB to develop actions to reduce GHG emissions, which are listed below in chronological order, with the most current first.

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The California Energy Commission (CEC) is the agency responsible for the standards that are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. In 2008 the State set an energy-use reduction goal of zero-net-energy use of all new homes by 2020 and the CEC was mandated to meet this goal through revisions to the Title 24, Part 6 regulations.

The Title 24 standards are updated on a three-year schedule and since 2008 the standards have been incrementally moving to the 2020 goal of the zero-net-energy use. Currently the 2019 Title 24 standards are in effect and have been designed so that the average new home built in California will now use zero-net-energy. Single-family homes built with 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards. The 2019 standards also now require that all single-family homes to have rooftop solar photovoltaic systems and when the solar systems are factored in, homes built under the 2019 standards will use about 53 percent less energy than homes built under the prior 2016 standards. In addition to requiring rooftop solar systems, the 2019 standards also encourage the use of battery storage and heat pump water heaters, require the more widespread use of LED lighting, as well as improve the building's thermal envelope through high performance attics, walls and windows. The 2019 standards also require improvements to ventilation systems by requiring highly efficient air filters to trap hazardous air particulates as well as improvements to kitchen ventilation systems. (https://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf)

California Code of Regulations (CCR) Title 24, Part 11

CCR Title 24, Part 11: *California Green Building Standards* (CalGreen) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The CalGreen Building Standards are also updated every three years and the current version is the 2019 California Green Building Standards Code, which became effective on January 1, 2020.

The CALGreen Code contains requirements for construction site selection; storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural

resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

The CALGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy efficient appliances, renewable energy, graywater systems, water efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, storm water management, building design, insulation, flooring, and framing, among others. Implementation of the CALGreen Code measures reduces energy consumption and vehicle trips and encourages the use of alternative-fuel vehicles, which reduces pollutant emissions.

Some of the notable changes in the 2019 CALGreen Code over the current 2016 CALGreen Code include: an alignment of building code engineering requirements with the national standards that include anchorage requirements for solar panels, provides design requirements for buildings in tsunami zones, increases Minimum Efficiency Reporting Value (MERV) for air filters from 8 to 13, increased electric vehicle charging requirements in parking areas, and sets minimum requirements for use of shade trees.

Senate Bill 100

Senate Bill 100 (SB 100) was adopted September 2018 and requires that by December 1, 2045 that 100 percent of retail sales of electricity to be generated from renewable or zero-carbon emission sources of electricity. SB 100 supersedes the renewable energy requirements set by SB 350, SB 1078, SB 107, and SB X1-2. However, the interim renewable energy thresholds from the prior Bills of 44 percent by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030, will remain in effect.

Executive Order B-48-18 and Assembly Bill 2127

The California Governor issued Executive Order B-48-18 on January 26, 2018 that orders all state entities to work with the private sector to put at least five million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 electric vehicle chargers by 2025. Currently there are approximately 350,000 electric vehicles operating in California, which represents approximately 1.5 percent of the 24 million vehicles total currently operating in California. Implementation of Executive Order B-48-18 would result in approximately 20 percent of all vehicles in California to be zero emission electric vehicles. Assembly Bill 2127 (AB 2127) was codified into statute on September 13, 2018 and requires that the California Energy Commission working with the State Air Resources Board prepare biannual assessments of the statewide electric vehicle charging infrastructure needed to support the levels of zero emission vehicle adoption required for the State to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030.

Executive Order B-30-15, Senate Bill 32 and Assembly Bill 197

The California Governor issued Executive Order B-30-15 on April 29, 2015 that aims to reduce California's GHG emissions 40 percent below 1990 levels by 2030. This executive order aligns California's GHG reduction targets with those of other international governments, such as the European Union that set the same target for 2030 in October, 2014. This target will make it possible to reach the ultimate goal of reducing GHG emissions 80 percent under 1990 levels by 2050 that is based on

scientifically established levels needed in the U.S.A to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels. Assembly Bill 197 (AB 197) (September 8, 2016) and Senate Bill 32 (SB 32) (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in Executive Order B-30-15. AB 197 also requires additional GHG emissions reporting that is broken down to sub-county levels and requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Executive Order B-29-15

The California Governor issued Executive Order B-29-15 on April 1, 2015 and directed the State Water Resources Control Board to impose restrictions to achieve a statewide 25% reduction in urban water usage and directed the Department of Water Resources to replace 50 million square feet of lawn with drought tolerant landscaping through an update to the State's Model Water Efficient Landscape Ordinance. The Ordinance also requires installation of more efficient irrigation systems, promotion of greywater usage and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles. Executive Order B-29-15 would reduce GHG emissions associated with the energy used to transport and filter water.

Assembly Bill 341 and Senate Bills 939 and 1374

Senate Bill 939 (SB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills. Assembly Bill 341 (AB 341) was adopted in 2011 and builds upon the waste reduction measures of SB 939 and 1374, and sets a new target of a 75 percent reduction in solid waste generated by the year 2020.

Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 in order to support the State's climate action goals to reduce GHG emissions through coordinated regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each Metropolitan Planning Organizations (MPO) within the State. It was up to each MPO to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP) to meet CARB's 2020 and 2035 GHG emission reduction targets. These reduction targets are required to be updated every eight years and the most current targets are detailed at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets, which provides GHG emissions reduction targets for SCAG of 8 percent by 2020 and 19 percent by 2035.

The *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS), adopted by SCAG April, 2016 provides a 2020 GHG emission reduction target of 8 percent and a 2035 GHG emission reduction target of 18 percent. SCAG will need to develop additional strategies in its next revision of the RTP/SCS in order to meet CARB's new 19 percent GHG emission reduction target for 2035. CARB is also charged with reviewing SCAG's RTP/SCS for consistency with its assigned targets.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS. However, new provisions of CEQA incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS and categorized as "transit priority projects."

Assembly Bill 1109

California Assembly Bill 1109 (AB 1109) was adopted October 2007, also known as the Lighting Efficiency and Toxics Reduction Act, prohibits the manufacturing of lights after January 1, 2010 that contain levels of hazardous substances prohibited by the European Union pursuant to the RoHS Directive. AB 1109 also requires reductions in energy usage for lighting and is structured to reduce lighting electrical consumption by: (1) At least 50 percent reduction from 2007 levels for indoor residential lighting; and (2) At least 25 percent reduction from 2007 levels for indoor commercial and all outdoor lighting by 2018. AB 1109 would reduce GHG emissions through reducing the amount of electricity required to be generated by fossil fuels in California.

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Executive Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

In 2009 CARB approved the proposed regulation to implement the LCFS. The standard was challenged in the courts, but has been in effect since 2011 and was re-approved by the CARB in 2015. The LCFS is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The LCFS is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet annually. Reformulated gasoline mixed with corn-derived ethanol and low-sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel. Compressed natural gas and liquefied natural gas also may be low-carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles, are also considered as low-carbon fuels.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the State CEQA guidelines that addresses GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporated GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and

no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate Action Plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the GHG emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of GHG emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports must specifically consider a project's energy use and energy efficiency potential.

Assembly Bill 32

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and utilize best management practices that are technologically feasible and cost effective.

In 2007 CARB released the calculated Year 1990 GHG emissions of 431 million metric tons of CO2e ($MMTCO_2e$). The 2020 target of 431 $MMTCO_2e$ requires the reduction of 78 $MMTCO_2e$, or approximately 16 percent from the State's projected 2020 business as usual emissions of 509 $MMTCO_2e$ (CARB, 2014). Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO_2 in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources, all of which became enforceable on or before January 1, 2010.

CARB's Scoping Plan that was adopted in 2009, proposes a variety of measures including: strengthening energy efficiency and building standards; targeted fees on water and energy use; a market-based cap-and-trade system; achieving a 33 percent renewable energy mix; and a fee regulation to fund the program. The 2014 update to the Scoping Plan identifies strategies moving beyond the 2020 targets to the year 2050.

The Cap and Trade Program established under the Scoping Plan sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and has established a market for long-term investment in energy efficiency and cleaner fuels since 2012.

Executive Order S-3-05

In 2005 the California Governor issued Executive Order S 3-05, GHG Emission, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels;
- 2020: Reduce greenhouse gas emissions to 1990 levels;
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs. The State achieved its first goal of reducing GHG emissions to 2000 levels by 2010.

Assembly Bill 1493

California Assembly Bill 1493 (also known as the Pavley Bill, in reference to its author Fran Pavley) was enacted on July 22, 2002 and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2004, CARB approved the "Pavley I" regulations limiting the amount of GHGs that may be released from new passenger automobiles that are being phased in between model years 2009 through 2016. These regulations will reduce GHG emissions by 30 percent from 2002 levels by 2016. The second set of regulations "Pavley II" is currently in development and will be phased in between model years 2017 through 2025 and will reduce emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards are being developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the "LEV III" (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars as well as promote zero-emissions auto technologies such as electricity and hydrogen, and through increasing the infrastructure for fueling hydrogen vehicles. In 2009, the U.S. EPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks and sport utility vehicles. In September 2009, the Pavley I regulations were adopted by CARB.

5.3 Regional – Southern California

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern

California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. The SCAQMD is also responsible for GHG emissions for projects where it is the lead agency. However, for other projects in the SCAB where it is not the lead agency, it is limited to providing resources to other lead agencies in order to assist them in determining GHG emission thresholds and GHG reduction measures. In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group and adopted Rules 2700, 2701, and 2702, which are described below.

SCAQMD Working Group

Since neither CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that either provides a quantitative annual thresholds of 3,500 $MTCO_2e$ for residential uses, 1,400 $MTCO_2e$ for commercial uses, and 3,000 $MTCO_2e$ for mixed uses. An alternative annual threshold of 3,000 $MTCO_2e$ for all land use types is also proposed.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted April, 2016 and the *2015 Federal Transportation Improvement* Program (FTIP), adopted October 2013, which addresses regional development and growth forecasts. Although the RTP/SCS and FTIP are primarily planning documents for future transportation projects a key component of these plans are to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The RTP/SCS, FTIP, and AQMP are based on projections originating within the City and County General Plans.

5.4 Local – City of San Juan Capistrano

Local jurisdictions, such as the City of San Juan Capistrano, have the authority and responsibility to reduce GHG emissions through their police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of GHG emissions resulting from its land use decisions. In accordance with CEQA requirements and the CEQA review process, the City assesses the global climate change potential of new development projects, requires mitigation of potentially significant global climate change impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

The City does not have any plans, polices, regulations, significance thresholds, or laws addressing climate change at this time. In April 2018, the City Council passed Resolution No. 18-04-17-04, which supports findings that human activities are key contributor to climate change, as well as acknowledges that if left unaddressed, the consequences of climate change will adversely impact the public, especially the most vulnerable populations.

6.0 ATMOSPHERIC SETTING

6.1 South Coast Air Basin

The project site is located within Orange County, which is part of the South Coast Air Basin (Air Basin) that includes the non-desert portions of Riverside, San Bernardino, and Los Angeles Counties and all of Orange County. The Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter.

6.2 Local Climate

Orange County is located on a coastal plain with connecting broad valleys and low hills to the east. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern.

Although the Air Basin has a semi-arid climate, the air near the surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry air is brought into the Air Basin by offshore winds, the ocean effect is dominant. Periods of heavy fog are frequent and low stratus clouds, often referred to as “high fog” are a characteristic climate feature.

Winds are an important parameter in characterizing the air quality environment of a project site because they determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in Orange County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean. These winds are usually the strongest in the dry summer months. Nighttime winds in Orange County are a result mainly from the drainage of cool air off of the mountains to the east and they occur more often during the winter months and are usually lighter than the daytime winds. Between the periods of dominant airflow, periods of air stagnation may occur, both in the morning and evening hours. Whether such a period of stagnation occurs is one of the critical determinants of air quality conditions on any given day.

During the winter and fall months, surface high-pressure systems north of the Air Basin combined with other meteorological conditions, can result in very strong winds, called “Santa Ana Winds”, from the northeast. These winds normally have durations of a few days before predominant meteorological conditions are reestablished. The highest wind speed typically occurs during the afternoon due to daytime thermal convection caused by surface heating. This convection brings about a downward transfer of momentum from stronger winds aloft. It is not uncommon to have sustained winds of 60 miles per hour with higher gusts during a Santa Ana Wind event.

The temperature and precipitation levels for San Juan Canyon, which is the nearest weather station to the project site with historical data is shown below in Table E. Table E shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table E – Monthly Climate Data

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Total Precipitation (inches)
January	72.0	38.0	2.26
February	69.8	38.7	4.43
March	74.1	42.5	1.22
April	75.6	44.9	0.94
May	79.8	49.5	0.29
June	80.1	56.2	0.05
July	89.5	59.3	0.05
August	90.2	56.6	0.01
September	89.8	54.6	0.04
October	81.0	50.5	0.14
November	73.2	42.3	0.98
December	68.7	37.0	1.93
Annual	**78.7**	**47.5**	**12.34**

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7836

6.3 Monitored Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Air Basin. Estimates of the existing emissions in the Air Basin provided in the 2012 AQMP, indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NOx emissions and 40 percent of directly emitted PM2.5, with another 10 percent of PM2.5 from road dust. The 2016 AQMP found that since 2012 AQMP projections were made stationary source VOC emissions have decreased by approximately 12 percent, but mobile VOC emissions have increased by 5 percent. The percentage of NOx emissions remain unchanged between the 2012 and 2016 projections.

SCAQMD has divided the Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in Air Monitoring Area 21, which covers the southeastern portion of Orange County. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the project site have been used; Mission Viejo Monitoring Station (Mission Viejo Station) and Costa Mesa Monitoring Station (Costa Mesa Station).

The Mission Viejo Station is located approximately nine miles north of the project site at 26081 Via Pera, Mission Viejo and the Costa Mesa Station is located approximately 18 miles northwest of the project site at 2850 Mesa Verde Drive East, Costa Mesa. The monitoring data is presented in Table F and shows the most recent three years of monitoring data from CARB. Ozone, PM10 and PM2.5 were measured at the Perris Station and NO_2 was measured at the Costa Mesa Station. CO measurements have not been provided, since CO is currently in attainment in the Air Basin and monitoring of CO within the Air Basin ended on March 31, 2013.

Table F – Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year[1] 2016	2017	2018
Ozone: [1]			
Maximum 1-Hour Concentration (ppm)	0.122	0.103	0.121
Days > CAAQS (0.09 ppm)	**5**	**3**	**2**
Maximum 8-Hour Concentration (ppm)	0.093	0.083	0.088
Days > NAAQS (0.070 ppm)	**13**	**25**	**9**
Days > CAAQs (0.070 ppm)	**13**	**27**	**10**
Nitrogen Dioxide:[2]			
Maximum 1-Hour Concentration (ppb)	59.8	45.3	ND
Days > NAAQS (100 ppb)	0	0	ND
Days > CAAQS (180 ppb)	0	0	ND
Inhalable Particulates (PM10) :[1]			
Maximum 24-Hour National Measurement (ug/m^3)	59.0	58.2	55.6
Days > NAAQS (150 ug/m^3)	0	0	0
Days > CAAQS (50 ug/m^3)	**1**	**1**	**1**
Annual Arithmetic Mean (AAM) (ug/m^3)	21.0	18.8	19.5
Annual > NAAQS (50 ug/m^3)	No	No	No
Annual > CAAQS (20 ug/m^3)	**Yes**	No	No
Ultra-Fine Particulates (PM2.5):[1]			
Maximum 24-Hour National Measurement (ug/m^3)	24.7	19.5	38.9
Days > NAAQS (35 ug/m^3)	0	0	**1**
Annual Arithmetic Mean (AAM) (ug/m^3)	7.3	ND	ND
Annual > NAAQS and CAAQS (12 ug/m^3)	No	ND	ND

Notes: Exceedances are listed in **bold.** CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion; ND = no data available.

[1] Data obtained from the Mission Viejo Station.

[2] Data obtained from the Costa Mesa Station.

Source: http://www.arb.ca.gov/adam/

Ozone

During the last three years, the State 1-hour concentration standard for ozone has been exceeded between2 and 5 days each year at the Mission Viejo Station. The State 8-hour ozone standard has been exceeded between 10 and 27 days each year over the last three years at the Mission Viejo Station. The Federal 8-hour ozone standard has been exceeded between 9 and 25 days each year over the last three years at the Mission Viejo Station. Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of

Southern California contribute to the ozone levels experienced at this monitoring station, with the more significant areas being those directly upwind.

Nitrogen Dioxide

The Costa Mesa Station did not record an exceedance of either the Federal or State 1-hour NO_2 standards for the last three years.

Particulate Matter

The State 24-hour concentration standard for PM10 has been exceeded one day each year over the past three years at the Mission Viejo Station. Over the past three years the Federal 24-hour standard for PM10 has not been exceeded at the Mission Viejo Station. The annual PM10 concentration at the Mission Viejo Station has exceeded the State standard for one of the past three years and has not exceeded the Federal standard for the past three years.

Over the past three years the 24-hour concentration standard for PM2.5 has been exceeded only one day in the year 2018 over the past three years at the Mission Viejo Station. The annual PM2.5 concentrations at the Mission Viejo Station has not exceeded either the State or Federal standard for the past three years. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

6.4 Toxic Air Contaminant Levels in the Air Basin

In order to determine the Air Basin-wide risks associated with major airborne carcinogens, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES) studies. According to the SCAQMD's MATES-IV study, the project site has an estimated cancer risk of 417 per million persons chance of cancer. In comparison, the average cancer risk for the Air Basin is 991 per million persons, which is based on the use of age-sensitivity factors detailed in the OEHHA Guidelines (OEHHA, 2015).

In order to provide a perspective of risk, it is often estimated that the incidence in cancer over a lifetime for the U.S. population ranges between 1 in 3 to 4 and 1 in 3, or a risk of about 300,000 per million persons. The MATES-III study referenced a Harvard Report on Cancer Prevention, which estimated that of cancers associated with known risk factors, about 30 percent were related to tobacco, about 30 percent were related to diet and obesity, and about 2 percent were associated with environmental pollution related exposures that includes hazardous air pollutants.

7.0 MODELING PARAMETERS AND ASSUMPTIONS

7.1 CalEEMod Model Input Parameters

The criteria air pollution and GHG emissions impacts created by the proposed project have been analyzed through use of CalEEMod Version 2016.3.2. CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2014 computer program to calculate the emission rates specific for Orange County for employee, vendor and haul truck vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy equipment operations. EMFAC2014 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The project characteristics in the CalEEMod model were set to a project location of Orange County, a Climate Zone of 8, utility company of Southern California Edison, and an opening year of 2021 was utilized in this analysis.

Land Use Parameters

The maximum potential development that would occur within the HTC area with implementation of the proposed project has been detailed above in Section 1.3 and quantified in Table A. Table A provides a comparison of the development that would occur with the HTC Repeal to existing conditions and to buildout of the HTC Master Plan. Since CEQA requires analysis of the change between the proposed project and existing conditions, the comparison between implementation of the HTC Repeal (proposed project) to the existing conditions have been modeled in the CalEEMod model and the parameters that were entered into the CalEEMod model are shown in Table G.

Table G – CalEEMod Land Use Parameters

Land Use	Land Use Subtype in CalEEMod	Land Use Size[1]	Lot Acreage[2]	Building/Paving[3] (square feet)
Retail	Strip Mall	167.73 TSF	3.85	167,727
Commercial/Office	General Office Building	31.03 TSF	0.71	31,030
Civic	Government (Civic Center)	14.96 TSF	0.34	14,962
Religious	--	0	0	0
Education	--	0	0	0
Other	--	0	0	0
Residential (units)	--	0	0	0
Hotel (rooms)	Hotel	285 RM	9.5	413,820
Parking Spaces	Parking Lot	58 PS	0.52	23,200

Notes:
[1] TSF = Thousand Square Feet; RM = Hotel Room; PS = Parking Space
[2] Lot acreage calculated based on the CalEEMod default values.
[3] Building/Paving square feet represent area where architectural coatings will be applied and the square footage of the proposed single-family homes were obtained from the architectural plans.

Electricity Emission Factors

The default CalEEMod emission factors for Southern California Edison (from the CEC's year 2012 data) are as follows:

- Carbon dioxide: 702.44 pounds per megawatt-hour
- Methane: 0.029 pounds per megawatt-hour
- Nitrous oxide: 0.006 pounds per megawatt-hour

According to SB 100, 60 percent of electricity is required to be from renewable sources by 2030. In order to account for SB 100, the difference between the percent renewable sources in 2012 was determined from the Southern California Edison Power Content Label for 2012 that showed 23 percent of electricity was from renewable sources, which results in a 37 percent increase in renewable electricity will occur between the default 2012 values and the year 2030 power content for Southern California Edison. The 37 percent increase in renewable sources of electricity was applied to the CalEEMod default intensity factors and the resultant intensity factors that have been utilized in this analysis are shown below:

- Carbon dioxide: 442.53 pounds per megawatt-hour
- Methane: 0.018 pounds per megawatt-hour
- Nitrous oxide: 0.004 pounds per megawatt-hour

It should be noted that the use of the above intensity factors is a conservative estimate, since by the year 2045 SB 100 requires that 100 percent of electricity in California is generated from renewable sources.

Construction Parameters

Construction activities have been modeled based on worst-case condition of all possible development that is could be created from implementation of the proposed HTCMP Master Plan Repeal project occurring simultaneously and starting in early 2022 and taking 21 months to complete. The construction-related GHG emissions were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The phases of construction activities that have been analyzed include: 1) Demolition, 2) Site preparation, 3) Grading, 4) Building construction, 5) Paving, and 6) Application of architectural coatings. For all phases the default vehicle trips and equipment mix has been utilized.

Operational Emissions Modeling

The operations-related criteria air pollutant emissions and GHG emissions created by the proposed project have been analyzed through use of the CalEEMod model. The proposed project was analyzed in the CalEEMod model based on the land use parameters provided above.

<u>Mobile Sources</u>

Mobile sources include emissions generated from the additional vehicle trips that would occur through implementation of the proposed project. The CalEEMod default vehicle trip rates were utilized in the analysis. No changes were made to the default mobile source parameters in the CalEEMod model.

The CalEEMod model provides the selection of “mitigation” to account for project conditions that would result in less emissions than a project without these conditions, however it should be noted that this “mitigation” may represent current conditions, such as development that is in close proximity to an existing transit facility, where a project built at such location, would create less vehicle trips and associated emissions than a project that was not built in close proximity to an existing transit facility.

The mobile source emissions analysis for the Project included the CalEEMod "mitigation" of improved pedestrian network onsite and connecting offsite, and increase transit accessibility with the Metrolink/Amtrak station located an average of 0.08 mile from most uses within the HTC area.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. The area sources were based on the ongoing use of the project in the CalEEMod Model. No changes were made to the default area source parameters in the CalEEMod model.

Energy Usage

Energy usage includes emissions from electricity and natural gas used onsite. The energy usage was based on the ongoing use of the project in the CalEEMod Model. No changes were made to the default energy usage parameters in the CalEEMod model.

In order to account for the new 2019 Title 24, Part 6 standards, this analysis included the CalEEMod "mitigation" of exceed the 2016 Title 24 standards by 30 percent and reduce lighting energy by 30 percent, since the 2019 building standards have been calculated to result in new nonresidential uses using about 30 percent less energy, including lighting energy when compared to the 2016 building standards
https://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf

Solid Waste

Waste includes the GHG emissions associated with the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. The analysis was based on the default CalEEMod waste generation rates of 290 tons of solid waste per year from the proposed project. No changes were made to the default solid waste parameters or mitigation measures in the CalEEMod model.

The CalEEMod "mitigation" of a 50 percent reduction in landfill waste was selected to account for implementation of AB 341 that provides strategies to reduce, recycle or compost solid waste by 75 percent by 2020. Only 50 percent was selected, since AB 341 builds upon the waste reduction measures of SB 939 and 1374 and therefore, it was assumed approximately 25 percent of the waste reduction target has already been accounted for in the CalEEMod model.

Water and Wastewater

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. The analysis was based on the default CalEEMod water usage rate of 20,911,211 gallons per year of indoor water usage and 12,816,548 gallons per year of outdoor water usage. No changes were made to the default water and wastewater parameters in the CalEEMod model.

The CalEEMod "mitigation" of the use of low flow faucets, showers, and toilets and use of smart irrigation system controllers were selected to account for the implementation of the 2016 CCR Title 24 Part 11 (CalGreen) requirements.

8.0 THRESHOLDS OF SIGNIFICANCE

8.1 Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominant pollution generators in the Air Basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table H.

Table H – SCAQMD Regional Criteria Pollutant Emission Thresholds of Significance

	Pollutant Emissions (pounds/day)						
	VOC	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**Lead**
Construction	75	100	550	150	150	55	3
Operation	55	55	550	150	150	55	3

Source: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2

8.2 Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. SCAQMD has also provided *Final Localized Significance Threshold Methodology* (LST Methodology), July 2008, which details the methodology to analyze local air emission impacts. The LST Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5. The project is a Master Plan, and therefore, no specific projects are being evaluated. The potential for exceedance of the LST thresholds will be discussed in general terms in this assessment, and site-specific analysis will be needed later on a project by project basis.

8.3 Toxic Air Contaminants

According to the SCAQMD CEQA Handbook, any project that has the potential to expose the public to toxic air contaminants in excess of the following thresholds would be considered to have a significant air quality impact:

- If the Maximum Incremental Cancer Risk is 10 in one million or greater; or
- Toxic air contaminants from the proposed project would result in a Hazard Index increase of 1 or greater.

In order to determine if the proposed project may have a significant impact related to toxic air contaminants (TACs), the *Health Risk Assessment Guidance for analyzing Cancer Risks from Mobile*

Source Diesel Idling Emissions for CEQA Air Quality Analysis, (Diesel Analysis) prepared by SCAQMD, August 2003, recommends that if the proposed project is anticipated to create TACs through stationary sources or regular operations of diesel trucks on the project site, then the proximity of the nearest receptors to the source of the TAC and the toxicity of the hazardous air pollutant (HAP) should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

8.4 Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

> "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
>
> The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

8.5 Greenhouse Gas Emissions

According to Section 15064.4(b) of the *2020 CEQA Statute & Guidelines*, prepared by AEP, the significance of a project's GHG emissions 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 proposed project is located within the jurisdiction of the SCAQMD. In order to identify significance criteria under CEQA for both project level and plan level projects, SCAQMD initiated a Working Group, which provided detailed methodology for evaluating significance under CEQA in order to meet the reduction goal codified in AB 32 of reducing GHG emissions to 1990 levels by 2020. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides five tiers of thresholds to determine significance. Although the SCAQMD provided substantial evidence supporting the use of the tiered threshold, the thresholds were prepared prior to the issuance of Executive Order B-30-15 on April 29, 2015 that provided a reduction goal of 40 percent below 1990 levels by 2030. This target was codified into statute through passage of AB 197 and SB 32 in September 2016.

California's 2017 Climate Change Scoping Plan, prepared by CARB, November 2017, was prepared to address the implementation of the GHG emissions reduction targets provided in SB 32 and AB 197. The Scoping Plan recommends for plan level analyses, such as the Project, that local governments utilize GHG emission goals of 6 $MTCO_2e$ per service population for the year 2030 and 2 $MTCO_2e$ per service population for the year 2050. Since the Project has a buildout year of 2040, linear interpolation was used between the 2030 and 2050 GHG emissions goals, which results in a GHG emission goal of 4.0 $MTCO_2e$ per service population for the year 2040. Utilization of the thresholds provided in the Scoping

Plan represent the rate of GHG emission reductions necessary for the City to achieve its fair share of statewide GHG emission reductions necessary to meet the State's long-term GHG emissions reduction targets.

Therefore, the proposed project would be considered to create a significant cumulative GHG impact if implementation of the Project would exceed 4 $MTCO_2e$ per year per service population or 22,860 $MTCO_2e$ per year (based on a service population of 5,715 [TranspoGroup, 2020]).

9.0 IMPACT ANALYSIS

9.1 CEQA Thresholds of Significance

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality and GHG emissions would occur if the proposed project is determined to:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people;
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

9.2 Air Quality Compliance

The proposed project would not conflict with or obstruct implementation of the SCAQMD Air Quality Management Plan (AQMP). The following section discusses the proposed project's consistency with the SCAQMD AQMP.

SCAQMD Air Quality Management Plan

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and regional plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in this report, short-term regional construction and ongoing operations of the potential buildout of the proposed project would generate air pollutant emissions that are inconsequential on a regional basis and would not result in significant impacts based on SCAQMD thresholds of significance discussed above in Section 8.1. However, as detailed above in Section 8.2, the project is a Master Plan, and therefore, no specific projects are being evaluated. As such it is not possible at this time assess if a significant construction-related local impact may be created from a development that may occur with implementation of the proposed project. Therefore, there is a potential for a significant construction-related local air quality impact to occur from implementation of the proposed project.

Air Quality Mitigation Measure 1 has been incorporated into this analysis that requires all future development projects within the HTC Area that require either earthmoving activities or extensive demolition or building construction to prepare a project specific air quality assessment that analyzes the construction and operational regional and localized air impacts created from the specific project and address all CEQA-related air quality and GHG emissions checklist questions. If the air quality assessment finds a significant impact, the air quality assessment shall develop adequate mitigation to reduce the impacts to less than significant levels.

Therefore, based on the information provided above, with implementation of Mitigation Measure 1, the proposed project would be consistent with the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to insure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The AQMP is developed through use of the planning forecasts provided in the RTP/SCS and FTIP. The RTP/SCS is a major planning document for the regional transportation and land use network within Southern California. The RTP/SCS is a long-range plan that is required by federal and state requirements placed on SCAG and is updated every four years. The FTIP provides long-range planning for future transportation improvement projects that are constructed with state and/or federal funds within Southern California. Local governments are required to use these plans as the basis of their plans for the purpose of consistency with applicable regional plans under CEQA.

The proposed project would consist of removing inconsistencies that currently exist between the HTCMP, General Plan and FBC. The proposed revisions to the HTCMP have the potential to result in slightly higher densities of non-residential land uses within the HTC, while removing the residential component within the HTC. The RTP/SCS promotes higher densities for areas that are in close proximity to transit hubs as well as walkable communities. Since, the entire HTC area is within walking distance of the San Juan Capistrano Metrolink/Amtrak Station, the project would conform to the strategies provided in the RTP/SCS. As such, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, with implementation of Air Quality Mitigation Measure 1 in order to meet Criterion 1, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur in relation to implementation of the AQMP.

Level of Significance Before Mitigation

Potentially significant impact.

> **Air Quality Mitigation Measure 1**
> All land use development projects within the HTC Area that require either earthmoving activities or extensive demolition or building construction shall prepare a project specific air quality assessment that analyzes the construction and operational regional and localized air impacts created from the specific project and addresses all CEQA-related air quality and greenhouse gas emissions checklist questions. If the air quality assessment finds a significant impact, the air quality assessment shall develop adequate mitigation to reduce the impacts to a less than significant level.

Level of Significance After Mitigation

Less than significant impact.

9.3 Cumulative Net Increase in Non-Attainment Pollution

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard. The following section calculates the potential air emissions associated with the construction and operations of the proposed project and compares the emissions to the SCAQMD standards.

Construction Emissions

The construction emissions have been analyzed for both regional and local air quality impacts.

Construction-Related Regional Impacts

The CalEEMod model has been utilized to calculate the construction-related regional emissions from the proposed project and the input parameters utilized in this analysis have been detailed in Section 7.1. The worst-case summer or winter daily construction-related criteria pollutant emissions from the proposed project for each phase of construction activities are shown below in Table I and the CalEEMod daily printouts are shown in Appendix A.

Table I – Construction-Related Regional Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Demolition[1]	2.70	25.75	21.02	0.04	1.41	1.20
Site Preparation[1]	3.24	33.12	20.21	0.04	9.94	6.01
Grading[1]	3.70	38.89	29.61	0.06	5.76	3.18
Building Construction (2022)	2.96	25.63	26.14	0.08	4.35	1.74
Building Construction (2022)	2.71	22.01	25.36	0.08	4.23	1.63
Paving	1.16	10.22	14.98	0.02	0.68	0.51
Architectural Coating	73.17	1.40	3.13	0.03	0.63	0.22
Maximum Daily Construction Emissions	**73.17**	**38.89**	**29.61**	**0.08**	**9.94**	**6.01**
SCQAMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Demolition, Site Preparation and Grading based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
Source: CalEEMod Version 2016.3.2.

Table I shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds during either demolition, site preparation, grading or the combined building construction, paving, and architectural coatings phases. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. As detailed above in Section 8.2, the project is a Master Plan, and therefore, no specific projects are being evaluated. As such it is not possible at this time assess if a significant construction-related local impact may be created from a development that may occur with implementation of the proposed project. Therefore, there is a potential for a significant construction-related local air quality impact to occur from implementation of the proposed project.

Air Quality Mitigation Measure 1 has been incorporated into this analysis that requires all future development projects within the HTC Area that require either earthmoving activities or extensive demolition or building construction to prepare a project specific air quality assessment that analyzes the construction and operational regional and localized air impacts created from the specific project and address all CEQA-related air quality and GHG emissions checklist questions. If the air quality assessment finds a significant impact, the air quality assessment shall develop adequate mitigation to reduce the localized air quality impacts to less than significant levels. Therefore, with implementation of Air Quality Mitigation Measure 1, a less than significant local air quality impact would occur from construction of the proposed project.

Operational Emissions

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips, emissions from energy usage, and onsite area source emissions created from the on-going use of the proposed

project. The following section provides an analysis of potential long-term air quality impacts due to regional air quality and local air quality impacts with the on-going operations of the proposed project.

Operations-Related Regional Criteria Pollutant Analysis

The operations-related regional criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model and the input parameters utilized in this analysis have been detailed in Section 7.1. The worst-case summer or winter VOC, NOx, CO, SO_2, PM10, and PM2.5 daily emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table J and the CalEEMod daily emissions printouts are shown in Appendix A.

Table J – Operational Regional Criteria Pollutant Emissions

	Pollutant Emissions (pounds/day)					
Activity	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
Area Sources[1]	14.03	0.00	0.06	0.00	0.00	0.00
Energy Usage[2]	0.44	4.01	3.37	0.02	0.30	0.30
Mobile Sources[3]	6.45	33.05	74.11	0.39	47.09	12.70
Total Emissions	**20.93**	**37.06**	**77.53**	**0.41**	**47.40**	**13.01**
SCQAMD Operational Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consist of emissions from natural gas usage.
[3] Mobile sources consist of emissions from vehicles and road dust.
Source: Calculated from CalEEMod Version 2016.3.2.

The data provided in Table J below shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

In *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (also referred to as "*Friant Ranch*"), the California Supreme Court held that when an EIR concluded that when a project would have significant impacts to air quality impacts, an EIR should "make a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." , In order to determine compliance with this Case, the Court developed a three part test that includes the following:

1) The air quality discussion shall describe the specific health risks created from each criteria pollutant, including diesel particulate matter.

This Analysis details the specific health risks created from each criteria pollutant above in Section 4.1 and specifically in Table C. In addition, the specific health risks created from diesel particulate matter is detailed above in Section 2.2 of this analysis. As such, this analysis meets the part 1 requirements of the Friant Ranch Case.

2) The analysis shall identify the magnitude of the health risks created from the Project. The Ruling details how to identify the magnitude of the health risks. Specifically, on page 24 of the ruling it states "The Court of Appeal identified several ways in which the EIR could have framed the analysis so as to adequately inform the public and decision makers of possible adverse health

effects. The County could have, for example, identified the Project's impact on the days of nonattainment per year."

Table J above shows that the primary source of operational air emissions would be created from mobile source emissions that would be generated throughout the Air Basin. As such, any adverse health impacts created from the proposed project should be assessed on a basin-wide level, since the air emissions created from implementation of the Project would have the potential to impact a large portion of the Basin. As indicated above in Table C, the Air Basin has been designated by EPA for the national standards as a non-attainment area for ozone, PM2.5, and partial non-attainment for lead. In addition, PM10 has been designated by the State as non-attainment. It should be noted that VOC and NOx are ozone precursors, as such they have been considered as non-attainment pollutants. According to the 2016 AQMP, in 2016 the total emissions of: VOC was 500 tons per year; NOx was 522 tons per year; SOx was 18 tons per year; and PM2.5 was 66 tons per year. Since the 2016 AQMP did not calculate total PM10 emissions, the total PM10 emissions were obtained from *The California Almanac of Emissions and Air Quality 2013 Edition,* prepared by CARB, for the year 2020. The project contribution to each criteria pollutant in the Air Basin is shown in Table K.

Table K – Project's Contribution to Criteria Pollutants in the South Coast Air Basin

	Pollutant Emissions (pounds/day)					
Emissions Source	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
Project Emissions[1]	20.93	37.06	77.53	0.41	47.40	13.01
Total Emissions in Air Basin[2]	1,000,000	1,044,000	4,246,000	36,000	322,000	132,000
Project's Percent of Air Emissions	**0.0021%**	**0.0036%**	**0.0018%**	**0.00112%**	**0.015%**	**0.0099%**

Notes:
[1] From the project's total operational emissions shown above in Table J.
[2] VOC, NOx, CO, SO_2 and PM2.5 from 2016 AQMP and PM10 from the California Almanac of Emissions and Air Quality 2013 Edition.

As shown in Table K, the project would increase criteria pollutant emissions by as much as 0.0015 percent for PM10 in the South Coast Air Basin. Due to these nominal increases in the Air Basin-wide criteria pollutant emissions, no increases in days of non-attainment are anticipated to occur from operation of the proposed project. As such, this analysis meets the part 2 requirements of the Friant Ranch Case.

3) If addressing the magnitude of the health risk is not possible, then explain why not possible. Also explain if any mitigation provided is deferred mitigation.

Since Part 2 adequately explains the magnitude of the health risks created by implementation of the Project onto the Air Basin, Part 3 is limited to analyzing if Air Quality Mitigation Measure 1 is deferred mitigation. Air Quality Mitigation Measure 1 requires all future development projects within the HTC Area that require either earthmoving activities or extensive demolition or building construction to prepare a project specific air quality assessment that analyzes the construction and operational regional and localized air impacts created from the specific project and address all CEQA-related air quality and GHG emissions checklist questions. If the air quality assessment finds a significant impact, the air quality assessment shall develop adequate mitigation to reduce the impacts to less than significant levels. Since the Mitigation requires that all future development to meet the air quality thresholds and does not allow a development to be constructed that exceeds the applicable thresholds, it is not possible for a specific development project to be constructed in the HTC Area that would create significant levels of air

emissions that would have the potential to create adverse health impacts. As such, this analysis meets the part 3 requirements of the Friant Ranch Case. Therefore, with implementation of Air Quality Mitigation Measure 1, impacts would be less than significant.

Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analyzes the vehicular CO emissions and local impacts from on-site operations.

Local CO Hotspot Impacts from Project-Generated Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards of 20 ppm over one hour or 9 ppm over eight hours.

At the time of the 1993 Handbook, the Air Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technologies on industrial facilities, CO concentrations in the Air Basin and in the state have steadily declined. According to the SCAQMD Air Quality Data Tables, in 2007 the Saddleback Valley had maximum CO concentrations of 3 ppm for 1 hour and 2.2 ppm for 8-hours and in 2018 the Saddleback Valley had maximum CO concentrations of 1.2 ppm for 1-hour and 0.9 ppm for 8-hours, which represent decreases in CO concentrations of 60 percent and 59 percent, respectively between 2018 and 2007. In 2007, the Air Basin was designated in attainment for CO under both the CAAQS and NAAQS. SCAQMD conducted a CO hot spot analysis for attainment at the busiest intersections in Los Angeles[1] during the peak morning and afternoon periods and did not predict a violation of CO standards. Since the nearby intersections to the proposed project are much smaller with less traffic than what was analyzed by the SCAQMD and since the CO concentrations are now approximately 60 percent lower than when CO was designated in attainment in 2007, no local CO Hotspot are anticipated to be created from the proposed project and no CO Hotspot modeling was performed. Therefore, a less than significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

Local Criteria Pollutant Impacts from Onsite Operations

Project-related air emissions from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances may have the potential to create emissions areas that exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. As detailed above in Section

[1] The four intersections analyzed by the SCAQMD were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning and LOS F in the evening peak hour.

8.2, the project is a Master Plan, and therefore, no specific development projects are being evaluated. As such it is not possible at this time to assess if a significant operation-related local impact may be created from a development that may occur with implementation of the proposed project. Therefore, there is a potential for operation-related local air quality impact to occur from implementation of the proposed project.

Air Quality Mitigation Measure 1 has been incorporated into this analysis that requires future development projects within the HTC Area that require either earthmoving activities or extensive demolition or building construction to prepare a project specific air quality assessment that analyzes the construction and operational regional and localized air impacts created from the specific project and address all CEQA-related air quality and GHG emissions checklist questions. If the air quality assessment finds a significant impact, the air quality assessment shall develop adequate mitigation to reduce the localized air quality impacts to less than significant levels. Therefore, with implementation of Air Quality Mitigation Measure 1, a less than significant local air quality impact would occur from operation of the proposed project.

Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Air Quality Mitigation Measure 1 provided above in Section 9.2.

Level of Significance After Mitigation

Less than significant impact.

9.4 Sensitive Receptors

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the proposed project, which may expose sensitive receptors to substantial concentrations have been calculated above in Section 9.3 for both construction and operations, which are discussed separately below. The discussion below also includes an analysis of the potential impacts from toxic air contaminant emissions. The nearest sensitive receptors to the HTC Area are the residences located on the west side of the railroad, approximately 40 feet west of the HTC Area. The nearest schools to the project site are San Juan Elementary School located on the north side of Spring Street, approximately 60 feet north of the HTC Area and Junipero Serra High School located on the north side of Acjachema Street, approximately 40 feet north of the HTC Area.

Construction-Related Sensitive Receptor Impacts

The construction activities that may occur for implementation of the proposed project would typically include: include: 1) Demolition, 2) Site preparation, 3) Grading, 4) Building construction, 5) Paving, and 6) Application of architectural coatings. Construction activities may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from toxic air contaminant emissions created from onsite construction equipment, which are described below.

Local Criteria Pollutant Impacts from Construction

As detailed above in Section 8.2, the project is a Master Plan, and therefore, no specific development projects are being evaluated. As such it is not possible at this time to assess if a significant construction-related local impact may be created from a development that may occur with implementation of the proposed project. Therefore, there is a potential for construction-related local air quality impact to occur from implementation of the proposed project.

Air Quality Mitigation Measure 1 has been incorporated into this analysis that requires future development projects within the HTC Area that require either earthmoving activities or extensive demolition or building construction to prepare a project specific air quality assessment that analyzes the construction and operational regional and localized air impacts created from the specific project and address all CEQA-related air quality and GHG emissions checklist questions . If the air quality assessment finds a significant impact, the air quality assessment shall develop adequate mitigation to reduce the localized air quality impacts to less than significant levels. Therefore, with implementation of Air Quality Mitigation Measure 1, construction activities that may require from implementation of the proposed project would create a less than significant construction-related impact to local air quality.

Toxic Air Contaminants Impacts from Construction

The greatest potential for toxic air contaminant emissions would be related to diesel particulate matter (DPM) emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of "individual cancer risk". "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. It should be noted that the most current cancer risk assessment methodology recommends analyzing a 30 year exposure period for the nearby sensitive receptors (OEHHA, 2015).

Given the relatively limited number of heavy-duty construction equipment, the varying distances that construction equipment would operate to the nearby sensitive receptors, and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 30 or 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. In addition, California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than five minutes, requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet's usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each fleet, and currently no commercial operator is allowed to purchase Tier 0 or Tier 1 equipment and by January 2023 no commercial operator is allowed to purchase Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023. Therefore, since the majority if not all construction within the HTC Area would occur in 2023 or latter, when the most stringent equipment standards will be in effect, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project. As such, construction of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Operations-Related Sensitive Receptor Impacts

The on-going operations of the proposed project may expose sensitive receptors to substantial pollutant concentrations of local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from onsite operations. The following analyzes the vehicular CO emissions. Local criteria pollutant impacts from onsite operations, and toxic air contaminant impacts.

Local CO Hotspot Impacts from Project-Generated Vehicle Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential impacts to sensitive receptors. The analysis provided above in Section 9.3 shows that no local CO Hotspots are anticipated to be created at any nearby intersections from the vehicle traffic generated by the proposed project. Therefore, operation of the proposed project would result in a less than significant exposure of offsite sensitive receptors to substantial pollutant concentrations.

Local Criteria Pollutant Impacts from Onsite Operations

Project-related air emissions from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances may have the potential to create emissions areas that exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. As detailed above in Section 8.2, the project is a Master Plan, and therefore, no specific projects are being evaluated. As such it is not possible at this time assess if a significant operation-related local impact may be created from a development that may occur with implementation of the proposed project. Therefore, there is a potential for operation-related local air quality impact to occur from implementation of the proposed project.

Air Quality Mitigation Measure 1 has been incorporated into this analysis that requires future development projects within the HTC Area that require either earthmoving activities or extensive demolition or building construction to prepare a project specific air quality assessment that analyzes the construction and operational regional and localized air impacts created from the specific project and address all CEQA-related air quality and GHG emissions checklist questions. If the air quality assessment finds a significant impact, the air quality assessment shall develop adequate mitigation to reduce the localized air quality impacts to less than significant levels. Therefore, with implementation of Air Quality Mitigation Measure 1, a less than significant local air quality impact would occur from operation of the proposed project.

Operations-Related Toxic Air Contaminant Impacts

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas and according to *The California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips that are anticipated to be generated by implementation of the proposed project, a less than significant TAC impact would occur during the on-going operations of the proposed project and no mitigation would be required.

Therefore, operation of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Air Quality Mitigation Measure 1 provided above in Section 9.2.

Level of Significance After Mitigation

Less than significant impact.

9.5 Odor Emissions Adversely Affecting a Substantial Number of People

The proposed project would not create objectionable odors affecting a substantial number of people. Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people that live and work in the immediate vicinity of the project site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality, this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration. Potential odor impacts have been analyzed separately for construction and operations below.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement, paints and solvents and from emissions from diesel equipment. The objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. Due to the transitory nature of construction odors, a less than significant odor impact would occur and no mitigation would be required.

Operations-Related Odor Impacts

The proposed project would consist of removing inconsistencies that currently exist between the HTCMP, General Plan and FBC. The proposed revisions to the HTCMP have the potential to result in slightly higher densities of non-residential land uses within the HTC, while removing the residential component within the HTC. Land uses typically associated with odors include wastewater treatment facilities, waste-disposal facilities, specialized industrial uses that include chemical manufacturing, fiberglass manufacturing, and painting/coating operations, or agricultural operations. None of these types of uses would be allowed within the HTC Area. As such, the project's long-term operational activities are not anticipated to create odor emissions that would generate numerous odor complaints. Therefore, a less than significant odor impact would occur from operation of the proposed project and no mitigation would be required.

Level of Significance

Less than significant impact.

9.6 Generation of Greenhouse Gas Emissions

Implementation of the proposed project may generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The proposed project would consist of the operation of the proposed land uses as detailed above in Section 1.3. Operational activities would result in GHG emissions of: (1) Area sources that include emissions from landscaping equipment; (2) Energy usage that include natural gas and electrical appliances; and (3) mobile sources that include emissions from automobile and truck trips generated by the proposed land uses.

The project's GHG emissions have been calculated with the CalEEMod model based on the construction and operational parameters detailed in Section 7.1 above. The GHG emissions forecast assumes that several State GHG reduction measures will be implemented by 2040, including the following actions:

- Implementation of the Renewable Portfolio Standard, which requires electricity providers to increase the portion of energy that comes from renewable sources to 60 percent by 2030 and zero-carbon sources by 2045;
- Implement of the most current Title 24 Part 6 and Part 11 building energy use standards;
- Reduction of indoor and outdoor commercial lighting energy usage as detailed in AB 1109;
- Implementation of light and heavy-duty vehicle fleet regulations, including Pavley standards as well as the future *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rules from the EPA; and*
- Adoption of Complete Streets standards to expand pedestrian and bicycle infrastructure.

In addition, to the above GHG reduction measures, the Project location that includes an Amtrak/Metrolink Station and existing sidewalks on most of the HTC Area roadways were accounted for in the GHG emissions forecast. All input parameters utilized in the calculation of the GHG emissions forecast is detailed above in Section 7.1 and a summary of the results is shown below in Table L. The CalEEMod model run annual printouts are provided in Appendix B.

Table L – Project Related Greenhouse Gas Annual Emissions Forecast for Buildout Year 2040

	Greenhouse Gas Emissions (Metric Tons per Year)			
Category	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Area Sources[1]	0.01	0.00	0.00	0.01
Energy Usage[2]	1,604.51	0.05	0.02	1,611.80
Mobile Sources[3]	5,187.67	0.20	0.00	5,192.62
Solid Waste[4]	45.30	2.68	0.00	112.22
Water and Wastewater[5]	94.50	0.74	0.02	118.33
Construction[6]	41.42	0.01	0.00	41.56
Total Emissions	6,973.42	3.67	0.04	**7,076.54**
HTC Areas Service Population[7]				5,715
$MTCO_2e$ per Service Population				**1.24**
Threshold of Significance (Metric Tons CO_2e per Service Population)				**4.0**
Exceeds Threshold?				No

Notes:
[1] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consists of GHG emissions from electricity and natural gas usage.
[3] Mobile sources consist of GHG emissions from vehicles.
[4] Waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[5] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[6] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.
[7] Service population obtained from TranspoGroup, 2020.
Source: CalEEMod Version 2016.3.2.

The data provided in Table L shows that implementation of all potential development within the HTC Area with adoption of the Project would create 7,076.54 $MTCO_2e$ per year, which is equivalent to 1.24 $MTCO_2e$ per year per service population. According to the threshold of significance detailed above in Section 8.5, a cumulative global climate change impact would occur if the GHG emissions exceed 4.0 $MTCO_2e$ per year per service population for the year 2040. Therefore, a less than significant generation of greenhouse gas emissions would occur from construction and operation of the proposed project.

Level of Significance

Less than significant impact.

9.7 Greenhouse Gas Plan Consistency

The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The proposed project would consist of removing inconsistencies that currently exist between the HTCMP, General Plan and FBC. The proposed revisions to the HTCMP have the potential to result in slightly higher densities of non-residential land uses within the HTC, while removing the residential component within the HTC.

As detailed above in Section 9.6, the proposed project is anticipated to create 7,076.54 $MTCO_2e$ per year, which is equivalent to 1.24 $MTCO_2e$ per year per service population, which is well below the 4.0 $MTCO_2e$ per service population for the year 2040 that was determined through linear interpolation of the 2017 Scoping Plan goals of 6 $MTCO_2e$ per service population for the year 2030 and 2 $MTCO_2e$ per service population for the year 2050. Utilization of the thresholds provided in the Scoping Plan represent the rate of GHG emission reductions necessary for the City to achieve its fair share of statewide GHG emission reductions necessary to meet the State's long-term GHG emissions reduction

targets. It should also be noted that the entire HTC area is within walking distance of the San Juan Capistrano Metrolink/Amtrak Station, the project would conform to the goals provided in the RTP/SCS that include Goal 8: Encourage land use and growth patterns that facilitate transit and active transportation. Therefore, the proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Level of Significance

Less than significant impact.

10.0 REFERENCES

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APPENDIX A

CalEEMod Model Daily Printouts

HTCMP Master Plan Repeal

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	31.03	1000sqft	0.71	31,030.00	0
Government (Civic Center)	14.96	1000sqft	0.34	14,960.00	0
Parking Lot	58.00	Space	0.52	23,200.00	0
Hotel	285.00	Room	9.50	413,820.00	0
Strip Mall	167.73	1000sqft	3.85	167,730.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	442.53	**CH4 Intensity (lb/MWhr)**	0.018	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SCE GHG Intensity Factors adjusted per SB 100 that requires 60% electricity from renewable sources by 2030

Land Use -

Construction Phase - Construction start 1-1-22 end 10-8-23

Energy Use -

Construction Off-road Equipment Mitigation - Water 2x per day selected to account for SCAQMD Rule 403 minimum requirements.

Mobile Land Use Mitigation - Improve Pedestrian Network Onsite and Connecting Offsite; Average 0.08 mile to Transit Station

Energy Mitigation - Exceed Title 24 by 30% and 30% lighting reduction

Water Mitigation - Install Low-Flow fixtures and Use Water-Efficient Irrigation

Waste Mitigation - 50% Reduction in waste per AB341 waste reduction requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	80.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.018
tblProjectCharacteristics	CO2IntensityFactor	702.44	442.53
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6930	38.8830	29.6085	0.0786	18.2675	1.6363	19.8813	9.9840	1.5054	11.4688	0.0000	7,955.4336	7,955.4336	1.9483	0.0000	7,977.4830
2023	73.1500	22.0054	25.3595	0.0768	3.5004	0.7259	4.2263	0.9437	0.6829	1.6266	0.0000	7,771.6307	7,771.6307	0.8577	0.0000	7,793.0735
Maximum	**73.1500**	**38.8830**	**29.6085**	**0.0786**	**18.2675**	**1.6363**	**19.8813**	**9.9840**	**1.5054**	**11.4688**	**0.0000**	**7,955.4336**	**7,955.4336**	**1.9483**	**0.0000**	**7,977.4830**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6930	38.8830	29.6085	0.0786	8.3310	1.6363	9.9449	4.5222	1.5054	6.0069	0.0000	7,955.4336	7,955.4336	1.9483	0.0000	7,977.4830
2023	73.1500	22.0054	25.3595	0.0768	3.5004	0.7259	4.2263	0.9437	0.6829	1.6266	0.0000	7,771.6307	7,771.6307	0.8577	0.0000	7,793.0735
Maximum	**73.1500**	**38.8830**	**29.6085**	**0.0786**	**8.3310**	**1.6363**	**9.9449**	**4.5222**	**1.5054**	**6.0069**	**0.0000**	**7,955.4336**	**7,955.4336**	**1.9483**	**0.0000**	**7,977.4830**

	ROG	NOx	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**	**45.65**	**0.00**	**41.22**	**49.98**	**0.00**	**41.71**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	14.0342	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297
Energy	0.4411	4.0100	3.3684	0.0241		0.3048	0.3048		0.3048	0.3048		4,811.9722	4,811.9722	0.0922	0.0882	4,840.5673
Mobile	6.4518	33.0520	74.1091	0.3894	46.9322	0.1604	47.0926	12.5532	0.1491	12.7023		40,065.7320	40,065.7320	1.4567		40,102.1484
Total	**20.9271**	**37.0625**	**77.5339**	**0.4135**	**46.9322**	**0.4654**	**47.3975**	**12.5532**	**0.4540**	**13.0073**		**44,877.8260**	**44,877.8260**	**1.5492**	**0.0882**	**44,942.8454**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	14.0342	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297
Energy	0.3294	2.9949	2.5158	0.0180		0.2276	0.2276		0.2276	0.2276		3,593.9325	3,593.9325	0.0689	0.0659	3,615.2895
Mobile	6.1588	31.9977	67.1020	0.3468	41.3942	0.1444	41.5386	11.0720	0.1342	11.2062		35,695.8213	35,695.8213	1.3129		35,728.6439
Total	**20.5225**	**34.9932**	**69.6742**	**0.3647**	**41.3942**	**0.3723**	**41.7665**	**11.0720**	**0.3620**	**11.4340**		**39,289.8757**	**39,289.8757**	**1.3821**	**0.0659**	**39,344.0631**

	ROG	NOx	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	**1.93**	**5.58**	**10.14**	**11.78**	**11.80**	**20.00**	**11.88**	**11.80**	**20.26**	**12.10**	**0.00**	**12.45**	**12.45**	**10.79**	**25.31**	**12.46**

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	1/1/2022	1/28/2022	5	20	
2	Site Preparation	Site Preparation	1/29/2022	2/11/2022	5	10	
3	Grading	Grading	2/12/2022	3/25/2022	5	30	
4	Building Construction	Building Construction	3/26/2022	5/19/2023	5	300	
5	Paving	Paving	5/20/2023	6/16/2023	5	20	
6	Architectural Coating	Architectural Coating	6/17/2023	10/8/2023	5	80	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0.52

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 941,310; Non-Residential Outdoor: 313,770; Striped Parking Area: 1,392 (Architectural Coating – sqft)

OffRoad Equipment

HTCMP Master Plan Repeal - Orange County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	252.00	107.00	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
Architectural Coating	1	50.00	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 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**		**1.2427**	**1.2427**		**1.1553**	**1.1553**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0512	0.0297	0.4252	1.5200e-003	0.1677	1.0600e-003	0.1687	0.0445	9.8000e-004	0.0455		151.9802	151.9802	3.0700e-003		152.0569
Total	**0.0512**	**0.0297**	**0.4252**	**1.5200e-003**	**0.1677**	**1.0600e-003**	**0.1687**	**0.0445**	**9.8000e-004**	**0.0455**		**151.9802**	**151.9802**	**3.0700e-003**		**152.0569**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**		**1.2427**	**1.2427**		**1.1553**	**1.1553**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0512	0.0297	0.4252	1.5200e-003	0.1677	1.0600e-003	0.1687	0.0445	9.8000e-004	0.0455		151.9802	151.9802	3.0700e-003		152.0569
Total	**0.0512**	**0.0297**	**0.4252**	**1.5200e-003**	**0.1677**	**1.0600e-003**	**0.1687**	**0.0445**	**9.8000e-004**	**0.0455**		**151.9802**	**151.9802**	**3.0700e-003**		**152.0569**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

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

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0614	0.0356	0.5103	1.8300e-003	0.2012	1.2800e-003	0.2025	0.0534	1.1800e-003	0.0545		182.3762	182.3762	3.6800e-003		182.4683
Total	**0.0614**	**0.0356**	**0.5103**	**1.8300e-003**	**0.2012**	**1.2800e-003**	**0.2025**	**0.0534**	**1.1800e-003**	**0.0545**		**182.3762**	**182.3762**	**3.6800e-003**		**182.4683**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**8.1298**	**1.6126**	**9.7424**	**4.4688**	**1.4836**	**5.9524**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0614	0.0356	0.5103	1.8300e-003	0.2012	1.2800e-003	0.2025	0.0534	1.1800e-003	0.0545		182.3762	182.3762	3.6800e-003		182.4683
Total	**0.0614**	**0.0356**	**0.5103**	**1.8300e-003**	**0.2012**	**1.2800e-003**	**0.2025**	**0.0534**	**1.1800e-003**	**0.0545**		**182.3762**	**182.3762**	**3.6800e-003**		**182.4683**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0682	0.0396	0.5670	2.0300e-003	0.2236	1.4200e-003	0.2250	0.0593	1.3100e-003	0.0606		202.6403	202.6403	4.0900e-003		202.7426
Total	**0.0682**	**0.0396**	**0.5670**	**2.0300e-003**	**0.2236**	**1.4200e-003**	**0.2250**	**0.0593**	**1.3100e-003**	**0.0606**		**202.6403**	**202.6403**	**4.0900e-003**		**202.7426**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**3.9030**	**1.6349**	**5.5379**	**1.6184**	**1.5041**	**3.1225**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0682	0.0396	0.5670	2.0300e-003	0.2236	1.4200e-003	0.2250	0.0593	1.3100e-003	0.0606		202.6403	202.6403	4.0900e-003		202.7426
Total	**0.0682**	**0.0396**	**0.5670**	**2.0300e-003**	**0.2236**	**1.4200e-003**	**0.2250**	**0.0593**	**1.3100e-003**	**0.0606**		**202.6403**	**202.6403**	**4.0900e-003**		**202.7426**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

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

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2684	9.4968	2.6287	0.0261	0.6836	0.0181	0.7018	0.1967	0.0174	0.2141		2,847.8329	2,847.8329	0.2185		2,853.2945
Worker	0.8596	0.4986	7.1436	0.0256	2.8168	0.0179	2.8346	0.7470	0.0165	0.7635		2,553.2671	2,553.2671	0.0516		2,554.5563
Total	**1.1280**	**9.9954**	**9.7723**	**0.0517**	**3.5004**	**0.0360**	**3.5364**	**0.9437**	**0.0338**	**0.9776**		**5,401.1000**	**5,401.1000**	**0.2700**		**5,407.8508**

Mitigated Construction On-Site

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

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2684	9.4968	2.6287	0.0261	0.6836	0.0181	0.7018	0.1967	0.0174	0.2141		2,847.8329	2,847.8329	0.2185		2,853.2945
Worker	0.8596	0.4986	7.1436	0.0256	2.8168	0.0179	2.8346	0.7470	0.0165	0.7635		2,553.2671	2,553.2671	0.0516		2,554.5563
Total	**1.1280**	**9.9954**	**9.7723**	**0.0517**	**3.5004**	**0.0360**	**3.5364**	**0.9437**	**0.0338**	**0.9776**		**5,401.1000**	**5,401.1000**	**0.2700**		**5,407.8508**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

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

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2043	7.1678	2.4534	0.0252	0.6836	8.6300e-003	0.6922	0.1967	8.2500e-003	0.2050		2,761.3121	2,761.3121	0.2031		2,766.3894
Worker	0.8141	0.4527	6.6620	0.0246	2.8168	0.0176	2.8343	0.7470	0.0162	0.7632		2,455.1087	2,455.1087	0.0468		2,456.2781
Total	**1.0184**	**7.6205**	**9.1155**	**0.0498**	**3.5004**	**0.0262**	**3.5266**	**0.9437**	**0.0244**	**0.9682**		**5,216.4208**	**5,216.4208**	**0.2499**		**5,222.6675**

Mitigated Construction On-Site

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

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2043	7.1678	2.4534	0.0252	0.6836	8.6300e-003	0.6922	0.1967	8.2500e-003	0.2050		2,761.3121	2,761.3121	0.2031		2,766.3894
Worker	0.8141	0.4527	6.6620	0.0246	2.8168	0.0176	2.8343	0.7470	0.0162	0.7632		2,455.1087	2,455.1087	0.0468		2,456.2781
Total	**1.0184**	**7.6205**	**9.1155**	**0.0498**	**3.5004**	**0.0262**	**3.5266**	**0.9437**	**0.0244**	**0.9682**		**5,216.4208**	**5,216.4208**	**0.2499**		**5,222.6675**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0681					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1009**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0485	0.0270	0.3966	1.4600e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		146.1374	146.1374	2.7800e-003		146.2070
Total	**0.0485**	**0.0270**	**0.3966**	**1.4600e-003**	**0.1677**	**1.0500e-003**	**0.1687**	**0.0445**	**9.6000e-004**	**0.0454**		**146.1374**	**146.1374**	**2.7800e-003**		**146.2070**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0681					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1009**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0485	0.0270	0.3966	1.4600e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		146.1374	146.1374	2.7800e-003		146.2070
Total	**0.0485**	**0.0270**	**0.3966**	**1.4600e-003**	**0.1677**	**1.0500e-003**	**0.1687**	**0.0445**	**9.6000e-004**	**0.0454**		**146.1374**	**146.1374**	**2.7800e-003**		**146.2070**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	72.7969					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**72.9885**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1615	0.0898	1.3218	4.8800e-003	0.5589	3.4900e-003	0.5624	0.1482	3.2100e-003	0.1514		487.1247	487.1247	9.2800e-003		487.3568
Total	**0.1615**	**0.0898**	**1.3218**	**4.8800e-003**	**0.5589**	**3.4900e-003**	**0.5624**	**0.1482**	**3.2100e-003**	**0.1514**		**487.1247**	**487.1247**	**9.2800e-003**		**487.3568**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	72.7969					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**72.9885**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1615	0.0898	1.3218	4.8800e-003	0.5589	3.4900e-003	0.5624	0.1482	3.2100e-003	0.1514		487.1247	487.1247	9.2800e-003		487.3568
Total	**0.1615**	**0.0898**	**1.3218**	**4.8800e-003**	**0.5589**	**3.4900e-003**	**0.5624**	**0.1482**	**3.2100e-003**	**0.1514**		**487.1247**	**487.1247**	**9.2800e-003**		**487.3568**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

Improve Pedestrian 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	lb/day										lb/day					
Mitigated	6.1588	31.9977	67.1020	0.3468	41.3942	0.1444	41.5386	11.0720	0.1342	11.2062		35,695.8213	35,695.8213	1.3129		35,728.6439
Unmitigated	6.4518	33.0520	74.1091	0.3894	46.9322	0.1604	47.0926	12.5532	0.1491	12.7023		40,065.7320	40,065.7320	1.4567		40,102.1484

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	342.26	76.33	32.58	837,681	738,835
Government (Civic Center)	417.68	0.00	0.00	921,329	812,612
Hotel	2,328.45	2,334.15	1695.75	5,342,347	4,711,950
Parking Lot	0.00	0.00	0.00		
Strip Mall	7,433.79	7,051.37	3426.72	12,950,439	11,422,287
Total	10,522.19	9,461.85	5,155.06	20,051,796	17,685,684

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
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Government (Civic Center)	16.60	8.40	6.90	75.00	20.00	5.00	50	34	16
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Government (Civic Center)	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Hotel	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Parking Lot	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Strip Mall	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

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	lb/day										lb/day					
NaturalGas Mitigated	0.3294	2.9949	2.5158	0.0180		0.2276	0.2276		0.2276	0.2276		3,593.9325	3,593.9325	0.0689	0.0659	3,615.2895
NaturalGas Unmitigated	0.4411	4.0100	3.3684	0.0241		0.3048	0.3048		0.3048	0.3048		4,811.9722	4,811.9722	0.0922	0.0882	4,840.5673

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	777.025	8.3800e-003	0.0762	0.0640	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003		91.4147	91.4147	1.7500e-003	1.6800e-003	91.9580
Government (Civic Center)	374.615	4.0400e-003	0.0367	0.0309	2.2000e-004		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003		44.0723	44.0723	8.4000e-004	8.1000e-004	44.3342
Hotel	38831.1	0.4188	3.8070	3.1979	0.0228		0.2893	0.2893		0.2893	0.2893		4,568.3594	4,568.3594	0.0876	0.0838	4,595.5069
Parking Lot	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
Strip Mall	919.068	9.9100e-003	0.0901	0.0757	5.4000e-004		6.8500e-003	6.8500e-003		6.8500e-003	6.8500e-003		108.1257	108.1257	2.0700e-003	1.9800e-003	108.7682
Total		**0.4411**	**4.0100**	**3.3684**	**0.0241**		**0.3048**	**0.3048**		**0.3048**	**0.3048**		**4,811.9722**	**4,811.9722**	**0.0922**	**0.0882**	**4,840.5673**

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	lb/day										lb/day					
General Office Building	0.557945	6.0200e-003	0.0547	0.0460	3.3000e-004		4.1600e-003	4.1600e-003		4.1600e-003	4.1600e-003		65.6406	65.6406	1.2600e-003	1.2000e-003	66.0307
Government (Civic Center)	0.268993	2.9000e-003	0.0264	0.0222	1.6000e-004		2.0000e-003	2.0000e-003		2.0000e-003	2.0000e-003		31.6463	31.6463	6.1000e-004	5.8000e-004	31.8343
Hotel	28.9334	0.3120	2.8366	2.3828	0.0170		0.2156	0.2156		0.2156	0.2156		3,403.9279	3,403.9279	0.0652	0.0624	3,424.1558
Parking Lot	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
Strip Mall	0.788101	8.5000e-003	0.0773	0.0649	4.6000e-004		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003		92.7178	92.7178	1.7800e-003	1.7000e-003	93.2688
Total		**0.3295**	**2.9949**	**2.5158**	**0.0180**		**0.2276**	**0.2276**		**0.2276**	**0.2276**		**3,593.9326**	**3,593.9326**	**0.0689**	**0.0659**	**3,615.2895**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	14.0342	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297
Unmitigated	14.0342	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5956					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.4335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.1700e-003	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297
Total	**14.0342**	**5.1000e-004**	**0.0565**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**		**0.1218**	**0.1218**	**3.1000e-004**		**0.1297**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5956					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.4335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.1700e-003	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297
Total	**14.0342**	**5.1000e-004**	**0.0565**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**		**0.1218**	**0.1218**	**3.1000e-004**		**0.1297**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

HTCMP Master Plan Repeal

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	31.03	1000sqft	0.71	31,030.00	0
Government (Civic Center)	14.96	1000sqft	0.34	14,960.00	0
Parking Lot	58.00	Space	0.52	23,200.00	0
Hotel	285.00	Room	9.50	413,820.00	0
Strip Mall	167.73	1000sqft	3.85	167,730.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	442.53	**CH4 Intensity (lb/MWhr)**	0.018	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SCE GHG Intensity Factors adjusted per SB 100 that requires 60% electricity from renewable sources by 2030

Land Use -

Construction Phase - Construction start 1-1-22 end 10-8-23

Energy Use -

Construction Off-road Equipment Mitigation - Water 2x per day selected to account for SCAQMD Rule 403 minimum requirements.

Mobile Land Use Mitigation - Improve Pedestrian Network Onsite and Connecting Offsite; Average 0.08 mile to Transit Station

Energy Mitigation - Exceed Title 24 by 30% and 30% lighting reduction

Water Mitigation - Install Low-Flow fixtures and Use Water-Efficient Irrigation

Waste Mitigation - 50% Reduction in waste per AB341 waste reduction requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	80.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.018
tblProjectCharacteristics	CO2IntensityFactor	702.44	442.53
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.7023	38.8870	29.5639	0.0766	18.2675	1.6363	19.8813	9.9840	1.5054	11.4688	0.0000	7,748.5655	7,748.5655	1.9481	0.0000	7,770.8009
2023	73.1724	22.0088	25.0186	0.0749	3.5004	0.7265	4.2268	0.9437	0.6834	1.6271	0.0000	7,573.4080	7,573.4080	0.8635	0.0000	7,594.9956
Maximum	**73.1724**	**38.8870**	**29.5639**	**0.0766**	**18.2675**	**1.6363**	**19.8813**	**9.9840**	**1.5054**	**11.4688**	**0.0000**	**7,748.5655**	**7,748.5655**	**1.9481**	**0.0000**	**7,770.8009**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.7023	38.8870	29.5639	0.0766	8.3310	1.6363	9.9449	4.5222	1.5054	6.0069	0.0000	7,748.5655	7,748.5655	1.9481	0.0000	7,770.8009
2023	73.1724	22.0088	25.0186	0.0749	3.5004	0.7265	4.2268	0.9437	0.6834	1.6271	0.0000	7,573.4080	7,573.4080	0.8635	0.0000	7,594.9956
Maximum	**73.1724**	**38.8870**	**29.5639**	**0.0766**	**8.3310**	**1.6363**	**9.9449**	**4.5222**	**1.5054**	**6.0069**	**0.0000**	**7,748.5655**	**7,748.5655**	**1.9481**	**0.0000**	**7,770.8009**

	ROG	**NOx**	**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**	**45.65**	**0.00**	**41.22**	**49.98**	**0.00**	**41.71**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	14.0342	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297
Energy	0.4411	4.0100	3.3684	0.0241		0.3048	0.3048		0.3048	0.3048		4,811.9722	4,811.9722	0.0922	0.0882	4,840.5673
Mobile	6.3305	33.2198	71.8764	0.3727	46.9322	0.1608	47.0929	12.5532	0.1494	12.7027		38,368.0254	38,368.0254	1.4742		38,404.8807
Total	**20.8058**	**37.2303**	**75.3013**	**0.3968**	**46.9322**	**0.4657**	**47.3979**	**12.5532**	**0.4544**	**13.0076**		**43,180.1194**	**43,180.1194**	**1.5668**	**0.0882**	**43,245.5777**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	14.0342	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297
Energy	0.3294	2.9949	2.5158	0.0180		0.2276	0.2276		0.2276	0.2276		3,593.9325	3,593.9325	0.0689	0.0659	3,615.2895
Mobile	6.0387	32.1032	65.3915	0.3318	41.3942	0.1448	41.5390	11.0720	0.1346	11.2065		34,166.4932	34,166.4932	1.3316		34,199.7830
Total	**20.4023**	**35.0986**	**67.9637**	**0.3497**	**41.3942**	**0.3726**	**41.7668**	**11.0720**	**0.3624**	**11.4344**		**37,760.5476**	**37,760.5476**	**1.4008**	**0.0659**	**37,815.2022**

	ROG	NOx	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	**1.94**	**5.73**	**9.74**	**11.85**	**11.80**	**19.99**	**11.88**	**11.80**	**20.25**	**12.09**	**0.00**	**12.55**	**12.55**	**10.59**	**25.31**	**12.56**

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	1/1/2022	1/28/2022	5	20	
2	Site Preparation	Site Preparation	1/29/2022	2/11/2022	5	10	
3	Grading	Grading	2/12/2022	3/25/2022	5	30	
4	Building Construction	Building Construction	3/26/2022	5/19/2023	5	300	
5	Paving	Paving	5/20/2023	6/16/2023	5	20	
6	Architectural Coating	Architectural Coating	6/17/2023	10/8/2023	5	80	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0.52

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 941,310; Non-Residential Outdoor: 313,770; Striped Parking Area: 1,392 (Architectural Coating – sqft)

OffRoad Equipment

HTCMP Master Plan Repeal - Orange County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	252.00	107.00	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
Architectural Coating	1	50.00	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 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**		**1.2427**	**1.2427**		**1.1553**	**1.1553**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0581	0.0326	0.3918	1.4400e-003	0.1677	1.0600e-003	0.1687	0.0445	9.8000e-004	0.0455		143.8468	143.8468	2.9000e-003		143.9194
Total	**0.0581**	**0.0326**	**0.3918**	**1.4400e-003**	**0.1677**	**1.0600e-003**	**0.1687**	**0.0445**	**9.8000e-004**	**0.0455**		**143.8468**	**143.8468**	**2.9000e-003**		**143.9194**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**		**1.2427**	**1.2427**		**1.1553**	**1.1553**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0581	0.0326	0.3918	1.4400e-003	0.1677	1.0600e-003	0.1687	0.0445	9.8000e-004	0.0455		143.8468	143.8468	2.9000e-003		143.9194
Total	**0.0581**	**0.0326**	**0.3918**	**1.4400e-003**	**0.1677**	**1.0600e-003**	**0.1687**	**0.0445**	**9.8000e-004**	**0.0455**		**143.8468**	**143.8468**	**2.9000e-003**		**143.9194**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

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

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0697	0.0391	0.4701	1.7300e-003	0.2012	1.2800e-003	0.2025	0.0534	1.1800e-003	0.0545		172.6162	172.6162	3.4800e-003		172.7033
Total	**0.0697**	**0.0391**	**0.4701**	**1.7300e-003**	**0.2012**	**1.2800e-003**	**0.2025**	**0.0534**	**1.1800e-003**	**0.0545**		**172.6162**	**172.6162**	**3.4800e-003**		**172.7033**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**8.1298**	**1.6126**	**9.7424**	**4.4688**	**1.4836**	**5.9524**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0697	0.0391	0.4701	1.7300e-003	0.2012	1.2800e-003	0.2025	0.0534	1.1800e-003	0.0545		172.6162	172.6162	3.4800e-003		172.7033
Total	**0.0697**	**0.0391**	**0.4701**	**1.7300e-003**	**0.2012**	**1.2800e-003**	**0.2025**	**0.0534**	**1.1800e-003**	**0.0545**		**172.6162**	**172.6162**	**3.4800e-003**		**172.7033**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0774	0.0435	0.5224	1.9200e-003	0.2236	1.4200e-003	0.2250	0.0593	1.3100e-003	0.0606		191.7958	191.7958	3.8700e-003		191.8925
Total	**0.0774**	**0.0435**	**0.5224**	**1.9200e-003**	**0.2236**	**1.4200e-003**	**0.2250**	**0.0593**	**1.3100e-003**	**0.0606**		**191.7958**	**191.7958**	**3.8700e-003**		**191.8925**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**3.9030**	**1.6349**	**5.5379**	**1.6184**	**1.5041**	**3.1225**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0774	0.0435	0.5224	1.9200e-003	0.2236	1.4200e-003	0.2250	0.0593	1.3100e-003	0.0606		191.7958	191.7958	3.8700e-003		191.8925
Total	**0.0774**	**0.0435**	**0.5224**	**1.9200e-003**	**0.2236**	**1.4200e-003**	**0.2250**	**0.0593**	**1.3100e-003**	**0.0606**		**191.7958**	**191.7958**	**3.8700e-003**		**191.8925**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

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

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2818	9.4679	2.8797	0.0255	0.6836	0.0188	0.7025	0.1967	0.0180	0.2147		2,777.6054	2,777.6054	0.2287		2,783.3230
Worker	0.9758	0.5478	6.5817	0.0242	2.8168	0.0179	2.8346	0.7470	0.0165	0.7635		2,416.6265	2,416.6265	0.0488		2,417.8457
Total	**1.2576**	**10.0157**	**9.4614**	**0.0497**	**3.5004**	**0.0367**	**3.5371**	**0.9437**	**0.0345**	**0.9782**		**5,194.2319**	**5,194.2319**	**0.2775**		**5,201.1687**

Mitigated Construction On-Site

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

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2818	9.4679	2.8797	0.0255	0.6836	0.0188	0.7025	0.1967	0.0180	0.2147		2,777.6054	2,777.6054	0.2287		2,783.3230
Worker	0.9758	0.5478	6.5817	0.0242	2.8168	0.0179	2.8346	0.7470	0.0165	0.7635		2,416.6265	2,416.6265	0.0488		2,417.8457
Total	**1.2576**	**10.0157**	**9.4614**	**0.0497**	**3.5004**	**0.0367**	**3.5371**	**0.9437**	**0.0345**	**0.9782**		**5,194.2319**	**5,194.2319**	**0.2775**		**5,201.1687**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

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

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2146	7.1267	2.6462	0.0246	0.6836	9.1600e-003	0.6928	0.1967	8.7600e-003	0.2055		2,694.3590	2,694.3590	0.2115		2,699.6456
Worker	0.9268	0.4973	6.1284	0.0233	2.8168	0.0176	2.8343	0.7470	0.0162	0.7632		2,323.8391	2,323.8391	0.0442		2,324.9439
Total	**1.1414**	**7.6239**	**8.7746**	**0.0479**	**3.5004**	**0.0267**	**3.5271**	**0.9437**	**0.0249**	**0.9687**		**5,018.1981**	**5,018.1981**	**0.2557**		**5,024.5895**

Mitigated Construction On-Site

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

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2146	7.1267	2.6462	0.0246	0.6836	9.1600e-003	0.6928	0.1967	8.7600e-003	0.2055		2,694.3590	2,694.3590	0.2115		2,699.6456
Worker	0.9268	0.4973	6.1284	0.0233	2.8168	0.0176	2.8343	0.7470	0.0162	0.7632		2,323.8391	2,323.8391	0.0442		2,324.9439
Total	**1.1414**	**7.6239**	**8.7746**	**0.0479**	**3.5004**	**0.0267**	**3.5271**	**0.9437**	**0.0249**	**0.9687**		**5,018.1981**	**5,018.1981**	**0.2557**		**5,024.5895**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0681					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1009**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0552	0.0296	0.3648	1.3900e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		138.3238	138.3238	2.6300e-003		138.3895
Total	**0.0552**	**0.0296**	**0.3648**	**1.3900e-003**	**0.1677**	**1.0500e-003**	**0.1687**	**0.0445**	**9.6000e-004**	**0.0454**		**138.3238**	**138.3238**	**2.6300e-003**		**138.3895**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0681					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1009**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0552	0.0296	0.3648	1.3900e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		138.3238	138.3238	2.6300e-003		138.3895
Total	**0.0552**	**0.0296**	**0.3648**	**1.3900e-003**	**0.1677**	**1.0500e-003**	**0.1687**	**0.0445**	**9.6000e-004**	**0.0454**		**138.3238**	**138.3238**	**2.6300e-003**		**138.3895**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	72.7969					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**72.9885**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1839	0.0987	1.2160	4.6200e-003	0.5589	3.4900e-003	0.5624	0.1482	3.2100e-003	0.1514		461.0792	461.0792	8.7700e-003		461.2984
Total	**0.1839**	**0.0987**	**1.2160**	**4.6200e-003**	**0.5589**	**3.4900e-003**	**0.5624**	**0.1482**	**3.2100e-003**	**0.1514**		**461.0792**	**461.0792**	**8.7700e-003**		**461.2984**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	72.7969					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**72.9885**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1839	0.0987	1.2160	4.6200e-003	0.5589	3.4900e-003	0.5624	0.1482	3.2100e-003	0.1514		461.0792	461.0792	8.7700e-003		461.2984
Total	**0.1839**	**0.0987**	**1.2160**	**4.6200e-003**	**0.5589**	**3.4900e-003**	**0.5624**	**0.1482**	**3.2100e-003**	**0.1514**		**461.0792**	**461.0792**	**8.7700e-003**		**461.2984**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

Improve Pedestrian 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	lb/day										lb/day					
Mitigated	6.0387	32.1032	65.3915	0.3318	41.3942	0.1448	41.5390	11.0720	0.1346	11.2065		34,166.4932	34,166.4932	1.3316		34,199.7830
Unmitigated	6.3305	33.2198	71.8764	0.3727	46.9322	0.1608	47.0929	12.5532	0.1494	12.7027		38,368.0254	38,368.0254	1.4742		38,404.8807

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	342.26	76.33	32.58	837,681	738,835
Government (Civic Center)	417.68	0.00	0.00	921,329	812,612
Hotel	2,328.45	2,334.15	1695.75	5,342,347	4,711,950
Parking Lot	0.00	0.00	0.00		
Strip Mall	7,433.79	7,051.37	3426.72	12,950,439	11,422,287
Total	10,522.19	9,461.85	5,155.06	20,051,796	17,685,684

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
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Government (Civic Center)	16.60	8.40	6.90	75.00	20.00	5.00	50	34	16
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Government (Civic Center)	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Hotel	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Parking Lot	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Strip Mall	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

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	lb/day										lb/day					
NaturalGas Mitigated	0.3294	2.9949	2.5158	0.0180		0.2276	0.2276		0.2276	0.2276		3,593.9325	3,593.9325	0.0689	0.0659	3,615.2895
NaturalGas Unmitigated	0.4411	4.0100	3.3684	0.0241		0.3048	0.3048		0.3048	0.3048		4,811.9722	4,811.9722	0.0922	0.0882	4,840.5673

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	777.025	8.3800e-003	0.0762	0.0640	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003		91.4147	91.4147	1.7500e-003	1.6800e-003	91.9580
Government (Civic Center)	374.615	4.0400e-003	0.0367	0.0309	2.2000e-004		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003		44.0723	44.0723	8.4000e-004	8.1000e-004	44.3342
Hotel	38831.1	0.4188	3.8070	3.1979	0.0228		0.2893	0.2893		0.2893	0.2893		4,568.3594	4,568.3594	0.0876	0.0838	4,595.5069
Parking Lot	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
Strip Mall	919.068	9.9100e-003	0.0901	0.0757	5.4000e-004		6.8500e-003	6.8500e-003		6.8500e-003	6.8500e-003		108.1257	108.1257	2.0700e-003	1.9800e-003	108.7682
Total		**0.4411**	**4.0100**	**3.3684**	**0.0241**		**0.3048**	**0.3048**		**0.3048**	**0.3048**		**4,811.9722**	**4,811.9722**	**0.0922**	**0.0882**	**4,840.5673**

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	lb/day										lb/day					
General Office Building	0.557945	6.0200e-003	0.0547	0.0460	3.3000e-004		4.1600e-003	4.1600e-003		4.1600e-003	4.1600e-003		65.6406	65.6406	1.2600e-003	1.2000e-003	66.0307
Government (Civic Center)	0.268993	2.9000e-003	0.0264	0.0222	1.6000e-004		2.0000e-003	2.0000e-003		2.0000e-003	2.0000e-003		31.6463	31.6463	6.1000e-004	5.8000e-004	31.8343
Hotel	28.9334	0.3120	2.8366	2.3828	0.0170		0.2156	0.2156		0.2156	0.2156		3,403.9279	3,403.9279	0.0652	0.0624	3,424.1558
Parking Lot	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
Strip Mall	0.788101	8.5000e-003	0.0773	0.0649	4.6000e-004		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003		92.7178	92.7178	1.7800e-003	1.7000e-003	93.2688
Total		**0.3295**	**2.9949**	**2.5158**	**0.0180**		**0.2276**	**0.2276**		**0.2276**	**0.2276**		**3,593.9326**	**3,593.9326**	**0.0689**	**0.0659**	**3,615.2895**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	14.0342	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297
Unmitigated	14.0342	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5956					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.4335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.1700e-003	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297
Total	**14.0342**	**5.1000e-004**	**0.0565**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**		**0.1218**	**0.1218**	**3.1000e-004**		**0.1297**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5956					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.4335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.1700e-003	5.1000e-004	0.0565	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1218	0.1218	3.1000e-004		0.1297
Total	**14.0342**	**5.1000e-004**	**0.0565**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**		**0.1218**	**0.1218**	**3.1000e-004**		**0.1297**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

CalEEMod Model Annual Printouts

HTCMP Master Plan Repeal

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	31.03	1000sqft	0.71	31,030.00	0
Government (Civic Center)	14.96	1000sqft	0.34	14,960.00	0
Parking Lot	58.00	Space	0.52	23,200.00	0
Hotel	285.00	Room	9.50	413,820.00	0
Strip Mall	167.73	1000sqft	3.85	167,730.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	442.53	**CH4 Intensity (lb/MWhr)**	0.018	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SCE GHG Intensity Factors adjusted per SB 100 that requires 60% electricity from renewable sources by 2030

Land Use -

Construction Phase - Construction start 1-1-22 end 10-8-23

Energy Use -

Construction Off-road Equipment Mitigation - Water 2x per day selected to account for SCAQMD Rule 403 minimum requirements.

Mobile Land Use Mitigation - Improve Pedestrian Network Onsite and Connecting Offsite; Average 0.08 mile to Transit Station

Energy Mitigation - Exceed Title 24 by 30% and 30% lighting reduction

Water Mitigation - Install Low-Flow fixtures and Use Water-Efficient Irrigation

Waste Mitigation - 50% Reduction in waste per AB341 waste reduction requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	80.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.018
tblProjectCharacteristics	CO2IntensityFactor	702.44	442.53
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3839	3.5877	3.3414	9.3000e-003	0.5704	0.1296	0.7000	0.1981	0.1211	0.3192	0.0000	847.2567	847.2567	0.1217	0.0000	850.3003
2023	3.0681	1.2649	1.5263	4.3300e-003	0.1956	0.0444	0.2400	0.0527	0.0418	0.0945	0.0000	395.3909	395.3909	0.0464	0.0000	396.5515
Maximum	**3.0681**	**3.5877**	**3.3414**	**9.3000e-003**	**0.5704**	**0.1296**	**0.7000**	**0.1981**	**0.1211**	**0.3192**	**0.0000**	**847.2567**	**847.2567**	**0.1217**	**0.0000**	**850.3003**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3839	3.5877	3.3414	9.3000e-003	0.4491	0.1296	0.5787	0.1411	0.1211	0.2622	0.0000	847.2562	847.2562	0.1217	0.0000	850.2998
2023	3.0681	1.2649	1.5263	4.3300e-003	0.1956	0.0444	0.2400	0.0527	0.0418	0.0945	0.0000	395.3907	395.3907	0.0464	0.0000	396.5513
Maximum	**3.0681**	**3.5877**	**3.3414**	**9.3000e-003**	**0.4491**	**0.1296**	**0.5787**	**0.1411**	**0.1211**	**0.2622**	**0.0000**	**847.2562**	**847.2562**	**0.1217**	**0.0000**	**850.2998**

	ROG	**NOx**	**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**	**15.83**	**0.00**	**12.90**	**22.72**	**0.00**	**13.77**	**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	1-1-2022	3-31-2022	1.1664	1.1664
2	4-1-2022	6-30-2022	0.9245	0.9245
3	7-1-2022	9-30-2022	0.9346	0.9346
4	10-1-2022	12-31-2022	0.9396	0.9396
5	1-1-2023	3-31-2023	0.7947	0.7947
6	4-1-2023	6-30-2023	0.9168	0.9168
7	7-1-2023	9-30-2023	2.4493	2.4493
		Highest	2.4493	2.4493

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.5610	6.0000e-005	7.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0138	0.0138	4.0000e-005	0.0000	0.0147
Energy	0.0805	0.7318	0.6147	4.3900e-003		0.0556	0.0556		0.0556	0.0556	0.0000	2,063.5289	2,063.5289	0.0668	0.0261	2,072.9637
Mobile	1.0130	5.5740	11.9787	0.0623	7.6119	0.0265	7.6384	2.0390	0.0246	2.0636	0.0000	5,822.9696	5,822.9696	0.2192	0.0000	5,828.4504
Waste						0.0000	0.0000		0.0000	0.0000	90.5928	0.0000	90.5928	5.3539	0.0000	224.4399
Water						0.0000	0.0000		0.0000	0.0000	8.9278	103.9244	112.8522	0.9212	0.0226	142.6141
Total	**3.6544**	**6.3058**	**12.6005**	**0.0667**	**7.6119**	**0.0822**	**7.6940**	**2.0390**	**0.0803**	**2.1193**	**99.5206**	**7,990.4367**	**8,089.9573**	**6.5611**	**0.0487**	**8,268.4828**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.5610	6.0000e-005	7.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0138	0.0138	4.0000e-005	0.0000	0.0147
Energy	0.0601	0.5466	0.4591	3.2800e-003		0.0415	0.0415		0.0415	0.0415	0.0000	1,604.5147	1,604.5147	0.0525	0.0200	1,611.7963
Mobile	0.9646	5.3857	10.8848	0.0555	6.7137	0.0239	6.7375	1.7984	0.0222	1.8206	0.0000	5,187.6744	5,187.6744	0.1978	0.0000	5,192.6204
Waste						0.0000	0.0000		0.0000	0.0000	45.2964	0.0000	45.2964	2.6769	0.0000	112.2200
Water						0.0000	0.0000		0.0000	0.0000	7.1422	87.3614	94.5037	0.7371	0.0181	118.3289
Total	**3.5857**	**5.9323**	**11.3509**	**0.0588**	**6.7137**	**0.0654**	**6.7791**	**1.7984**	**0.0638**	**1.8621**	**52.4386**	**6,879.5644**	**6,932.0030**	**3.6644**	**0.0381**	**7,034.9803**

	ROG	NOx	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	**1.88**	**5.92**	**9.92**	**11.88**	**11.80**	**20.34**	**11.89**	**11.80**	**20.59**	**12.13**	**47.31**	**13.90**	**14.31**	**44.15**	**21.60**	**14.92**

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	1/1/2022	1/28/2022	5	20	
2	Site Preparation	Site Preparation	1/29/2022	2/11/2022	5	10	
3	Grading	Grading	2/12/2022	3/25/2022	5	30	
4	Building Construction	Building Construction	3/26/2022	5/19/2023	5	300	
5	Paving	Paving	5/20/2023	6/16/2023	5	20	
6	Architectural Coating	Architectural Coating	6/17/2023	10/8/2023	5	80	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0.52

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 941,310; Non-Residential Outdoor: 313,770; Striped Parking Area: 1,392 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

HTCMP Master Plan Repeal - Orange County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	252.00	107.00	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
Architectural Coating	1	50.00	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 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0116**	**0.0116**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.3000e-004	4.0200e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3249	1.3249	3.0000e-005	0.0000	1.3255
Total	**5.2000e-004**	**3.3000e-004**	**4.0200e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3249**	**1.3249**	**3.0000e-005**	**0.0000**	**1.3255**

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	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0116**	**0.0116**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.3000e-004	4.0200e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3249	1.3249	3.0000e-005	0.0000	1.3255
Total	**5.2000e-004**	**3.3000e-004**	**4.0200e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3249**	**1.3249**	**3.0000e-005**	**0.0000**	**1.3255**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0903**	**8.0600e-003**	**0.0984**	**0.0497**	**7.4200e-003**	**0.0571**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.0000e-004	2.4100e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7949	0.7949	2.0000e-005	0.0000	0.7953
Total	**3.1000e-004**	**2.0000e-004**	**2.4100e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.7949**	**0.7949**	**2.0000e-005**	**0.0000**	**0.7953**

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					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0407**	**8.0600e-003**	**0.0487**	**0.0223**	**7.4200e-003**	**0.0298**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.0000e-004	2.4100e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7949	0.7949	2.0000e-005	0.0000	0.7953
Total	**3.1000e-004**	**2.0000e-004**	**2.4100e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.7949**	**0.7949**	**2.0000e-005**	**0.0000**	**0.7953**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8019	81.8019	0.0265	0.0000	82.4633
Total	**0.0544**	**0.5827**	**0.4356**	**9.3000e-004**	**0.1301**	**0.0245**	**0.1546**	**0.0540**	**0.0226**	**0.0765**	**0.0000**	**81.8019**	**81.8019**	**0.0265**	**0.0000**	**82.4633**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	6.7000e-004	8.0300e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.6497	2.6497	5.0000e-005	0.0000	2.6510
Total	**1.0400e-003**	**6.7000e-004**	**8.0300e-003**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.6497**	**2.6497**	**5.0000e-005**	**0.0000**	**2.6510**

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					0.0586	0.0000	0.0586	0.0243	0.0000	0.0243	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8018	81.8018	0.0265	0.0000	82.4632
Total	**0.0544**	**0.5827**	**0.4356**	**9.3000e-004**	**0.0586**	**0.0245**	**0.0831**	**0.0243**	**0.0226**	**0.0468**	**0.0000**	**81.8018**	**81.8018**	**0.0265**	**0.0000**	**82.4632**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	6.7000e-004	8.0300e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.6497	2.6497	5.0000e-005	0.0000	2.6510
Total	**1.0400e-003**	**6.7000e-004**	**8.0300e-003**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.6497**	**2.6497**	**5.0000e-005**	**0.0000**	**2.6510**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1706	1.5616	1.6363	2.6900e-003		0.0809	0.0809		0.0761	0.0761	0.0000	231.7252	231.7252	0.0555	0.0000	233.1131
Total	**0.1706**	**1.5616**	**1.6363**	**2.6900e-003**		**0.0809**	**0.0809**		**0.0761**	**0.0761**	**0.0000**	**231.7252**	**231.7252**	**0.0555**	**0.0000**	**233.1131**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0274	0.9634	0.2757	2.5800e-003	0.0674	1.8400e-003	0.0692	0.0194	1.7600e-003	0.0212	0.0000	255.6753	255.6753	0.0202	0.0000	256.1811
Worker	0.0874	0.0562	0.6749	2.4600e-003	0.2766	1.7900e-003	0.2784	0.0735	1.6500e-003	0.0751	0.0000	222.5748	222.5748	4.4900e-003	0.0000	222.6871
Total	**0.1148**	**1.0197**	**0.9506**	**5.0400e-003**	**0.3440**	**3.6300e-003**	**0.3476**	**0.0929**	**3.4100e-003**	**0.0963**	**0.0000**	**478.2501**	**478.2501**	**0.0247**	**0.0000**	**478.8682**

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	0.1706	1.5616	1.6363	2.6900e-003		0.0809	0.0809		0.0761	0.0761	0.0000	231.7250	231.7250	0.0555	0.0000	233.1128
Total	**0.1706**	**1.5616**	**1.6363**	**2.6900e-003**		**0.0809**	**0.0809**		**0.0761**	**0.0761**	**0.0000**	**231.7250**	**231.7250**	**0.0555**	**0.0000**	**233.1128**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0274	0.9634	0.2757	2.5800e-003	0.0674	1.8400e-003	0.0692	0.0194	1.7600e-003	0.0212	0.0000	255.6753	255.6753	0.0202	0.0000	256.1811
Worker	0.0874	0.0562	0.6749	2.4600e-003	0.2766	1.7900e-003	0.2784	0.0735	1.6500e-003	0.0751	0.0000	222.5748	222.5748	4.4900e-003	0.0000	222.6871
Total	**0.1148**	**1.0197**	**0.9506**	**5.0400e-003**	**0.3440**	**3.6300e-003**	**0.3476**	**0.0929**	**3.4100e-003**	**0.0963**	**0.0000**	**478.2501**	**478.2501**	**0.0247**	**0.0000**	**478.8682**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0786	0.7192	0.8122	1.3500e-003		0.0350	0.0350		0.0329	0.0329	0.0000	115.9024	115.9024	0.0276	0.0000	116.5917
Total	**0.0786**	**0.7192**	**0.8122**	**1.3500e-003**		**0.0350**	**0.0350**		**0.0329**	**0.0329**	**0.0000**	**115.9024**	**115.9024**	**0.0276**	**0.0000**	**116.5917**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0104	0.3617	0.1278	1.2500e-003	0.0337	4.4000e-004	0.0341	9.7100e-003	4.2000e-004	0.0101	0.0000	123.9755	123.9755	9.3800e-003	0.0000	124.2101
Worker	0.0414	0.0255	0.3143	1.1800e-003	0.1383	8.8000e-004	0.1392	0.0367	8.1000e-004	0.0375	0.0000	107.0130	107.0130	2.0400e-003	0.0000	107.0638
Total	**0.0519**	**0.3873**	**0.4421**	**2.4300e-003**	**0.1720**	**1.3200e-003**	**0.1733**	**0.0464**	**1.2300e-003**	**0.0477**	**0.0000**	**230.9885**	**230.9885**	**0.0114**	**0.0000**	**231.2739**

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	0.0786	0.7192	0.8122	1.3500e-003		0.0350	0.0350		0.0329	0.0329	0.0000	115.9022	115.9022	0.0276	0.0000	116.5915
Total	**0.0786**	**0.7192**	**0.8122**	**1.3500e-003**		**0.0350**	**0.0350**		**0.0329**	**0.0329**	**0.0000**	**115.9022**	**115.9022**	**0.0276**	**0.0000**	**116.5915**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0104	0.3617	0.1278	1.2500e-003	0.0337	4.4000e-004	0.0341	9.7100e-003	4.2000e-004	0.0101	0.0000	123.9755	123.9755	9.3800e-003	0.0000	124.2101
Worker	0.0414	0.0255	0.3143	1.1800e-003	0.1383	8.8000e-004	0.1392	0.0367	8.1000e-004	0.0375	0.0000	107.0130	107.0130	2.0400e-003	0.0000	107.0638
Total	**0.0519**	**0.3873**	**0.4421**	**2.4300e-003**	**0.1720**	**1.3200e-003**	**0.1733**	**0.0464**	**1.2300e-003**	**0.0477**	**0.0000**	**230.9885**	**230.9885**	**0.0114**	**0.0000**	**231.2739**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	6.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0269**	**20.0269**	**6.4800e-003**	**0.0000**	**20.1888**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.0000e-004	3.7400e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2740	1.2740	2.0000e-005	0.0000	1.2746
Total	**4.9000e-004**	**3.0000e-004**	**3.7400e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.2740**	**1.2740**	**2.0000e-005**	**0.0000**	**1.2746**

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	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	6.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0268**	**20.0268**	**6.4800e-003**	**0.0000**	**20.1888**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.0000e-004	3.7400e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2740	1.2740	2.0000e-005	0.0000	1.2746
Total	**4.9000e-004**	**3.0000e-004**	**3.7400e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.2740**	**1.2740**	**2.0000e-005**	**0.0000**	**1.2746**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.9119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6700e-003	0.0521	0.0724	1.2000e-004		2.8300e-003	2.8300e-003		2.8300e-003	2.8300e-003	0.0000	10.2130	10.2130	6.1000e-004	0.0000	10.2283
Total	**2.9195**	**0.0521**	**0.0724**	**1.2000e-004**		**2.8300e-003**	**2.8300e-003**		**2.8300e-003**	**2.8300e-003**	**0.0000**	**10.2130**	**10.2130**	**6.1000e-004**	**0.0000**	**10.2283**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5700e-003	4.0500e-003	0.0499	1.9000e-004	0.0220	1.4000e-004	0.0221	5.8300e-003	1.3000e-004	5.9600e-003	0.0000	16.9862	16.9862	3.2000e-004	0.0000	16.9943
Total	**6.5700e-003**	**4.0500e-003**	**0.0499**	**1.9000e-004**	**0.0220**	**1.4000e-004**	**0.0221**	**5.8300e-003**	**1.3000e-004**	**5.9600e-003**	**0.0000**	**16.9862**	**16.9862**	**3.2000e-004**	**0.0000**	**16.9943**

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	2.9119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6700e-003	0.0521	0.0724	1.2000e-004		2.8300e-003	2.8300e-003		2.8300e-003	2.8300e-003	0.0000	10.2130	10.2130	6.1000e-004	0.0000	10.2283
Total	**2.9195**	**0.0521**	**0.0724**	**1.2000e-004**		**2.8300e-003**	**2.8300e-003**		**2.8300e-003**	**2.8300e-003**	**0.0000**	**10.2130**	**10.2130**	**6.1000e-004**	**0.0000**	**10.2283**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5700e-003	4.0500e-003	0.0499	1.9000e-004	0.0220	1.4000e-004	0.0221	5.8300e-003	1.3000e-004	5.9600e-003	0.0000	16.9862	16.9862	3.2000e-004	0.0000	16.9943
Total	**6.5700e-003**	**4.0500e-003**	**0.0499**	**1.9000e-004**	**0.0220**	**1.4000e-004**	**0.0221**	**5.8300e-003**	**1.3000e-004**	**5.9600e-003**	**0.0000**	**16.9862**	**16.9862**	**3.2000e-004**	**0.0000**	**16.9943**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

Improve Pedestrian 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	0.9646	5.3857	10.8848	0.0555	6.7137	0.0239	6.7375	1.7984	0.0222	1.8206	0.0000	5,187.6744	5,187.6744	0.1978	0.0000	5,192.6204
Unmitigated	1.0130	5.5740	11.9787	0.0623	7.6119	0.0265	7.6384	2.0390	0.0246	2.0636	0.0000	5,822.9696	5,822.9696	0.2192	0.0000	5,828.4504

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	342.26	76.33	32.58	837,681	738,835
Government (Civic Center)	417.68	0.00	0.00	921,329	812,612
Hotel	2,328.45	2,334.15	1695.75	5,342,347	4,711,950
Parking Lot	0.00	0.00	0.00		
Strip Mall	7,433.79	7,051.37	3426.72	12,950,439	11,422,287
Total	10,522.19	9,461.85	5,155.06	20,051,796	17,685,684

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
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Government (Civic Center)	16.60	8.40	6.90	75.00	20.00	5.00	50	34	16
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Government (Civic Center)	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Hotel	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Parking Lot	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741
Strip Mall	0.568908	0.042250	0.208291	0.102433	0.012079	0.005826	0.028362	0.022028	0.001968	0.001428	0.005032	0.000655	0.000741

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

HTCMP Master Plan Repeal - Orange County, Annual

	ROG	NOx	CO	SO2	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	1,009.4989	1,009.4989	0.0411	9.1200e-003	1,013.2446
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,266.8529	1,266.8529	0.0515	0.0115	1,271.5535
NaturalGas Mitigated	0.0601	0.5466	0.4591	3.2800e-003		0.0415	0.0415		0.0415	0.0415	0.0000	595.0158	595.0158	0.0114	0.0109	598.5517
NaturalGas Unmitigated	0.0805	0.7318	0.6147	4.3900e-003		0.0556	0.0556		0.0556	0.0556	0.0000	796.6760	796.6760	0.0153	0.0146	801.4102

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					
General Office Building	283614	1.5300e-003	0.0139	0.0117	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	15.1347	15.1347	2.9000e-004	2.8000e-004	15.2247
Government (Civic Center)	136734	7.4000e-004	6.7000e-003	5.6300e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.2967	7.2967	1.4000e-004	1.3000e-004	7.3400
Hotel	1.41733e+007	0.0764	0.6948	0.5836	4.1700e-003		0.0528	0.0528		0.0528	0.0528	0.0000	756.3431	756.3431	0.0145	0.0139	760.8377
Parking Lot	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
Strip Mall	335460	1.8100e-003	0.0164	0.0138	1.0000e-004		1.2500e-003	1.2500e-003		1.2500e-003	1.2500e-003	0.0000	17.9014	17.9014	3.4000e-004	3.3000e-004	18.0078
Total		**0.0805**	**0.7318**	**0.6147**	**4.3900e-003**		**0.0556**	**0.0556**		**0.0556**	**0.0556**	**0.0000**	**796.6760**	**796.6760**	**0.0153**	**0.0146**	**801.4102**

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					
General Office Building	203650	1.1000e-003	9.9800e-003	8.3900e-003	6.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	10.8675	10.8675	2.1000e-004	2.0000e-004	10.9321
Government (Civic Center)	98182.5	5.3000e-004	4.8100e-003	4.0400e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.2394	5.2394	1.0000e-004	1.0000e-004	5.2705
Hotel	1.05607e+007	0.0569	0.5177	0.4349	3.1100e-003		0.0393	0.0393		0.0393	0.0393	0.0000	563.5584	563.5584	0.0108	0.0103	566.9074
Parking Lot	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
Strip Mall	287657	1.5500e-003	0.0141	0.0118	8.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	15.3505	15.3505	2.9000e-004	2.8000e-004	15.4417
Total		**0.0601**	**0.5466**	**0.4591**	**3.2800e-003**		**0.0415**	**0.0415**		**0.0415**	**0.0415**	**0.0000**	**595.0158**	**595.0158**	**0.0114**	**0.0109**	**598.5517**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	434110	87.1381	3.5400e-003	7.9000e-004	87.4614
Government (Civic Center)	209290	42.0105	1.7100e-003	3.8000e-004	42.1664
Hotel	3.74093e+006	750.9108	0.0305	6.7900e-003	753.6971
Parking Lot	8120	1.6299	7.0000e-005	1.0000e-005	1.6360
Strip Mall	1.91883e+006	385.1636	0.0157	3.4800e-003	386.5927
Total		**1,266.8529**	**0.0515**	**0.0115**	**1,271.5535**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	349863	70.2274	2.8600e-003	6.3000e-004	70.4880
Government (Civic Center)	168674	33.8576	1.3800e-003	3.1000e-004	33.9833
Hotel	3.02089e+006	606.3771	0.0247	5.4800e-003	608.6271
Parking Lot	5684	1.1409	5.0000e-005	1.0000e-005	1.1452
Strip Mall	1.48408e+006	297.8958	0.0121	2.6900e-003	299.0011
Total		**1,009.4989**	**0.0411**	**9.1200e-003**	**1,013.2446**

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	2.5610	6.0000e-005	7.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0138	0.0138	4.0000e-005	0.0000	0.0147
Unmitigated	2.5610	6.0000e-005	7.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0138	0.0138	4.0000e-005	0.0000	0.0147

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2912					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.2691					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0138	0.0138	4.0000e-005	0.0000	0.0147
Total	**2.5610**	**6.0000e-005**	**7.0600e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0138**	**0.0138**	**4.0000e-005**	**0.0000**	**0.0147**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2912					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.2691					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0138	0.0138	4.0000e-005	0.0000	0.0147
Total	**2.5610**	**6.0000e-005**	**7.0600e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0138**	**0.0138**	**4.0000e-005**	**0.0000**	**0.0147**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	94.5037	0.7371	0.0181	118.3289
Unmitigated	112.8522	0.9212	0.0226	142.6141

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	5.51508 / 3.38021	23.7025	0.1806	4.4400e-003	29.5412
Government (Civic Center)	2.97195 / 1.82152	12.7727	0.0973	2.3900e-003	15.9191
Hotel	7.22953 / 0.803281	22.9807	0.2364	5.7500e-003	30.6044
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	12.4242 / 7.61482	53.3962	0.4069	0.0100	66.5494
Total		**112.8522**	**0.9212**	**0.0226**	**142.6141**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	4.41206 / 3.17402	20.0098	0.1445	3.5600e-003	24.6847
Government (Civic Center)	2.37756 / 1.7104	10.7828	0.0779	1.9200e-003	13.3020
Hotel	5.78362 / 0.754281	18.6336	0.1891	4.6000e-003	24.7334
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	9.93935 / 7.15032	45.0775	0.3256	8.0300e-003	55.6088
Total		**94.5037**	**0.7371**	**0.0181**	**118.3289**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	45.2964	2.6769	0.0000	112.2200
Unmitigated	90.5928	5.3539	0.0000	224.4399

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	28.86	5.8583	0.3462	0.0000	14.5137
Government (Civic Center)	85.27	17.3090	1.0229	0.0000	42.8824
Hotel	156.04	31.6747	1.8719	0.0000	78.4728
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	176.12	35.7508	2.1128	0.0000	88.5710
Total		**90.5928**	**5.3539**	**0.0000**	**224.4399**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	14.43	2.9292	0.1731	0.0000	7.2569
Government (Civic Center)	42.635	8.6545	0.5115	0.0000	21.4412
Hotel	78.02	15.8374	0.9360	0.0000	39.2364
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	88.06	17.8754	1.0564	0.0000	44.2855
Total		**45.2964**	**2.6769**	**0.0000**	**112.2200**

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