HELIX
Environmental Planning

University Innovation District Project

Air Quality and Greenhouse Gas Emissions Technical Report

February 2018

Prepared for:
Planning Department
City of Chula Vista
276 4th Avenue
Chula Vista, CA 91910

Prepared by:
HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

AIR QUALITY AND GREENHOUSE GAS EMISSIONS TECHNICAL REPORT

FOR THE

UNIVERSITY INNOVATION DISTRICT

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LIST OF ACRONYMS

$\mu g/m^3$	micrograms per cubic meter
AAQS	ambient air quality standard
AB	Assembly Bill
ADT	average daily trips
AMSL	above mean sea level
APCD	Air Pollutaion Control District
BMPs	best management practices
BRT	Bus Rapid Transit
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emission Estimator Model
CALGreen	California Green Building Standards Code
CAP	Climate Action Plan /
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBSC	California Building Standards Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFC	chlorofluorocarbons
CF_4	tetraflouromethane
CH_4	methane
City	City of Chula Vista
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2-equivalent
C_2F_6	hexafluoroethane
DPM	diesel particulate matter
EIR	Environmental Impact Report
EO	Executive Order
EPIC	Energy Policy Initiative Center
EUC	Eastern Urban Center/Millenia
F	Fahrenheit
FAR	Floor to Area ratio

LIST OF ACRONYMS (cont.)

GHG	greenhouse gas
GPA/GDPA	General Plan Amendment/General Development Plan Amendment
GWP	Global Warming Potential
HAP	hazardous air pollutant
HFCs	hydrofluorocarbons
hp	horse power
HRA	health risk assessment
HVAC	heating, ventilation, and air condition
H_2S	hydrogen sulfide
IEM	Iowa Environmental Mesonet
IPCC	Intergovernmental Panel on Climate Change
km	kilometer
LCFS	Low Carbon Fuel Standard
LLG	Linscott, Law and Greenspan Engineerss
LOS	Level of Service
MEI	maximally exposed individual
MM	Mitigation Measure
MMT	million metric tons
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organizations
MSCP	Multiple Species Conservation Program
MT	metric ton
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NHTSA	National Highway Traffic Safety Administration
NOAA	National Oceanic and Atmospheric Administration
N_2O	nitrous oxide
NO	nitrogen oxide
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
O_3	ozone
Pb	lead
PFCs	perfluorocarbons
PM	particulate matter

LIST OF ACRONYMS (cont.)

PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
ppm	parts per million
Project	University Innovation District Project
RAQS	Regional Air Quality Strategies
ROGs	reactive organic gases
RP	Regional Plan
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SEIR	Supplemental EIR
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SO_X	sulfur oxides
SP	service population
SPA	Sectional Planning Area Plan
SR	State Route
TACs	toxic air contaminants
T-BACT	Toxics-Best Available Control Technology
TIA	Traffic Impact Analysis
TDM	Transportation Demand Management
UID	University Innovation District
URF	unit risk factor
USEPA	United States Environmental Protection Agency
USD	University of San Diego
VMT	vehicle miles traveled
VOC	volatile organic compound
WRCC	Western Regional Climate Center

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality and greenhouse gas (GHG) emission impacts associated with the University Innovation District (UID) Project (Project). The evaluation addresses the potential for criteria air pollutant and GHG emission impacts during the construction and operation of the UID. An assessment was made to estimate the criteria pollutant and GHG emissions that would be emitted as a result of full development of the UID.

The Project would result in emissions of criteria air pollutants and GHGs during construction and operation. Construction emissions include fugitive dust, heavy construction equipment exhaust, and vehicle trips associated with workers commuting to and from the site and trucks hauling materials. In accordance with San Diego Air Pollution Control District (SDAPCD) Rule 55, fugitive dust control measures including the use of an on-site water truck to water down active grading areas and unpaved and paved roads at least twice daily are incorporated into the Project construction assumptions. Operational sources of emissions include area, energy, transportation, water use, and solid waste. Project emissions of criteria pollutants during construction would exceed the South Coast Air Quality Management District (SCAQMD) significance threshold for oxides of nitrogen (NO_X). MM AQ-1 requires the use of Tier 4 Final certified off-road equipment during the building construction phase. With inclusion of MM AQ-1, construction emissions would be reduced to a level that is less than significant. Operational emissions would exceed thresholds for volatile organic compounds (VOC), carbon monoxide (CO), NO_X, and particulate matter less than ten microns in diameter (PM_{10}). The primary source of operational emissions is vehicle trips. All applicable measures have already been incorporated into the UID Sectional Planning Area (SPA) Plan, such as provision of bike lanes, providing services near residences, and providing transit support facilities such as bus stops, as listed in the Project Description. There are no other feasible mitigation measures available at the project level to reduce vehicular emissions other than reducing vehicle trips. Additionally, there are no feasible mitigation measures currently available to reduce area source emissions without regulating the purchases of individual consumers. Operational emissions of VOCs, NO_X, CO, and PM_{10} would be significant and unavoidable.

The Project would be consistent with air quality policies set forth by the SDAPCD as presented in the most recent Regional Air Quality Strategies (RAQS). The Project would also result in less than significant impacts to odors.

With regard to long-term operations, it is not currently known if any of the academic or support uses proposed by the UID would include any new sources of toxic air contaminants (TACs), such as laboratory buildings. MM AQ-2 requires that subsequent projects containing such uses analyze specific operation-related TAC impacts to ensure that emissions will remain below SDAPCD thresholds. By ensuring all future individual projects which include new sources of TACs achieve emissions below SDAPCD thresholds, implementation of the UID would result in less than significant impacts related to TAC emissions.

With regard to GHGs, the analysis relies upon an efficiency threshold based on compliance with Senate Bill (SB) 32 of 1.30 metric tons (MT) of carbon dioxide equivalent (CO_2e) per service population (SP) per year. Using the California Emission Estimator Model (CalEEMod), the UID would result in emissions totaling 1.06 MT CO_2e/SP/year. As such, the Project would be consistent with SB 32. The Project would also be consistent with the City's Climate Action Plan

(CAP). The UID SPA Plan incorporates several features into the site design that promote alternative transportation use, reduce traffic congestion, encourage energy efficiency, and reduce area source pollutants. These features would reduce GHG emission ensuring impacts are less than significant.

1.0 INTRODUCTION

This air quality technical report is being prepared in support of the Environmental Impact Report (EIR) being prepared for the University Innovation District (UID) Project (Project). The EIR for UID tiers from the Supplemental EIR (SEIR 09-01) to the General Plan Update EIR (EIR 05-01; SCH #2004081066). The SEIR addresses the General Plan/General Development Plan Amendments (GPA/GDPA) that provides a clear definition of the proposed Sectional Planning Area (SPA).

1.1 PROJECT LOCATION

The proposed UID Project (Project) is located in the City of Chula Vista (City) in San Diego County. The proposed Project consists of approximately 383 acres of land in the southeastern area of the City. Chula Vista is located in San Diego County approximately seven miles south of the City of San Diego and approximately seven miles north of the U.S./Mexico international border. The project area consists of two geographically distinct and non-contiguous properties: the 353-acre Main Campus Property and the 30-acre Lake Property. Figure 1, *Regional Location*, and Figure 2, *Project Vicinity*, illustrates the Project's location and surrounding uses.

The Main Campus Property ranges in elevation from approximately 620 feet above mean sea level (AMSL) on the northwestern portion of the site near Hunte Parkway to approximately 340 feet AMSL at the southwestern end of the Project near the Otay River Valley. The Lake Property ranges from north to south from about 500 to 560 feet AMSL. The Otay Valley Regional Park and the Otay River Valley are south of the site; State Route (SR) 125 is about 0.5-mile west of the site; and the Eastern Urban Center/Millenia (henceforth referred to as EUC; currently under development) is located north of the site. Eastlake Parkway and Hunte Parkway, which currently terminate at the northwestern boundary of the project site, provide access to the northern part of the site.

1.2 PROJECT DESCRIPTION

The Project and associated off-site improvements are consistent with the Otay Ranch General Development Plan (GDP). The Project comprises a mixed-use community of academic/university, commercial, retail, residential, and recreational development within a series of transects and sectors. The transects consist of areas identified for urban development while the sectors include areas identified to include common areas, pedestrian walkways, and habitat conservation areas. The components described below apply to both the University and Innovation portions of the Project. The university-related uses are generally designated in the eastern half of the Main Campus Property while the western half would include mixed-use development (residential, commercial, and office) that would relate and transition to the adjacent mixed-use Villages 9, 10 and EUC areas. However, mixed-use development could potentially occur anywhere within the project area.

1.2.1 Development Concept

The intent of the UID SPA Plan is to implement the City's General Plan objectives for the University and Regional Technology Park area to stimulate academic and business investment and to bring intellectual capital and research activities to the City.

Figure 3, *Site Plan*, illustrates the site utilization plan for the project site. As shown, the UID involves six transects and three sectors over approximately 35 blocks to provide organization for development that focuses urban and campus development within the Main Campus Property and transitions into more limited development followed by open space and habitat conservation at the edges. The Lake Property features mostly habitat conservation areas with some low-intensity satellite academic uses that would have limited physical impact and building footprints. Implementation of the Project would include a mix of academic, residential (including student housing and market-rate housing), retail, office, hotel, recreation, and open space/conservation uses through the year 2045. Educational, commercial, and residential uses are not specifically prescribed and may be developed within any of the transects/sectors.

Development Standards in Chapter 3 of the SPA Plan, *Development Code*, regulate the placement of the buildings within the various transects and development areas identified. Specifically, development standards are included related to the maximum floor-area-ratio, maximum amount of development in gross square footage, minimum and maximum building heights, setbacks, and various placemaking guidelines that specify regulations for buildings and lots to regulate key characteristics of the built form (pedestrian and vehicle access, open space, parking, etc.). Below is a brief description of each of the proposed transects and development areas.

1.2.1.1 ***Transect T-6: District Gateway***

Transect T-6 would consist of mixed-use development and would serve as a gateway to the UID as visitors approach the project site via Eastlake Parkway, south of Hunte Parkway. Buildings within this transect would be required to be at least three stories or 42 feet in height and no taller than 92 feet, with the exception of the "signature tower," which would be between 200 to 250 feet in height with up to 500,000 square feet of developed space. Active ground floor uses would occur on Hunte Parkway along a 20-foot wide pedestrian walkway, referred to as the "District Walk." Streetscape improvements and signage would also be included to create formal entrances. As shown on Figure 3, the T-6: Gateway District would encompass five entire blocks, in addition to the proposed "signature tower," located south of the majority of the T-6 transect.

1.2.1.2 ***Transect T-5: Urban Core***

Transect T-5: Urban Core would comprise the center for innovation for the Project. The design of this area would emphasize dramatic shapes and forms constructed of materials that highlight emerging technology. A mix of laboratory spaces, civic services, and recreational plaza areas would promote pedestrian activities. Similar to the development standards for Transect T-6, this transect would include buildings between 42 – 92 feet in height. Most of this transect is located towards the center of the project site; however, there are portions between Eastlake Parkway and Orion Avenue, between transects T-4 and T-6.

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Regional Location

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N 0 8 Miles

Figure 1

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Project Vicinity

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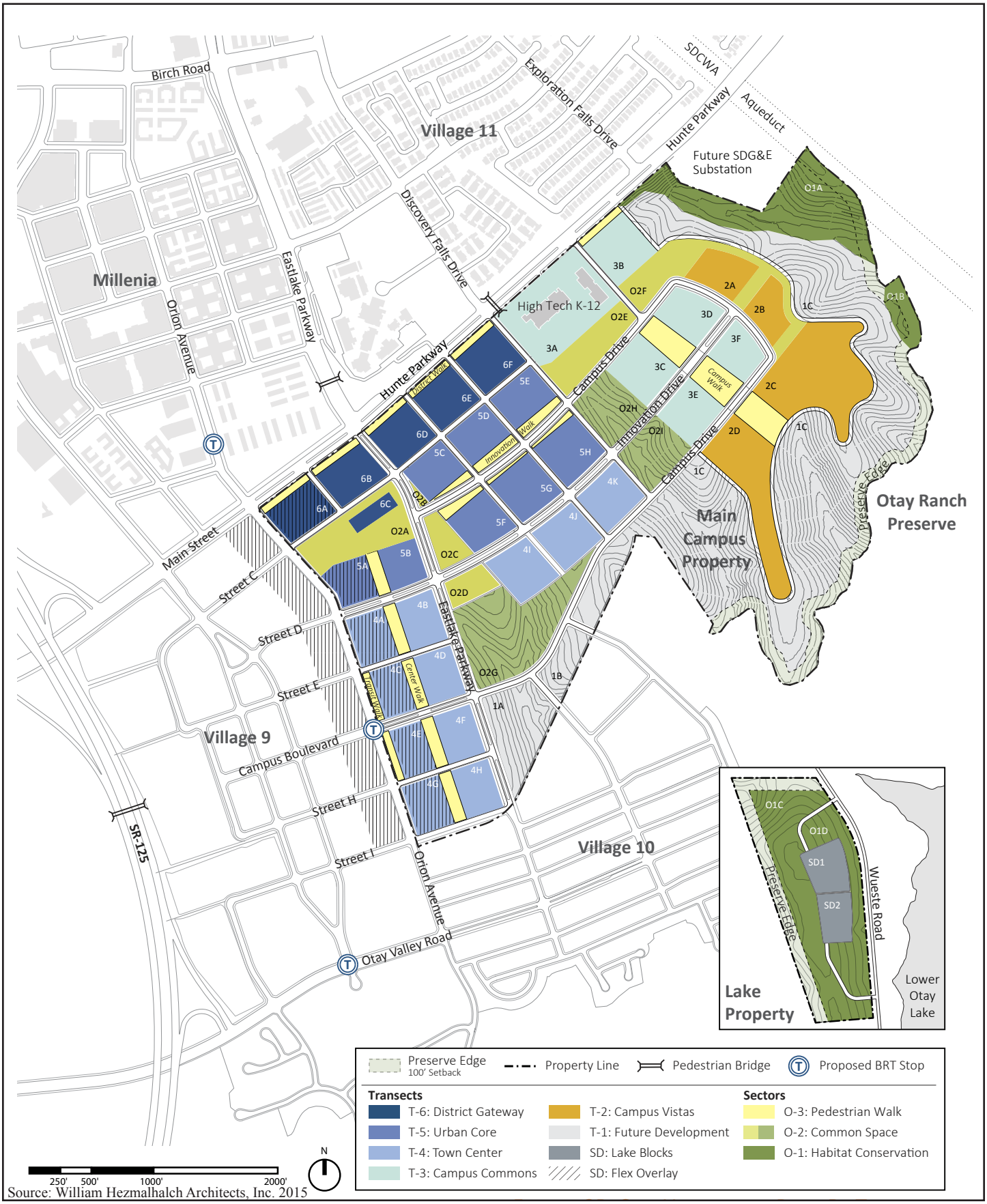
N

0 2,000 Feet

Figure 2



Source: William Hezmalhalch Architects, Inc. 2015

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Site Plan

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Figure 3

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1.2.1.3 *Transect 4: Town Center*

The Town Center transect is comprised of 11 blocks towards the southwestern portion of the project site and is intended to serve as a transition and interface with the main street feel of Village 9, located in between Orion Avenue and Eastlake Parkway. While most of this transect would be located adjacent to Village 9, a few blocks are designated east of Eastlake Parkway and would be located adjacent to common space and habitat conservation areas. Similar to transects T-6 and T-5, buildings would be between 42 – 92 feet in height and would have no setbacks between the building and the street. A Bus Rapid Transit (BRT) station is identified at the intersection of Campus Boulevard and Orion Avenue that would serve the project site and nearby off-site residential and commercial areas. Two pedestrian amenities are included in Transect T-4, including a pedestrian and open space corridor referred to as the "Center Walk" that spans over four blocks, in addition to a two-block "Transit Walk" centered on the proposed BRT stop.

1.2.1.4 *Transect T-3: Campus Commons*

The Campus Commons transect is located at the eastern part of the Main Campus Parcel and includes six primary blocks focused around the Campus Walk, which is another pedestrian and recreational area through the project site. High Tech Elementary, Middle and High School is on one of these blocks. One of the five remaining blocks would be located along Hunte Parkway, near the existing High Tech High School. Overall, development in this transect would be lower in density compared to the central transects to serve as a transition to the southern open space areas. The site begins to decrease in elevation gradually towards the south. Buildings heights would not exceed 50 feet and building form and location are proposed to take advantage of southern-facing views.

1.2.1.5 *Transect T-2: Campus Vista*

The Campus Vista transect would be located between the T-3: Campus Commons and the T-1: Future Development transects, in the eastern part of the Main Campus Property. The T-2 Campus Vista transect comprises four areas, including two areas south of Campus Drive and Transect T-3 that would include a pavilion feature, and two areas east of Transect T-3. A pedestrian-oriented "Campus Walk" would be located through this transect and would span both Campus Drive and Innovation Drive. The T-2: Campus Vista transect is designed to relate to naturalized open spaces and southern-facing views, which would be achieved by lower densities (maximum 0.5 Floor to Area ration [FAR]) and limiting buildings heights to 50 feet.

1.2.1.6 *Transect T-1: Future Development*

The T-1: Future Development transect is intended to allow limited development at the lowest intensities within the Main Campus Property and to serve as the final transition between the built and natural environment. The maximum amount of development in terms of FAR and building height would be similar to the T-2: Campus Vista transect; however, additional development restrictions would restrict the buildout of this area based on the amount of development in transects T-6 through T-2. Also, additional permit review would be required, including Design Review and City Council approval. This transect generally comprises the southern edge of the project boundary adjacent to the Otay Ranch Preserve. A Preserve Edge is included for slopes

within 100 feet of the Otay Ranch Preserve to provide a buffer zone between developed and undeveloped areas to protect the Preserve from human activity and non-native species and would include regional trails.

1.2.1.7 *Transect SD: Lake Blocks*

The SD: Lake Blocks transect includes the 30-acre Lake Property, located about 0.5-mile east of the Main Campus Property. Access to the site would be from Wueste Road and development within this area would be limited to satellite academic uses with low or infrequent use. Most of this area would be preserved as habitat conservation space and would include a preserve edge to serve as a buffer between the SD: Lake Property transect and the Otay Ranch Preserve. Maximum FAR would be 0.2 and building height would be limited to 50 feet.

1.2.1.8 *O-3: Pedestrian Walks Sector*

A series of pedestrian walks are included in the proposed Project design to provide a system of public spaces interconnected to squares, plazas, common spaces, natural areas, and recreation amenities. Each of the proposed pedestrian walks would include wide views to open landscape areas or views along key district corridors. There is a total of five proposed pedestrian walks, including the District Walk, Transit Walk, Center Walk, Innovation Walk, and Campus Walk. The District Walk, located between T-6: District Gateway and Hunte Parkway, would incorporate the City's bike and pedestrian linkages from adjacent areas onto the project site and would connect with the educational nature of the project site through the existing High Tech High School. The District Walk would be located along Hunte Parkway, between Discovery Falls Drive at High Tech K-12 and Orion Avenue at the northwestern Project boundary. Transit Walk would be located near the southwestern corner of the project site in the T-4: Town Center transect and would provide enhanced pedestrian access to the proposed BRT Station at Campus Boulevard and Orion Avenue. Center Walk, located just east of the Transit Walk, would extend through the T-4: Town Center transect between Eastlake Parkway and Orion Avenue and would terminate within an open space area near the proposed "signature tower" associated with the T-6: District Gateway transect. Innovation Walk is located within the T-5: Urban Core transect and alongside the northern alignment of Campus Drive between Eastlake Parkway and Discovery Falls Drive. Lastly, the Campus Walk would be located in the eastern portion of the Main Campus Property and would be located within the T-3: Campus Commons and T-2: Campus Vistas transects. The northern terminus of the Campus Walk would occur near High Tech High to the north and the T-1: Future Development transect to the south.

1.2.1.9 *O-2: Common Space Sector*

The O-2 Sector combines a variety of pedestrian, gathering, and recreation areas and includes architectural structures that accent areas with shade and gathering space. Each of the proposed four pavilion features would be individually designed and scaled to fit each unique location and the maximum allowed size of each feature would not exceed 5,000 square feet. Development in this sector may also include academic sports facilities to support academic anchor uses. It is intended that the limited built development in this sector would serve the public, such as concessions, demonstration kitchens, restrooms, or other civic-associated uses.

1.2.1.10 *O-1: Habitat Conservation Sector*

The O-1: Habitat Conservation sector is intended to protect existing natural systems and habitat and access and development in this area would be restricted. The O-1 sector areas occur at the Lake Property and the northwestern corner of the Main Campus Property. Development would be prohibited in these areas and restrictions regarding noise and lighting in adjacent and nearby areas would be implemented to reduce and avoid impacts on wildlife. The O-1 sector would be incorporated and dedicated as part of the Otay Valley Regional Park and land use and design would be regulated by the City's Multiple Species Conservation Program (MSCP) Subarea Plan, the Resource Management Plan, and the Greenbelt Master Plan. Off-site storm water and wastewater improvements would be permitted within the O-1 sector.

1.2.1.11 *Transect SD: Flex Overlay*

The SD: Flex Overlay transect is intended to support and include the UID and Village 9 and would serve as a transition area between the university focused UID and the mixed-use focused Village 9. Development would be permitted that is consistent with either the SPA Plan for the UID or for Village 9. The proposed SPA Plan recommends that development occur within the proposed Flex Overlay prior to developing within the T-1 Transect.

1.2.1.12 *Off-site Improvements*

Proposed off-site utility improvements include improvements south of the site for sewer and storm drain infrastructure and trail access. Off-site sewer improvements would be necessary for the southeastern portion of the Main Campus Property and the Lake Property. For the Main Campus Property, off-site sewer and drainage would be conveyed within pipelines that would follow an existing trail easement. For the Lake Property, off-site improvements would be necessary for the proposed sewer system and would be located within existing access roads. Also, the proposed Project would implement an existing 8-foot wide dirt road within the Preserve as a link between the trails within the UID and the Greenbelt Trail, which would implement the MSCP Subarea Plan.

1.3 CONSTRUCTION EMISSIONS CONTROL BEST MANAGEMENT PRACTICES

The Project would incorporate best management practices (BMPs) during construction to reduce emissions of fugitive dust. San Diego Air Pollution Control District (SDAPCD) Rule 55 – Fugitive Dust Control states that no dust and/or dirt shall leave the property line. SDAPCD Rule 55 requires the following:

(1) **Airborne Dust Beyond the Property Line:** No person shall engage in construction or demolition activity subject to this rule in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.

(2) **Track-Out/Carry-Out:** Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall:

(i) be minimized by the use of any of the following or equally effective trackout/carry-out and erosion control measures that apply to the Project or operation:

(a) track-out grates or gravel beds at each egress point,

(b) wheel-washing at each egress during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and for outbound transport trucks;

(c) using secured tarps or cargo covering, watering, or treating of transported material; and

(ii) be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. If a street sweeper is used to remove any track-out/carry-out, only PM_{10}-efficient (particulate matter less than 10 microns) street sweepers certified to meet the most current SCAQMD Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

The control measures listed below are the BMPs that the Project would incorporate to construction period emissions:

- A minimum of two applications of water during grading between dozer/scraper passes.
- Paving, chip sealing, or chemical stabilization of internal roadways after completion of grading.
- Termination of grading if winds exceed 25 miles per hour (mph).
- Ensure that all exposed surfaces maintain a minimum soil moisture of 12 percent.
- Stabilization of dirt storage piles by chemical binders, tarps, fencing, or other erosion control.
- Use of "Super Compliant" architectural coatings with a VOC content of 10 grams per liter or less.

1.4 REGULATORY REQUIREMENTS THAT REDUCE EMISSIONS

1.4.1 Energy Efficiencies

- New development under the Project would be designed to meet current 2013 Title 24 energy efficiency standards. In accordance with the requirements of Title 24, new development under the UID would:
  - Install ceiling, attic, and wall insulation,
  - Install window glazing,

- Have the installation of all heating, ventilation, and air condition (HVAC) units verified by a third party, and
- Include roof anchors and pre-wiring to allow for the installation of photovoltaic systems.

1.4.2 Water Conservation

- In accordance with 2013 California Green Building Standards Code (CALGreen) mandatory measures new development under the Project would:
  - Reduce potable water use by 20 percent compared to statewide averages,
  - Install low-flow water fixtures,
  - Reduce wastewater generation by 20 percent compared to statewide averages,
  - Install low-flow bathroom fixtures, and
  - Install weather-based smart irrigation control systems.

1.4.3 Solid Waste Reduction

- In accordance with Assembly Bill (AB) 341, at least 75 percent of operational waste would be diverted from landfills through reuse and recycling.

1.5 SUSTAINABILITY AND PROJECT DESIGN FEATURES THAT REDUCE EMISSIONS

The UID SPA Plan incorporates several additional features into the site design that promote alternative transportation use, reduce traffic congestion, encourage energy efficiency, and reduce area source pollutants. These measures are listed in Appendix B of the UID SPA Plan, Air Quality Improvement Plan.

1.5.1 Vehicle Miles Traveled Reduction Features

The UID would be built in such a way as to include several features that work to minimize vehicle miles traveled (VMT). These include the following measures as described in the California Air Pollution Control Officers Association (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures*:

- ***LUT-1 Increase Density*** – The UID results in increased employment density (14,000 jobs on a 383 acre site results in 36.55 jobs per acre). Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. The percent increase in employment is based on a 20-jobs per acre baseline.
- ***LUT-3 Increase Diversity*** – The UID includes multiple land use types. Having different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-auto modes of transport.

- ***LUT-5 Increase Transit Accessibility*** – Locating a project with high density near transit will facilitate the use of transit by people traveling to or from the project. The use of transit results in a mode shift and therefore reduced VMT.
- ***LUT-9 Improve Walkability Design***– The Project will include improved design elements to enhance walkability and connectivity.
- ***SDT-1 Improve Pedestrian Network*** – Providing a pedestrian access network to link areas of a project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT.

1.5.2 Energy Efficiencies

The Project would be constructed as a zero net energy facility, incorporating sustainable design and energy reduction measures (such as photovoltaic panels) to completely offset the UID's annual energy use.

1.5.3 Water Conservation

The Project would utilize reclaimed water for outdoor landscaped areas.

1.5.4 Area Source Reductions

The Project would not install any new wood burning fireplaces.

2.0 REGULATORY SETTING AND EXISTING CONDITIONS

2.1 REGULATORY FRAMEWORK

2.1.1 Criteria Pollutants

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. In general, air pollutants include the following compounds:

- Ozone (O_3)
- Reactive organic gases (ROGs) or volatile organic compounds (VOCs)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Respirable particulate matter and fine particulate matter (PM_{10} and $PM_{2.5}$)
- Sulfur dioxide (SO_2)
- Lead (Pb)

The following specific descriptions of health effects for each of the air pollutants potentially associated with Project construction and operations are based on information provided by the

U.S. Environmental Protection Agency (USEPA 2007) and the California Air Resources Board (CARB 2009).

Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when VOCs and nitrogen oxides (NO_X), both by-products of fuel combustion, react in the presence of ultraviolet light. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Reactive Organic Gases. ROGs (also known as VOCs) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as ozone.

Carbon Monoxide. CO is a product of fuel combustion. CO is an odorless, colorless gas. It affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease and can also affect mental alertness and vision.

Nitrogen Dioxide. NO_2 is also a by-product of fuel combustion and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM_{10}, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or $PM_{2.5}$, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in these size ranges have been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations, and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs. Diesel particulate matter (DPM) is classified a carcinogen by CARB.

Sulfur dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead in the atmosphere occurs as particulate matter. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Lead has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen.

Because emissions of lead are found only in projects that are permitted by SDAPCD, lead is not an air quality of concern for the proposed Project.

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several criteria pollutants, which are introduced above. Table 1, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant. On April 30, 2012, the San Diego Air Basin (SDAB) was classified as a marginal nonattainment area for the 8-hour NAAQS for ozone. The SDAB is an attainment area under the NAAQS for all other criteria pollutants. The SDAB currently falls under a national "maintenance plan" for CO, following a 1998 re-designation as a CO attainment area (SDAPCD 2010). The SDAB is currently classified as a nonattainment area under the CAAQS for ozone (serious nonattainment), PM_{10}, and $PM_{2.5}$.

Table 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[a]	Secondary[b]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM10	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
PM2.5	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
SO_2	24 Hour	0.04 ppm (105 µg/m^3)	–	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

Source: CARB 2015b.
O_3: ozone; ppm: parts per million; µg/m^3: micrograms per cubic meter; PM10: large particulate matter;
AAM: Annual Arithmetic Mean; PM2.5: fine particulate matter; CO: carbon monoxide; mg/m^3: milligrams per cubic meter;
NO_2: nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer; –: No Standard.
[a] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.
[b] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
Note: More detailed information in the data presented in this table can be found at the CARB website (www.arb.ca.gov).

The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for the County. The SDAPCD and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The County's Regional Air Quality Strategies (RAQS) was initially adopted in 1991 and is updated on a triennial basis. The most recent version of the RAQS was adopted by the SDAPCD in 2009. The local RAQS, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to CARB, which develops the California State Implementation Plan (SIP). The SIP relies on the same information from SANDAG to develop emission

inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The current federal and state attainment status for San Diego County is presented in Table 2, *Federal and State Air Quality Designation for the San Diego Air Basin*.

Table 2
FEDERAL AND STATE AIR QUALITY DESIGNATION
FOR THE SAN DIEGO AIR BASIN

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)	Nonattainment
O_3 (8-hour)	Marginal Nonattainment	Nonattainment
CO	Maintenance	Attainment
PM_{10}	Unclassifiable	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassifiable
Visibility	(No federal standard)	Unclassifiable

Source: CARB 2016a

2.1.2 Toxic Air Contaminants

Toxic Air Contaminants (TACs) are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. Air toxics are generated by a number of sources, including stationary ones such as dry cleaners, gas stations, combustion sources, and laboratories; mobile ones such as automobiles; and area sources such as farms, landfills, construction sites, and residential areas. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic. Public exposure to TACs is a significant environmental health issue in California.

California's air toxics control program began in 1983 with the passage of the Toxic Air Contaminant Identification and Control Act, better known as AB 1807 or the Tanner Bill. When a compound becomes listed as a TAC under the Tanner process, the CARB normally establishes minimum statewide emission control measures to be adopted by local air pollution control districts (APCDs). Later legislative amendments (AB 2728) required the CARB to incorporate all 189 federal hazardous air pollutants (HAPs) into the state list of TACs.

Supplementing the Tanner process, AB 2588 – the Air Toxics "Hot Spots" Information and Assessment Act of 1987 – currently regulates over 600 air compounds, including all of the Tanner-designated TACs. Under AB 2588, specified facilities must quantify emissions of regulated air toxics and report them to the local APCD. If the APCD determines that a potentially significant public health risk is posed by a given facility, the facility is required to perform a health risk assessment (HRA) and notify the public in the affected area if the calculated risks exceed specified criteria.

On August 27, 1998, CARB formally identified PM emitted in both gaseous and particulate forms by diesel-fueled engines as a TAC. The particles emitted by diesel engines are coated with chemicals, many of which have been identified by the USEPA as HAPs and by CARB as TACs. CARB's Scientific Advisory Committee has recommended a unit risk factor (URF) of 300 in 1 million over a 70-year exposure period for diesel particulate. In September 2000, the CARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel Risk Reduction Plan; CARB 2000). The Diesel Risk Reduction Plan outlined a comprehensive and ambitious program that included the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). These requirements are now in force on a state-wide basis.

2.1.3 Greenhouse Gases

2.1.3.1 ***Climate Change Overview***

Global climate change refers to changes in average climatic conditions on Earth, as a whole, including temperature, wind patterns, precipitation, and storms. Historical records show that global temperature changes have occurred naturally, such as during previous ice ages. To measure climate change, scientists look at long-term trends. The temperature trend, including data through 2010, shows the climate has warmed by approximately 0.36°Fahrenheit (F) per decade since the late 1970s (National Aeronautics and Space Administration [NASA] 2011).

Global temperatures are moderated by naturally occurring atmospheric gases. These gases are commonly referred to as Greenhouse Gases (GHGs) because they function like a greenhouse by letting light in but preventing heat from escaping, thus warming the Earth's atmosphere. The resulting balance between incoming solar radiation and outgoing radiation from both the Earth's surface and the atmosphere maintains the planet's habitability. The Earth's surface temperature averages about 58°F because of the greenhouse effect. Without it, the Earth's average surface temperature would be somewhere around an uninhabitable 0°F.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a "high confidence" that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO_2e) by the year 2100 (IPCC 2014).

2.1.3.2 *Types of Greenhouse Gases*

The GHGs, as defined under California's AB 32, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Although water vapor is the most abundant and variable GHG in the atmosphere, it is not considered a pollutant; it maintains a climate necessary for life.

CO_2 is the most important and common anthropogenic GHG. CO_2 is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO_2 concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (about 280 ppm in 1750). As of February 2016, the CO_2 concentration exceeded 403 ppm (National Oceanic and Atmospheric Administration [NOAA] 2016).

CH_4 is the main component of natural gas used in homes. A natural source of methane is from the decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

N_2O is produced by both natural and human-related sources. N_2O is emitted during agricultural and industrial activities, as well as during the combustion of fossil fuels and solid waste. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface). Chlorofluorocarbons were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the 1989 Montreal Protocol.

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHGs to disperse around the globe. Because GHGs vary widely in the power of their climatic effects, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, because methane and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). CO_2e is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP.

The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 3, *Global Warming Potentials and Atmospheric Lifetimes*.

Table 3
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-134a	14	1,430
PFC: Tetraflouromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC 2007
HFC: hydrofluorocarbon; PFC: perfluorocarbon

2.1.3.3 *Federal Greenhouse Gas Regulations*

Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* that CO_2 is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC, and SF_6) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards were established on April 1, 2010 for 2012 through 2016 model year vehicles and on October 15, 2012 for 2017 through 2025 model year vehicles (USEPA 2011; USEPA and NHTSA 2012).

Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the NHTSA have been working together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. The USEPA is finalizing the first-ever national GHG emissions standards under the CAA, and the NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. The rules require these vehicles to meet an estimated combined average emissions level of 250 grams per mile by 2016, decreasing to an average industry fleet-wide level of 163 grams per mile in model year 2025. The 2016 standard is

equivalent to 35.5 miles per gallon (mpg), and the 2025 standard is equivalent to 54.5 mpg if the levels were achieved solely through improvements in fuel efficiency. The agencies expect, however, that a portion of these improvements will be made through improvements in air conditioning leakage and the use of alternative refrigerants that would not contribute to fuel economy. These standards would cut GHG emissions by an estimated 2 billion metric tons (MT) and 4 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2017–2025). The combined USEPA GHG standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards (USEPA 2011; USEPA and NHTSA 2012).

2.1.3.4 *California Greenhouse Gas Regulations*

There are numerous State plans, policies, regulations, and laws related to GHGs and global climate change. Following is a discussion of some of these plans, policies, and regulations that (1) establish overall State policies and GHG reduction targets; (2) require State or local actions that result in direct or indirect GHG emission reductions for the proposed Project; and (3) require California Environmental Quality Act (CEQA) analysis of GHG emissions.

California Code of Regulations, Title 24, Part 6

California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2013 and went into effect July 2014. This update increases energy efficiency requirements by 25 to 30 percent compared to the 2008 Title 24 standards. The next scheduled update in 2016 will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2016 Standards will go into effect on January 1, 2017 (California Energy Commission [CEC] 2015).

California Green Building Standards Code

The California Green Building Standards Code (24 California Code of Regulations [CCR], Part 11) is a code with mandatory requirements for new residential and nonresidential buildings (including buildings for retail, office, public schools, and hospitals) throughout California. The current version of the code went into effect on July 1, 2014 and includes energy efficiency updates resulting in energy usage reductions of 25 percent for residential buildings and 30 percent for nonresidential building (CEC 2012). The code is Part 11 of the California Building Standards Code in Title 24 of the California Code of Regulations and is also known as the CALGreen Building Standards Code (California Building Standards Code [CBSC] 2014a).

The next update of the CALGreen Building Code (2016) is scheduled to go into effect on January 1, 2017 (CBSC 2014b).

The development of the CALGreen Code is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

The CALGreen Code contains requirements for 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 the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. In an effort to avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that the CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Executive Order B-30-15

On April 29, 2015, EO B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG reduction targets with those of leading international governments, including the 28 nation European Union. California is on track to meet or exceed the target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

Senate Bill 32

As a follow up to AB 32 and in response to EO B-30-15, SB 32 was passed by the California legislature in August 2016 and signed by Governor Brown in September 2016 to codify the EO's California GHG reduction target of 40 percent below 1990 levels by 2030.

Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles (CARB 2013). In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2013).

Assembly Bill 341

In 2011, the State legislature enacted AB 341 (California Public Resource Code section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 also requires the provision of recycling service to commercial and residential facilities that generate four cubic yards or more of solid waste per week.

Executive Order S-01-07

This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs the CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

Senate Bill 375

Senate Bill (SB) 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing.

California Air Resources Board: Scoping Plan

On December 11, 2008, the CARB adopted the Scoping Plan (CARB 2008) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing vehicle miles traveled and vehicle GHGs through fuel and efficiency measures. These measures would be implemented statewide rather than on a project by project basis.

The CARB released the First Update to the Climate Change Scoping Plan in May 2014 to provide information on the development of measure-specific regulations and to adjust projections in consideration of the economic recession (CARB 2014a). To determine the amount of GHG emission reductions needed to achieve the goal of AB 32 (i.e., 1990 levels by 2020) CARB developed a forecast of the AB 32 Baseline 2020 emissions, which is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. CARB estimated the AB 32 Baseline 2020 to be 509 million metric tons (MMT) of CO_2e. The Scoping Plan's current estimate of the necessary GHG emission reductions is 78 MMT CO_2e (CARB 2014b). This represents an approximately 15.32 percent reduction. The CARB is forecasting that this would be achieved through the following reductions by sector: 25 MMT CO_2e for energy, 23 MMT CO_2e for transportation, 5 MMT CO_2e for high-GWP GHGs, and 2 MMT CO_2e for waste. The remaining 23 MMT CO_2e would be achieved through Cap-and-Trade Program reductions. This reduction is flexible—if CARB receives new information and changes the other sectors' reductions to be less than expected, the agency can increase the Cap-and-Trade reduction (and vice versa).

2.1.3.5 *Local*

San Diego Association of Government's Regional Plan

The Regional Plan (RP) (SANDAG 2015) is the long-range planning document developed to address the region's housing, economic, transportation, environmental, and overall quality-of-life needs. The RP establishes a planning framework and implementation actions that increase the region's sustainability and encourage "smart growth while preserving natural resources and limiting urban sprawl." The RP encourages the regions and the County to increase residential and employment concentrations in areas with the best existing and future transit connections, and to preserve important open spaces. The focus is on implementation of basic smart growth principles designed to strengthen the integration of land use and transportation. General urban form goals, policies, and objectives are summarized as follows:

- Mix compatible uses.
- Take advantage of compact building design.
- Create a range of housing opportunities and choices.
- Create walkable neighborhoods.

- Foster distinctive, attractive communities with a strong sense of place.
- Preserve open space, natural beauty, and critical environmental areas.
- Strengthen and direct development towards existing communities.
- Provide a variety of transportation choices.
- Make development decisions predictable, fair, and cost-effective.
- Encourage community and stakeholder collaboration in development decisions.

The RP also addresses border issues, providing an important guideline for communities that have borders with Mexico. In this case, the goal is to create a regional community where San Diego, its neighboring counties, tribal governments, and northern Baja California mutually benefit from San Diego's varied resources and international location.

City of Chula Vista Climate Action Plan

Since 2000, Chula Vista has been implementing a Climate Action Plan (CAP) to address the threat of climate change to the local community. The original Carbon Dioxide Reduction Plan has been revised to incorporate new climate mitigation and adaptation measures to strengthen the City's climate action efforts and to facilitate the numerous community co-benefits such as utility savings, better air quality, reduced traffic congestion, local economic development, and improved quality of life. To help guide implementation of the CAP, the City regularly conducts GHG emission inventories.

2.2 CLIMATE AND METEOROLOGY

The climate in southern California, including the SDAB, is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity.

The predominant wind direction in the vicinity of the Project site is from the west and the average wind speed is approximately five miles per hour (Iowa Environmental Mesonet [IEM] 2015). The annual average maximum temperature in the Project area is approximately 74 F, and the annual average minimum temperature is approximately 52ºF. Total precipitation in the Project area averages approximately 13 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center [WRCC] 2015).

Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases, which is the opposite of general patterns). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO_2 react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality

problems are created due to CO and NO_2 emissions. High NO_2 levels usually occur during autumn or winter, on days with summer-like conditions.

2.3 EXISTING AIR QUALITY

2.3.1 Criteria Pollutants

2.3.1.1 *Attainment Designations*

Attainment designations are discussed in Section 2.1.1 and Table 2. The SDAB is classified as a marginal nonattainment area for the 8-hour NAAQS for ozone. The SDAB currently falls under a national "maintenance plan" for CO. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone (serious nonattainment), PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area for all other criteria pollutants.

2.3.1.2 *Monitored Air Quality*

The SDAPCD operates a network of ambient air monitoring stations throughout the County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest ambient monitoring stations to the Project site is the Chula Vista monitoring station located at 80 East J Street. Air quality data for are shown in Table 4, *Air Quality Monitoring Data.*

Monitoring data presented below shows acceptable levels of the criteria air pollutants ozone (1-hour), PM_{10}, $PM_{2.5}$, and NO_2 for 2013 to 2015. The state 8-hour ozone standard was violated once in 2014.

Table 4
AIR QUALITY MONITORING DATA

Pollutant	2013	2014	2015
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.073	0.093	0.088
Days above 1-hour state standard (>0.09 ppm)	0	0	0
Maximum 8-hour concentration (ppm)	0.063	0.072	0.067
Days above 8-hour state standard (>0.070 ppm)	0	1	0
Days above 8-hour federal standard (>0.075 ppm)	0	0	0
Respirable Particulate Matter (PM_{10})			
Maximum 24-hour concentration ($\mu g/m^3$)	40.0	39.0	45.0
Days above state standard (>50 $\mu g/m^3$)	0	0	0
Days above federal standard (>150 $\mu g/m^3$)	0	0	0
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration ($\mu g/m^3$)	21.9	26.5	33.5
Days above federal standard (>35 $\mu g/m^3$)	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.057	0.055	0.049
Days above state 1-hour standard (0.18 ppm)	0	0	0

Source: CARB 2016b.
ppm = parts per million, $\mu g/m^3$ = micrograms per cubic meter

2.3.2 Greenhouse Gases

2.3.2.1 *Statewide*

The CARB performs statewide GHG inventories. The inventory is divided into six broad sectors; agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT of CO_2e. Table 5, *California Greenhouse Gas Emissions by Sector*, shows the estimated statewide GHG emissions for the years 1990, 2000, 2010, and 2013.

Table 5
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR
(MMT CO_2e)

Sector	1990	2000	2010	2013
Agriculture and Forestry	23.6 (5%)	32.1 (7%)	34.5 (8%)	36.2 (8%)
Commercial	14.4 (3%)	15.0 (3%)	21.6 (5%)	22.6 (5%)
Electricity Generation	110.6 (26%)	105.2 (22%)	90.5 (20%)	90.6 (20%)
Industrial	103.0 (24%)	105.4 (22%)	102.7 (23%)	104.2 (23%)
Residential	29.7 (7%)	31.8 (7%)	32.2 (7%)	32.3 (7%)
Transportation	150.7 (35%)	178.1 (38%)	173.7 (38%)	172.5 (38%)
Unspecified Remaining	1.3 (<1%)	1.2 (<1%)	0.8 (<1%)	0.8 (<1%)
TOTAL	**433.3**	**468.8**	**456.0**	**459.3**

Source: CARB 2007 and CARB 2015a

As shown in Table 5, statewide GHG emissions totaled 433 MMT CO_2e in 1990, 469 MMT CO_2e in 2000, 456 MMT CO_2e in 2010, and 459 MMT CO_2e in 2013. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

2.3.2.2 *San Diego County*

A San Diego regional emissions inventory was prepared by the University of San Diego (USD) School of Law, Energy Policy Initiative Center (EPIC) that took into account the unique characteristics of the region. Their 2010 emissions inventory for San Diego is duplicated below in Table 6, *San Diego County Greenhouse Gas Emissions by Sector*. The sectors included in this inventory are somewhat different from those in the statewide inventory.

Table 6 SAN DIEGO COUNTY GREENHOUSE GAS EMISSIONS BY SECTOR (MMT CO_2e)	
Sector	**2010**
On-road Transportation	14.4 (43%)
Electricity	8.3 (25%)
Natural Gas Consumption	2.9 (9%)
Off-Road Equipment and Vehicles	1.4 (4%)
Civil Aviation	1.9 (6%)
Waste	0.6 (2%)
Industrial	1.8 (5%)
Water-Borne Navigation	0.1 (<1%)
Rail	0.3 (1%)
Agriculture/Forestry/Land Use	0.5 (2%)
Other	1.6 (5%)
Sequestration	-0.7 (-2%)
TOTAL	**33.2**

Source: USD 2013

Similar to the statewide emissions, transportation-related GHG emissions contributed the most countywide, followed by emissions associated with energy use.

2.3.2.3 *City of Chula Vista*

To help guide implementation of the CAP, the City regularly conducts GHG emission inventories. Table 7, *Chula Vista Greenhouse Gas Emissions*, shows the estimated city-wide GHG emissions for the years 1990, 2005, and 2012.

Table 7 CHULA VISTA GREENHOUSE GAS EMISSIONS (MT CO_2e)			
Source	**1990**	**2005**	**2012**
Transportation	340,090	322,293	400,133
Energy	416,575	480,950	503,936
Solid Waste	80,895	87,621	65,610
Potable Water	*	46,951	43,014
Waste Water	9,607	15,457	17,719
TOTAL	**847,166**	**953,272**	**1,030,412**

Source: City of Chula Vista 2012
* = Not Available

3.0 METHODOLOGY AND THRESHOLDS OF SIGNIFICANCE

3.1 METHODOLOGY

Criteria pollutant and GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2 (SCAQMD 2013). CalEEMod is a computer model used to estimate criteria air pollutant and GHG emissions resulting from land development projects throughout the state of California. CalEEMod was developed by the SCAMQD with the input of several air quality management and pollution control districts.

In brief, CalEEMod is a computer model that estimates criteria air pollutant and greenhouse gas emissions from mobile (i.e., vehicular) sources, area sources (fireplaces, woodstoves, and landscape maintenance equipment), energy use (electricity and natural gas used in space heating, ventilation, and cooling; lighting; and plug-in appliances), water use and wastewater generation, and solid waste disposal. Emissions are estimated based on land use information input to the model by the user.

In the first module, the user defines the specific land uses that will occur at the project site. The user also selects the appropriate land use setting (urban, suburban, or rural), operational year, location, climate zone, and utility provider. The input land uses, size features, and population are used throughout CalEEMod in determining default variables and calculations in each of the subsequent modules. The input land use information consists of land use subtypes and their unit or square footage quantities.

Subsequent modules include construction (including off-road vehicle emissions), mobile (on-road vehicle emissions), area sources (woodstoves, fireplaces, consumer products [cleansers, aerosols, solvents], landscape maintenance equipment, architectural coatings), water and wastewater, and solid waste. Each module comprises multiple components including an associated mitigation module to account for further reductions in the reported baseline calculations. Other inputs include trip generation rates, trip lengths, vehicle fleet mix (percentage autos, medium truck, etc.), trip distribution (i.e., percent work to home, etc.), duration of construction phases, construction equipment usage, and grading areas, as well as other parameters.

In various places the user can input additional information and/or override the default assumptions to account for project- or location-specific parameters. For this assessment the default parameters including vehicle trip lengths and energy intensity factors were not changed unless otherwise noted. The input data and reported criteria pollutant emission estimates based on these inputs are discussed below. The CalEEMod input and output files are included in Appendix A.

3.1.1 Construction Emissions

As described above, construction emissions are assessed using the CalEEMod, Version 2013.2.2. CalEEMod contains OFFROAD2011 emission factors and EMFAC2011 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. The construction

analysis included modeling of the projected construction equipment that would be used during each construction activity and quantities of earth and debris to be moved.

CalEEMod forecasts the number and type of construction equipment that would be used given project-specific design. In the absence of project-specific construction information for the UID, equipment for all phases of construction are estimated by CalEEMod based on the size and subtypes of the land uses entered in the land use module. For "worst-case" modeling purposes, construction is assumed to begin in January 2017 and be completed in May 2030. The quantity, duration, and the intensity of construction activity have an effect on the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). Detailed construction phasing and equipment assumptions are provided in Appendix A.

3.1.2 Operation Emissions

Operational impacts were estimated using CalEEMod. Operational sources of emissions include area, energy, transportation, water use, and solid waste. Operational emissions from area sources include the combustion of natural gas for heating and hot water, engine emissions from landscape maintenance equipment, and VOC emissions from repainting of buildings.

Operational emissions from mobile source emissions are associated with Project-related vehicle trip generation. Based on the Traffic Impact Analysis (Linscott, Law and Greenspan Engineers [LLG] 2016), at full buildout the Project would generate 54,360 average daily trips (ADTs). Default vehicle speeds, trip lengths, trip purpose, and trip type percentages for each land use subtype were used. Model output data sheets are included in Appendix A.

Operational emission estimates of the Project with design features take into account the following assumptions for the Project:

- CAPCOA Measure LUT-1, Increase Density;
- CAPCOA Measure LUT-3, Increase Diversity;
- CAPCOA Measure LUT-5, Increase Transit Accessibility;
- CAPCOA Measure LUT-9, Improve Walkability Design;
- CAPCOA Measure SDT-1, Improve Pedestrian Network;
- Energy efficiency in accordance 2013 Title 24;
- Zero net energy development;
- Water conservation strategies to reduce water usage by a minimum of 20 percent compared to statewide averages;

- Use of reclaimed water for all outdoor landscaped areas;
- No wood burning fireplaces; and
- Operational solid waste diversion of 75 percent in accordance with AB 341.

3.2 SIGNIFICANCE CRITERIA

3.2.1 Air Quality

According to Appendix G of the State CEQA Guidelines, a project would have a significant air quality environmental impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan;

2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

4. Expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations; or

5. Create objectionable odors affecting a substantial number of people.

To determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, or (b) result in a cumulatively considerable net increase of PM_{10} or exceed quantitative thresholds for ozone precursors (i.e., NO_X and VOCs), project emissions may be evaluated based on the quantitative emission thresholds established by the lead agency. The City of Chula Vista has not established specific numeric thresholds related to criteria air pollutants. The City relies, instead, on the significance thresholds established by the SCAQMD. For this analysis, the calculated emissions of the Project are compared to the SCAQMD thresholds of significance for criteria pollutants for individual projects, provided in Table 8, *Significance Thresholds*. If the thresholds are exceeded by a proposed project, then the impact is considered significant.

Table 8 SIGNIFICANCE THRESHOLDS		
Pollutant	**Construction Emissions (pounds/day)**	**Operational Emissions (pounds/day)**
Oxides of Nitrogen (NO_X)	100	55
Volatile Organic Compounds (VOC)	75	55
Respirable Particulate Matter (PM_{10})	150	150
Fine Particulate Matter ($PM_{2.5}$)	55	55
Oxides of Sulfur (SO_X)	150	150
Carbon Monoxide (CO)	550	550
Lead and Lead Compounds	3	3
Toxic Air Contaminants		
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT	
Non-Cancer Hazard	1.0	

Source: SCAQMD 2015.
T-BACT = Toxics-Best Available Control Technology

With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (preschool through 12th grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public. Any project that has the potential to directly impact a sensitive receptor located within one-quarter mile and results in a health risk greater than 10 in 1 million would have a potentially significant impact.

The State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, commonly referred to as public nuisance law, prohibits emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/ households have made separate complaints within 90 days. Odor complaints from a "considerable" number of persons or businesses in the area will be considered to be a significant, adverse odor impact.

Every use and operation shall be conducted so that no unreasonable heat, odor, vapor, glare, vibration (displacement), dust, smoke, or other forms of air pollution subject to APCD standards

of particulate matter shall be discernible at the property line of the parcel upon which the use or operation is located.

Therefore, any unreasonable odor discernible at the property line of the Project site will be considered a significant odor impact.

3.2.2 Greenhouse Gases

Given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

According to Appendix G of the CEQA Guidelines, the following criteria may be considered in evaluating the significance of GHG emissions:

Would the project:

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

In establishing numerical thresholds for GHG emissions, most lead agencies look to compliance with AB 32. As discussed in Section 2.1.3, AB 32 set the goal of reducing statewide GHG emissions to 1990 levels by the year 2020. SB 32 looks beyond 2020 and set the goal for reducing statewide GHG emissions to 40 percent below 1990 levels by the year 2030. Given the Project's development timeline with full buildout in 2030, Project emissions are compared to the reduction target set by SB 32 with the use of an efficiency threshold.

An efficiency threshold sets a per capita emissions limit. The total emissions from a given project are summed and divided by the project's service population (SP) to determine emissions per person and are then compared to the efficiency threshold. To develop an efficiency threshold that would satisfy the requirements of SB 32, the City's 1990 emissions inventory, less 40 percent, must be divided by the City's 2030 population.

Based on the data provided in Table 2 and Table 3 of the *City of Chula Vista 2012 Greenhouse Gas Emissions Inventory*, the City's 1990 GHG emissions inventory totals approximately 847,166 MT CO_2e. Consistent with SB 32, the City's 2030 goal is 508,300 MT CO_2e (847,166 x [1-0.40]). Based on data provided by SANDAG, the City's service population in 2030 is estimated to be 389,979 (288,978 residents + 101,001 employees) (SANDAG 2010). Dividing the City's 2030 goal by the City's 2030 service population results in an efficiency threshold of 1.30 MT CO_2e/SP (508,300/389,979).

4.0 AIR QUALITY IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed Project related to the air pollutant emissions.

4.1 CONSISTENCY WITH AIR QUALITY PLANS

The SDAPCD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the RAQS and SIP, prepared by the SDAPCD for the region. Both the RAQS and SIP rely on information from CARB and SANDAG, including projected growth in the County, mobile, area and all other source emissions in order to project future emissions and determine from that the strategies necessary for the reduction of stationary source emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County. As such, projects that propose development that is consistent with the growth anticipated by the local general plan would be consistent with the RAQS. In the event that a project proposes development which is less dense than anticipated within the local general plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the local general plan and SANDAG's growth projections upon which the RAQS is based, the project would be in conflict with the RAQS and SIP and might have a potentially significant impact on air quality. This situation would warrant further analysis to determine if the Project and the surrounding projects exceed the growth projections used in the RAQS for the specific subregional area.

The City of Chula Vista General Plan has overarching development objectives and policies that specifically state that proposed development in this area is to be consistent with existing Otay Ranch GDP and SPA plans. The Project and associated off-site improvements are consistent with the Otay Ranch GDP. The proposed Project is also subject to the existing P-C District zoning regulations, which apply to the Village Development Areas. The P-C zone requires the preparation of an SPA plan. The proposed project would provide for orderly pre-planning and long-term development because it includes a SPA Plan that will guide UID development. It implements an orderly preplanning for UID development through the implementation of approved site utilization plans and form-based code. The form-based code in the SPA Plan would implement regulations and standards that focus on the physical relationships between buildings, streets, and public spaces. This approaches the development of land by regulating the form, character, and street appearance of a building to focus attention on the public presentation of buildings and creating a public setting that is comfortable for pedestrians. This approach also provides design standards for landscape zones, open space and recreational areas, lighting, parking areas, and signage. Based on the described conformance with applicable land use and zoning criteria, the proposed Project would be in conformance with the General Plan and would therefore be consistent with the RAQS. Impacts associated with the RAQS would be less than significant.

4.2 CONFORMANCE TO FEDERAL AND STATE AIR QUALITY STANDARDS

The Project would generate criteria pollutants in the short term during construction and the long term during operation. To determine whether a project would result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, a project's emissions are evaluated based on the quantitative emission thresholds established by the SCAQMD (as shown in Table 8).

4.2.1 Construction

As detailed in Section 3.1, peak daily criteria pollutant emissions were estimated using CalEEMod. In the absence of project-specific construction information for the UID, equipment types needed for all phases of construction are estimated by CalEEMod based on the size and subtypes of the land uses entered in the land use module. For "worst-case" modeling purposes, construction is assumed to begin in January 2017 and be completed in May 2030. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). Details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

The results of the calculations for Project construction are shown in Table 9, *Daily Construction Emissions*. The data are presented as the maximum anticipated daily construction emissions for comparison with the SCAQMD thresholds.

Table 9
DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds per day)					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Site Preparation	5	52	40	<0.5	11	7
Grading	6	70	48	<0.5	8	5
Building Construction	22	101	270	1	40	12
Paving	1	8	15	<0.5	1	<0.5
Architectural Coatings	19	3	17	<0.5	6	2
Maximum Daily Emissions	**22**	**101**	**270**	**1**	**40**	**12**
Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***Yes***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
Notes: Includes measures listed in section 1.3.

As shown in Table 9, emissions of all criteria pollutants, with the exception of NO_X, are below the SCAQMD daily thresholds. Due to the exceedance of the NO_X threshold, impacts are potentially significant and mitigation is required.

4.2.1.1 *Mitigation Measures and Design Considerations*

The following mitigation measure is required to reduce construction emissions of NO_X:

AQ-1 Use of Tier 4 Final Off-Road Equipment. All off-road diesel-powered construction equipment greater than 50 horsepower (HP) used during each building construction phase shall meet USEPA Tier 4 off-road emissions standards. A copy of each unit's certified Tier specification shall be provided to the City of Chula Vista Development Services Department at the time of mobilization of each applicable unit of equipment.

4.2.1.2 *Significance of Impacts with Mitigation*

Mitigation Measure (MM) AQ-2, as identified above, requires the use of off-road equipment that meets or exceeds Tier 4 standards. Table 10, *Daily Construction Emissions with Mitigation,* summarizes construction emissions associated with the Project with implementation of MM AQ-1.

Table 10
DAILY CONSTRUCTION EMISSIONS WITH MITIGATION

Phase	Pollutant Emissions (pounds per day)					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Site Preparation	5	52	40	<0.5	11	7
Grading	6	70	48	<0.5	8	5
Building Construction	21	87	271	1	39	12
Paving	1	8	15	<0.5	1	<0.5
Architectural Coatings	19	3	17	<0.5	6	2
Maximum Daily Emissions	**21**	**87**	**271**	**1**	**39**	**12**
Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
Notes: Includes measures listed in section 1.3.

As shown in Table 10, with implementation of MM AQ-1 NOX emissions would be reduced to a level that is less than the SCAQMD significance threshold. Thus, construction impacts would be less than significant with mitigation.

4.2.2 Operation

To estimate the most conservative estimate for operational air quality emissions, the Project assumptions for the full buildout year (2030) were used in the analysis. The full buildout condition represents the greatest amount of vehicle trips and land use development. The major source of long-term operational air quality impacts from the proposed Project would be emissions produced from project-generated vehicle trips. Vehicle trip generation is based on the Project traffic study, which was prepared by LLG Engineers (2016). The projected ADT rate for the proposed Project is 54,360 trips. The vehicle trip emissions account for internal capture from mixed-use development and the reduction in vehicle trips compared to similar developments that do not provide access to transit. A BRT station is identified at the intersection of Campus Boulevard and Orion Avenue that would serve the project site and nearby off-site residential and

commercial areas. The projected ADT and vehicle trip length also take into account the Transportation Demand Management (TDM) program included in the UID SPA Plan. The TDM includes strategies to reduce vehicle trips and miles traveled and to design a multi-modal transportation system and establishes a Transportation Management Association to provide transportation services in a particular area to reduce vehicle miles and implement other TDM strategies. Reduction measures applied to the Project associated with implementation of the TDM strategies are identified in Section 1.5.1, *Vehicle Miles Traveled Reduction Features*. Pollutant emissions from vehicles were calculated using CalEEMod.

In addition to vehicle trips, the proposed project would emit pollutants from on-site area sources, such as landscape maintenance equipment; consumer products; and periodic repainting of interior and exterior surfaces (architectural coatings). Energy source emissions would be generated by the onsite burning of natural gas for space and water heating. The energy source assumptions include 25 percent increased efficiency beyond the CalEEMod default Title 24 standards (2008) to reflect the 2013 Title 24 standards (CEC 2012). This reduction was only applied to the portion of energy consumption regulated by Title 24.

The vehicular and area source emissions associated with operation of the proposed project are summarized in Table 11, *Daily Operational Emissions*. As shown therein, the proposed Project would exceed the daily regional thresholds for CO, VOCs, NO_x, and PM_{10} during operation of development in the UID. Emissions are attributable primarily to vehicular trips, which would exceed the thresholds for VOCs, NO_X, and CO. However, area sources would also result in significant emissions of VOCs from consumer products and landscaping. Energy source emissions would combine with mobile source emissions to result in significant emissions of PM_{10}. Therefore, a significant impact would occur. The air quality technical report for the GPA/ GDPA estimated emissions that would result from the increase in building potential accommodated by the GPA/GDPA compared to the previous GDP, including the increase in building potential in the UID. The findings in this report are consistent with the GPA/GDPA conclusion that significant impacts would occur.

Table 11
DAILY OPERATIONAL EMISSIONS

Emission Source	Pollutant Emissions (pounds/day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Area	180	2	167	<1	1	1
Energy	4	40	31	<1	3	3
Mobile	105	124	784	2	147	41
TOTAL	**290**	**166**	**983**	**2**	**151**	**45**
Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Significant Impact?	***Yes***	***Yes***	***Yes***	***No***	***Yes***	***No***

Source: CalEEMod (output data is provided in Appendix A)

The Otay Ranch GDP Final Program EIR includes land use policies, siting/design policies, and transportation-related management actions to mitigate operational emissions (Ogden 1992). All applicable measures have already been incorporated into the UID SPA plan, such as provision of bike lanes, providing services near residences, and providing transit support facilities such as bus stops, as listed in the Project Description. There are no other feasible mitigation measures

available at the project level to reduce vehicular emissions other than reducing vehicle trips. The Project trip generation rates account for the reduction in vehicle trips that would occur as a result of the mixed-use areas, transit use, and availability of pedestrian and bicycle facilities proposed as part of the UID SPA plan. In addition, future vehicular emissions may be lower than estimated due to increasingly stringent California fuel efficiency requirements. Some measures cannot be implemented at the SPA level, such as providing video-conference facilities in work places or requiring flexible work schedules. Additionally, there are no feasible mitigation measures currently available to reduce area sources of emissions without regulating the purchases of individual consumers. Operational emissions of VOCs, NO_X, CO, and PM_{10} would be significant and unavoidable.

4.3 CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

The region is a federal and/or state nonattainment area for PM_{10}, $PM_{2.5}$, and ozone. The UID would contribute particulates and the ozone precursors VOC and NO_X to the area during short term Project construction. As described in Section 4.2.1, regional emissions during construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation with mitigation. Construction emissions with mitigation would be less than the significance thresholds (Table 10). Therefore, regional construction emissions would not be cumulatively considerable, and the impact would be less than significant with mitigation.

As shown in the Project construction emissions evaluation, the emissions of NO_X, VOCs, PM_{10}, and $PM_{2.5}$ would be below significance levels. Short-term cumulative impacts related to air quality could occur if construction of the Project and other projects in the surrounding area were to occur simultaneously. In particular, with respect to localized impacts, the consideration of cumulative construction particulate (PM_{10} and $PM_{2.5}$) impacts is limited to cases when projects constructed simultaneously are within a few hundred yards of each other because of (1) the combination of the short range (distance) of particulate dispersion (especially when compared to gaseous pollutants) and (2) the SDAPCD's required dust control measures which further limit particulate dispersion from a project site. Though it is possible multiple projects under the UID and previously approved projects may undergo construction concurrently, none of the projects are expected to result in emissions greater than the peak daily construction scenario as analyzed above. As shown in Table 10, the peak daily construction scenario results in emissions of particulates that are 26 percent of the PM_{10} threshold and 22 percent of the $PM_{2.5}$ threshold. As such, Project construction is not anticipated to result in a cumulatively significant impact on air quality.

Long-term emissions, as shown above in Table 11, would exceed regional thresholds, and, therefore, be cumulatively considerable. The long-term cumulative impact would be significant and unavoidable.

4.4 IMPACTS TO SENSITIVE RECEPTORS

Impacts to sensitive receptors are typically analyzed for operational period CO hotspots and exposure to TACs. An analysis of the Project's potential to expose sensitive receptors to these pollutants is provided below.

4.4.1 Carbon Monoxide Hotspots

Vehicle exhaust is the primary source of CO. In an urban setting the highest CO concentrations are generally found within close proximity to congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as distance from the emissions source (i.e., congested intersection) increase. Project-generated traffic has the potential of contributing to localized "hot spots" of CO off site. Because CO is a byproduct of incomplete combustion, exhaust emissions are worse when fossil-fueled vehicles are operated inefficiently, such as in stop-and-go traffic or through heavily congested intersections, where the level of service (LOS) is severely degraded.

The CARB also recommends evaluation of the potential for the formation of locally high concentrations of CO, known as CO hot spots. A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour CO ambient air standards. To verify that the project would not cause or contribute to a violation of the 1-hour and 8-hour CO standards, an evaluation of the potential for CO hot spots at nearby intersections was conducted.

The Traffic Impact Assessment (TIA) (LLG 2016) evaluated whether there would be a change in the LOS at the intersections affected by the proposed Project. The potential for CO hot spots was evaluated based on the results of the TIA. The Transportation Project-Level Carbon Monoxide Protocol (California Department of Transportation [Caltrans] 1998) was followed to determine whether a CO hot spot is likely to form due to project-generated traffic. In accordance with the Protocol, CO hot spots are typically evaluated when: (a) the LOS of an intersection decreases to an LOS E or worse; (b) signalization and/or channelization is added to an intersection; and, (c) sensitive receptors such as residences, schools, hospitals, etc., are located in the vicinity of the affected intersection or roadway segment.

According to the TIA, twelve intersections would operate at LOS E or F and experience an increase in delay from the Project:

- Bonita Road at San Miguel Road,
- Proctor Valley Road at San Miguel Road,
- Proctor Valley Road at San Miguel Ranch Road,
- Paseo Ranchero and Telegraph Canyon Road,
- La Media Road at Birch Road,
- SR-805 Southbound ramps at Main Street,
- SR-805 Northbound ramps at Main Street,
- Village 9 Street "B" at Village 9 Street "C",
- SR-805 Southbound ramps at Palm Avenue,
- SR-805 Northbound ramps at Palm Avenue,
- Heritage Road at Avenida de las Vistas, and
- Heritage Road at Otay Mesa Road.

Therefore, consistent with the CO Protocol, these findings indicate that further screening is required. Although the SDAPCD does not, various air quality agencies in California have developed conservative screening methods. The screening methods of the Sacramento Metropolitan Air Quality Management District (SMAQMD) are used for this Project because ambient CO concentrations within the SMAQMD jurisdiction are higher than for the Project area, as measured by CARB, resulting in a more conservative analysis. The SMAQMD states that a project would not result in a significant impact to local CO concentrations if it meets all of the below criteria:

- The affected intersection carries less than 31,600 vehicles per hour;
- The project does not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, below-grade roadway, or other location where horizontal or vertical mixing of air would be substantially limited; and
- The affected intersection, which includes a mix of vehicle types, is not anticipated to be substantially different from the County average, as identified by EMFAC or CalEEMod models (SMAQMD 2009).

The highest traffic volume at the affect intersections is estimated to be 6,850 vehicles at the intersection of Paseo Ranchero and Telegraph Canyon Road during the AM peak hour (LLG 2016). The intersection is not located in a tunnel, urban canyon, or similar area that would limit the mixing of air, nor is the vehicle mix anticipated to be substantially different than the County average. There would be no potential for a CO hotspot or exceedance of State or federal CO ambient air quality standard because the maximum traffic volume would be substantially less than the 31,600 vehicles per hour screening level; because the congested intersection is located where mixing of air would not be limited; and because the vehicle mix would not be uncommon. The impact would be less than significant and no mitigation measures are required.

4.4.2 Exposure to TACs

Construction activities would result in short-term, Project-generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment. CARB identified diesel PM as a TAC in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual (MEI) are higher if a fixed exposure occurs over a longer time period. According to the Office of Environmental Health Hazard Assessment, HRAs, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the Project.

There would be relatively few pieces of off-road, heavy-duty diesel construction equipment in operation, and the construction period would be relatively short, especially when compared to 70 years. Combined with the highly dispersive properties of diesel PM, distance from sensitive receptors, and additional reductions in exhaust emissions from improved equipment, construction-related emissions would not expose sensitive receptors to substantial emissions of TACs. The impact would be less than significant.

With regard to long-term operations, it is not currently known if any of the uses proposed by the UID would include any new sources of TACs. Subsequent projects that include new stationary sources (such as laboratory buildings) would need to analyze specific operation-related TAC impacts to ensure that emissions remain below SDAPCD thresholds. Due of the potential of individual projects to include new sources of TACs, implementation of the UID would result in potentially significant impacts related to TAC emissions.

4.4.2.1 *Mitigation Measures and Design Considerations*

Implementation of the following mitigation measure would reduce stationary source impacts.

AQ-2 Health Risk Assessment. Prior to the issuance of building permits for any new facility that would have the potential to emit TACs, in accordance with AB 2588, an emissions inventory and health risk assessment shall be prepared. Building permits shall only be issued for facilities that demonstrate TAC emissions below the standards listed in Table 8 (excess cancer risk of 1 in 1 million or 10 in 1 million with Toxics-Best Available Control Technology (T-BACT) and non-cancer hazard index of 1.0).

4.4.2.2 *Significance of Impacts with Mitigation*

Implementation of Mitigation Measure AQ-2 would ensure impacts from new stationary sources would be less than significant.

4.5 ODORS

The State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. Any unreasonable odor discernible at the property line of the Project site will be considered a significant odor impact.

Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. Diesel exhaust and VOCs would be emitted during construction of the Project. The odors of these emissions are objectionable to some; however, emissions would disperse rapidly from the Project area and therefore should not be at a level that would affect a substantial number of people. Further, construction operations would be temporary. As a result, impacts associated with odors during construction are not considered significant.

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting activities, refineries, landfills, dairies, and fiberglass molding operations. The Project would not place sensitive receptors within a close proximity to the listed odor sources. In addition, the UID would not be a source of odor impacts, as the operation of university-related uses is not associated with odors. Impacts associated with odor sources are considered less than significant.

5.0 GREENHOUSE GAS IMPACT ANALYSIS

This section evaluates potential impacts of the proposed Project related to the generation of GHG emissions.

5.1 GHG EMISSIONS

5.1.1 Construction

Project construction GHG emissions were estimated using the CalEEMod model as described in Section 3.1, Methodology. Project-specific input was based on general information provided in Section 1.3, Project Description, and default model settings to estimate reasonable worst-case conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

Emissions of GHGs related to the construction of the UID would be temporary. As shown in Table 12, *Estimated Construction GHG Emissions*, total GHG emissions associated with construction of all land uses proposed under the UID are estimated at 55,423 MT of CO_2e. For construction emissions, City guidance recommends that the emissions be amortized (i.e., averaged) over 30 years and added to operational emissions. Averaged over 30 years, the proposed construction activities would contribute approximately 1,847 MT CO_2e emissions per year.

Table 12
ESTIMATED CONSTRUCTION GHG EMISSIONS

Year	Emissions (MT CO_2e)
2017	513
2018	758
2019	746
2020	4,673
2021	6,264
2022	6,188
2023	6,137
2024	6,144
2025	6,087
2026	6,058
2027	6,033
2028	4,604
2029	845
2030	373
TOTAL[1]	**55,423**
Amortized Construction Emissions[2]	1,847

Source: CalEEMod (output data is provided in Appendix A)
[1] The total presented is the sum of the unrounded values.
[2] Construction emissions are amortized over 30 years in accordance with City guidance.

5.1.2 Operational Emissions

Operational sources of GHG emissions include: (1) energy use (electricity and natural gas) and area sources (landscaping equipment); (2) vehicle use; (3) solid waste generation; and (4) water conveyance and treatment.

5.1.2.1 *Energy Use*

As discussed in Section 1.5.2, Energy Efficiencies, the Project would be constructed as a zero net energy facility, incorporating sustainable design and energy reduction measures (such as photovoltaic panels) to completely offset the UID's annual electricity use. Energy sources also include the on-site burning of natural gas for space and water heating. The natural gas consumption assumptions include 25 percent increased efficiency beyond the CalEEMod default Title 24 standards (2008) to reflect the 2013 Title 24 standards. This reduction was only applied to the portion of energy consumption regulated by Title 24. Applying a 25 percent increase in Title 24 regulated energy consumption results in an overall 19 percent reduction in natural gas emissions. The annual GHG emissions from energy usage, comprised exclusively of natural gas usage, are estimated to be 8,117 MT CO_2e per year.

5.1.2.2 *Area Sources*

A relatively small amount of GHGs, approximately 25 MT CO_2e per year, would result from area sources (primarily landscaping equipment).

5.1.2.3 *Vehicular (Mobile) Sources*

Mobile-source GHG emissions were based on vehicle trip generation provided in the Project traffic study, which was prepared by LLG (2016). The projected ADT rate for the proposed Project is 54,360 trips. The vehicle trip emissions account for the design features listed in Section 1.5.1, Vehicle Miles Traveled Reduction Measures. Using CalEEMod defaults for trip type, distribution, and length, the total annual vehicle miles traveled (VMT) associated with the UID was estimated to be 55.9 million miles, and vehicle-related GHG emissions were estimated to be 20,342 MT CO_2e per year.

5.1.2.4 *Solid Waste Sources*

Solid waste generated by the Project would also contribute to GHG emissions. Treatment and disposal of solid waste produces significant amounts of methane. Through mandatory compliance with AB 341, the Project would achieve an average 75 percent diversion of waste during operations. Applying this reduction to CalEEMod defaults, GHG emissions from Project-related solid waste would be 559 MT CO_2e per year.

5.1.2.5 *Water Sources*

Water-related GHG emissions are from the conveyance and treatment of water. The California Energy Commission's 2006 Refining Estimates of Water-Related Energy Use in California defines average energy values for water in Southern California. These values are used in CalEEMod to establish default water-related emission factors. The Project would implement

water conservation features to increase water use efficiency as listed in Section 1.5.3, Water Conservation. Applying these reductions to the CalEEMod defaults, the Project's estimated GHG emissions related to water treatment and conveyance would be 5,064 MT CO_2e per year.

5.1.2.6 *Other GHG Emission Sources*

Ozone is also a GHG; however, unlike other GHGs, ozone in the troposphere is relatively short lived and therefore is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_X and VOCs) to global warming (CARB 2004). Therefore, it is assumed that emission of ozone precursors associated with the Project would not significantly contribute to climate change.

At present, there is a federal ban on chlorofluorocarbons (CFCs); therefore, it is assumed that the Project would not generate emissions of this GHG. Implementation of the Project may emit a small amount of HFC emissions from leakage, service of, and from disposal at the end of the life of refrigeration and air conditioning equipment. However, these emissions are not quantifiable and are assumed to be negligible. PFCs and sulfur hexafluoride are typically used in heavy-duty industrial applications. The proposed Project would not include heavy-duty industrial applications. Therefore, it is not anticipated that the Project would contribute significant emissions of these GHGs.

5.1.2.7 *Summary*

As illustrated in Table 13, *Estimated Annual GHG Emissions*, full buildout of the UID would result in 35,954 MT CO_2e per year.

Table 13
ESTIMATED ANNUAL GHG EMISSIONS

Emission Sources	Emissions (MT CO_2e/year)
Area Sources	25
Energy Sources	8,117
Vehicular (Mobile) Sources	20,342
Solid Waste Sources	559
Water Sources	5,064
Operational Subtotal	34,107
Construction (Annualized over 30 years)	1,847
TOTAL PROJECT	**35,954**

Source: CalEEMod output data is provided in Appendix A

5.1.3 Significance Determination

Project emissions are compared to the reduction target set by SB 32 with the use of an efficiency threshold. As detailed in Section 3.2.2, the efficiency threshold was calculated by dividing the City's 2030 emissions goal consistent with SB 32 by the City's 2030 service population. The result is an efficiency threshold of 1.30 MT CO2e/SP per year. The Project's service population

is the sum of all the Project's employees and residents. As shown in Table 14, *UID Service Population*, the service population for the UID is 34,000 persons.

Table 14
UID SERVICE POPULATION

Person Type	Number of Persons
University Students (Full-Time)	20,000
University Faculty/Staff	6,000
Innovation District Employees	8,000
TOTAL SERVICE POPULATION	**34,000**

Source: ASG 2015

The results of the GHG calculations for full development of the UID are shown in Table 15, *GHG Emissions Determination*. The data are presented in terms of emissions per service population for comparison with the efficiency threshold.

Table 15
GHG EMISSIONS DETERMINATION

Category	Value
Total UID Emissions (Table 12)	35,954 MT CO_2e
UID Service Population (Table 13)	34,000 Persons
UID Emissions per Service Population	**1.06 MT CO_2e/SP/yr**
Efficiency Threshold	*1.30 MT CO_2e/SP/yr*
Significant Impact?	***No***

As shown in Table 15, full buildout of the UID would result in 1.06 MT CO_2e/SP/yr. This value can be compared to and is less than the efficiency threshold established for the City in compliance with SB 32. Impacts due to GHG emissions would be less than significant.

5.2 CONSISTENCY WITH LOCAL PLANS ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS

There are numerous State plans, policies and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 looks beyond 2020 and set the goal for reducing statewide GHG emissions to 40 percent below 1990 levels by the year 2030. As previously discussed, the UID's GHG emissions would be less than efficiency threshold based on compliance with SB 32 being applied to this analysis.

Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed Project does not conflict with those plans and regulations.

Since 2000, Chula Vista has been implementing a CAP to address the threat of climate change to the local community. The Project design features listed in Section 1.5 would support the applicable policies included in the City's CAP. The Project's consistency with these policies is analyzed in Table 16, *City CAP Implementation Strategies*.

Table 16
CITY CAP IMPLEMENTATION STRATEGIES

Measure	Project Consistency
Measure #4: Green Building Standard	*Consistent*. The Project would be constructed as a zero net energy facility, incorporating sustainable design and energy reduction measures (such as photovoltaic panels) to completely offset the UID's annual energy use. Potable water consumption would be reduced by at least 20% as required by CALGreen and the Project would utilize reclaimed water for all outdoor landscaping.
Measure #5: Solar & Energy Efficiency Conversion Program	*Consistent*. The Project would be constructed as a zero net energy facility, incorporating sustainable design and energy reduction measures (such as photovoltaic panels) to completely offset the UID's annual energy use.
Measure #6: Smart Growth Around Trolley Station	*Consistent*. A BRT station is identified at the intersection of Campus Boulevard and Orion Avenue that would serve the Project site and nearby off-site residential and commercial areas.
Measure #7: Increased Housing Density near Transit	*Consistent.* The Project implements design features to include housing density near transit.
Measure #8: Site Design with Transit Orientation:	*Consistent.* The Project accommodates a centrally located transit stop and provides for pedestrian-scaled building frontages to encourage walking.
Measure #9: Increased Land Use Mix	*Consistent.* The Project provides for an increase land use mix and variety of land uses.
Measure #10: Reduced Commercial Parking Requirements	*Consistent.* The Project provides for a managed parking system.
Measure #11: Site Design with Pedestrian/Bicycle Orientation	*Consistent.* The Project provides for pedestrian-scaled building frontages to encourage walking and bicycling. The Project also provides pedestrian and bicycle amenities.
Measure #12: Bicycle Integration with Transit and Employment	*Consistent.* All development will meet the requirements of CALGreen.
Measure #13: Bike Lanes, paths, and routes	*Consistent.* The Project provides for separated bike lanes.
Measure #14: Energy Efficient Landscaping	*Consistent.* The Project provides for landscaped parkways with street trees. The Water Conservation Plan identifies appropriate trees to increase water efficiency.
Measure #15: Solar Pool Heating	*Consistent.* Any installation of a pool will comply with the City's Municipal Code.
Measure #16: Traffic Signal and System Upgrades	*Consistent.* All traffic signals will comply with the requirements of the City's Traffic Signal Program.

Table 16 (cont.) CITY CAP IMPLEMENTATION STRATEGIES	
Measure	**Project Consistency**
Measure #18: Energy Efficient Building Recognition Program	*Consistent.* All new construction will comply with the Municipal Code requirements to exceed Title 24 by 15%.
Measure #20: Increased Employment Density Near Transit	*Consistent.* The Project provides for increased density.

Implementation of the proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. This would represent a less than significant impact.

5.3 HORIZON YEAR (2050) EMISSIONS INVENTORY

Beyond Project buildout, the Project's GHG emissions would reduce with the continued implementation of the reduction strategies and increased stringency of state reduction measures based on actions included in the Scoping Plan related to energy use and transportation that transition the state towards meeting its longer term GHG emission reduction goals. In addition to the reduction measures already applied to the Project, the following assumption was included in the reduced 2050 GHG emissions:

- Mobile source reductions resulting from fleet wide emissions improvements over current standards were estimated using the EMFAC2014 emissions inventories (see Appendix B). Emissions were modeled using Project specific assumptions for fleet mix and VMT as detailed the CalEEMod output files provided in Appendix A.

The emissions by source for 2050 were calculated by modeling 2050 mobile source emissions using EMFAC2014. Table 17 summarizes the 2050 emissions as broken down by emissions category. Construction emissions are included in the summary provided in Table 17 and are expected to be fully amortized by 2060.

Table 17 ESTIMATED 2050 OPERATIONAL GHG EMISSIONS	
Emission Sources	**Emissions (MT CO_2e/year)**
Area Sources	25
Energy Sources	8,117
Vehicular (Mobile) Sources	16,790
Solid Waste Sources	559
Water Sources	5,064
Operational Subtotal	30,555
Construction (Annualized over 30 years)	1,847
TOTAL PROJECT	**32,403**

Source: Model results are provided in Appendices A and B

Through implementation of the Scoping Plan Measures, it is expected that additional reductions would occur. Strengthening of the LCFS and expansion of the zero emissions vehicles program will likely result in further reductions to mobile source emissions. Additionally, the Renewable Portfolios Standard would likely continue beyond the 2030 goal of 50 percent. However, because the design of any such measures has yet to be finalized, any reduction credit associated with these measures has not been included. As such, the analysis presented above reflects a conservative set of assumptions.

6.0 MITIGATION MEASURES

6.1 AIR QUALITY

The following mitigation measure is required to reduce construction emissions of NO_X.

AQ-1 Use of Tier 4 Final Off-Road Equipment. All off-road diesel-powered construction equipment greater than 50 horsepower (HP) used during each building construction phase shall meet USEPA Tier 4 off-road emissions standards. A copy of each unit's certified Tier specification shall be provided to the City of Chula Vista Development Services Department at the time of mobilization of each applicable unit of equipment.

Implementation of the following mitigation measure would help reduce stationary source impacts.

AQ-2 Health Risk Assessment. Prior to the issuance of building permits for any new facility that would have the potential to emit TACs, in accordance with AB 2588, an emissions inventory and health risk assessment shall be prepared. Building permits shall only be issued for facilities that demonstrate TAC emissions below the standards listed in Table 7 (excess cancer risk of 1 in 1 million or 10 in 1 million with T-BACT and non-cancer hazard index of 1.0).

6.2 GREENHOUSE GASES

The proposed Project would not result in a significant impact with respect to GHG emissions. Therefore, no mitigation measure is required

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Appendix A

CalEEMod Output Data

CCV08 - University Innovation District

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	1,800.00	1000sqft	41.32	1,800,000.00	0
University/College (4Yr)	20,000.00	Student	204.09	3,675,949.37	0
Condo/Townhouse	2,000.00	Dwelling Unit	125.00	2,000,000.00	5720
Strip Mall	200.00	1000sqft	4.59	200,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2030
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage set to match total UID area: 375 acres

Construction Phase - No Demolition; Building Construction shortened to acheive 2030 buildout per traffic study.

Architectural Coating - "Super Compliant" Coatings

Vehicle Trips - LLG

Woodstoves - No woodburning devices

Area Coating - Low VOC Coatings per SDAPCD Rule 67

Construction Off-road Equipment Mitigation - USEPA Tier 4 Equipment During Building Construction

Mobile Land Use Mitigation -

Area Mitigation - Low VOC Coatings per SDAPCD Rule 67

Energy Mitigation - Net Zero Energy Development

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	10.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	10.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	10.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	10.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	50
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblAreaCoating	Area_EF_Residential_Exterior	250	50
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	6,200.00	2,200.00
tblConstructionPhase	PhaseEndDate	2/6/2032	5/31/2030
tblConstructionPhase	PhaseStartDate	6/1/2030	9/23/2028
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	1,100.00	0.00
tblFireplaces	NumberNoFireplace	200.00	2,000.00
tblFireplaces	NumberWood	700.00	0.00
tblLandUse	LotAcreage	84.39	204.09
tblProjectCharacteristics	OperationalYear	2014	2030
tblVehicleTrips	ST_TR	7.16	4.89
tblVehicleTrips	ST_TR	1.90	1.69
tblVehicleTrips	ST_TR	42.04	30.35
tblVehicleTrips	ST_TR	1.30	0.71
tblVehicleTrips	SU_TR	6.07	4.14
tblVehicleTrips	SU_TR	1.11	0.99
tblVehicleTrips	SU_TR	20.43	14.75
tblVehicleTrips	WD_TR	6.59	4.50
tblVehicleTrips	WD_TR	8.11	7.20
tblVehicleTrips	WD_TR	44.32	32.00
tblVehicleTrips	WD_TR	2.38	1.30

tblWoodstoves	NumberCatalytic	100.00	0.00
tblWoodstoves	NumberNoncatalytic	100.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.6489	6.9161	5.2876	5.5400e-003	4.8756	0.3638	5.2394	2.3116	0.3347	2.6463	0.0000	510.0136	510.0136	0.1519	0.0000	513.2043
2018	0.6977	7.7790	5.6130	8.3100e-003	2.7097	0.3640	3.0737	1.1205	0.3349	1.4554	0.0000	753.5661	753.5661	0.2299	0.0000	758.3932
2019	0.6451	7.0819	5.3422	8.3100e-003	2.7097	0.3270	3.0367	1.1205	0.3009	1.4214	0.0000	740.8978	740.8978	0.2297	0.0000	745.7224
2020	2.1080	11.1974	25.1546	0.0627	6.0531	0.3118	6.3649	2.0229	0.2891	2.3119	0.0000	4,667.9680	4,667.9680	0.2372	0.0000	4,672.9499
2021	2.5750	11.1838	32.0628	0.0854	4.7635	0.2825	5.0460	1.2855	0.2626	1.5482	0.0000	6,259.1397	6,259.1397	0.2328	0.0000	6,264.0295
2022	2.4398	9.9208	30.5128	0.0850	4.7453	0.2601	5.0054	1.2806	0.2417	1.5224	0.0000	6,182.8581	6,182.8581	0.2263	0.0000	6,187.6109
2023	2.3015	8.8429	29.1747	0.0849	4.7453	0.2431	4.9884	1.2807	0.2258	1.5064	0.0000	6,132.2901	6,132.2901	0.2197	0.0000	6,136.9028
2024	2.1980	8.6463	27.9933	0.0856	4.7818	0.2344	5.0162	1.2905	0.2175	1.5080	0.0000	6,139.8972	6,139.8972	0.2167	0.0000	6,144.4485
2025	2.1101	8.3770	27.0221	0.0852	4.7637	0.2230	4.9866	1.2856	0.2068	1.4924	0.0000	6,082.6614	6,082.6614	0.2121	0.0000	6,087.1144
2026	2.0556	8.2480	26.3904	0.0852	4.7637	0.2219	4.9856	1.2857	0.2058	1.4915	0.0000	6,053.4630	6,053.4630	0.2091	0.0000	6,057.8543
2027	2.0034	8.1588	25.6878	0.0852	4.7638	0.2223	4.9862	1.2857	0.2062	1.4919	0.0000	6,028.4637	6,028.4637	0.2067	0.0000	6,032.8045
2028	2.1325	6.2756	19.5284	0.0655	3.6757	0.1797	3.8554	0.9912	0.1667	1.1578	0.0000	4,600.1925	4,600.1925	0.1777	0.0000	4,603.9231
2029	2.6095	1.4604	4.1000	0.0128	0.7744	0.0665	0.8409	0.2058	0.0617	0.2675	0.0000	842.8700	842.8700	0.1071	0.0000	845.1182
2030	1.1104	0.5131	1.7578	5.6400e-003	0.3234	0.0213	0.3447	0.0859	0.0211	0.1071	0.0000	372.4343	372.4343	0.0158	0.0000	372.7668
Total	**25.6356**	**104.6010**	**265.6272**	**0.7653**	**54.4487**	**3.3214**	**57.7701**	**16.8526**	**3.0755**	**19.9281**	**0.0000**	**55,366.7155**	**55,366.7155**	**2.6727**	**0.0000**	**55,422.8427**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.1197	1.0566	1.2803	5.5400e-003	2.2044	0.0777	2.2821	1.0430	0.0715	1.1145	0.0000	161.3175	161.3175	0.0451	0.0000	162.2645
2018	0.0572	0.4838	0.7023	8.3100e-003	1.2309	0.0332	1.2640	0.5073	0.0306	0.5378	0.0000	92.1046	92.1046	0.0239	0.0000	92.6073
2019	0.0508	0.4320	0.6889	8.3100e-003	1.2309	0.0279	1.2587	0.5073	0.0257	0.5330	0.0000	90.2124	90.2124	0.0239	0.0000	90.7137
2020	1.8060	8.1490	23.8808	0.0627	4.5743	0.1528	4.7271	1.4097	0.1409	1.5506	0.0000	4,477.7577	4,477.7577	0.1757	0.0000	4,481.4477
2021	2.4048	9.6092	32.1580	0.0854	4.7635	0.1877	4.9512	1.2855	0.1732	1.4588	0.0000	6,259.1394	6,259.1394	0.2328	0.0000	6,264.0291
2022	2.2903	8.5363	30.6298	0.0850	4.7453	0.1801	4.9254	1.2806	0.1663	1.4469	0.0000	6,182.8577	6,182.8577	0.2263	0.0000	6,187.6106
2023	2.1663	7.5855	29.3056	0.0849	4.7453	0.1740	4.9193	1.2807	0.1606	1.4413	0.0000	6,132.2898	6,132.2898	0.2197	0.0000	6,136.9024
2024	2.0733	7.4815	28.1362	0.0856	4.7818	0.1739	4.9557	1.2905	0.1605	1.4510	0.0000	6,139.8969	6,139.8969	0.2167	0.0000	6,144.4481
2025	1.9967	7.3171	27.1736	0.0852	4.7637	0.1710	4.9347	1.2856	0.1579	1.4435	0.0000	6,082.6611	6,082.6611	0.2121	0.0000	6,087.1140
2026	1.9421	7.1881	26.5419	0.0852	4.7637	0.1700	4.9337	1.2857	0.1569	1.4426	0.0000	6,053.4626	6,053.4626	0.2091	0.0000	6,057.8540
2027	1.8900	7.0988	25.8393	0.0852	4.7638	0.1704	4.9342	1.2857	0.1573	1.4430	0.0000	6,028.4634	6,028.4634	0.2067	0.0000	6,032.8042
2028	2.0125	5.1692	19.0756	0.0655	3.6757	0.1257	3.8014	0.9912	0.1161	1.1072	0.0000	4,522.6791	4,522.6791	0.1550	0.0000	4,525.9337
2029	2.4701	0.2119	2.0006	0.0128	0.7744	6.1100e-003	0.7805	0.2058	5.6600e-003	0.2115	0.0000	553.8569	553.8569	0.0225	0.0000	554.3303
2030	1.0294	0.0860	0.8141	5.6400e-003	0.3234	2.5600e-003	0.3260	0.0859	2.3800e-003	0.0883	0.0000	229.9716	229.9716	9.2400e-003	0.0000	230.1658
Total	**22.3092**	**70.4050**	**248.2269**	**0.7653**	**47.3411**	**1.6528**	**48.9939**	**13.7444**	**1.5255**	**15.2698**	**0.0000**	**53,006.6704**	**53,006.6704**	**1.9788**	**0.0000**	**53,048.2253**

	ROG	NOx	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	**12.98**	**32.69**	**6.55**	**0.00**	**13.05**	**50.24**	**15.19**	**18.44**	**50.40**	**23.38**	**0.00**	**4.26**	**4.26**	**25.96**	**0.00**	**4.28**

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	32.3810	0.1726	15.0121	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	24.6507	24.6507	0.0241	0.0000	25.1573
Energy	1.0182	9.1756	7.1808	0.0555		0.7035	0.7035		0.7035	0.7035	0.0000	31,087.2710	31,087.2710	1.0388	0.3597	31,220.5970
Mobile	17.4410	30.4015	166.6695	0.6149	42.0040	0.6872	42.6912	11.2333	0.6347	11.8680	0.0000	39,315.7167	39,315.7167	1.2477	0.0000	39,341.9185
Waste						0.0000	0.0000		0.0000	0.0000	998.0639	0.0000	998.0639	58.9839	0.0000	2,236.7256
Water						0.0000	0.0000		0.0000	0.0000	340.4114	5,140.4234	5,480.8348	35.1704	0.8684	6,488.6089
Total	**50.8402**	**39.7497**	**188.8624**	**0.6712**	**42.0040**	**1.4738**	**43.4778**	**11.2333**	**1.4212**	**12.6545**	**1,338.4753**	**75,568.0618**	**76,906.5371**	**96.4650**	**1.2281**	**79,313.0073**

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	32.3810	0.1726	15.0121	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	24.6507	24.6507	0.0241	0.0000	25.1573
Energy	0.8152	7.3459	5.7468	0.0445		0.5633	0.5633		0.5633	0.5633	0.0000	8,067.9772	8,067.9772	0.1546	0.1479	8,117.0776
Mobile	14.6395	18.5241	111.8090	0.3180	21.0277	0.3884	21.4161	5.6235	0.3589	5.9824	0.0000	20,327.5698	20,327.5698	0.6835	0.0000	20,341.9230
Waste						0.0000	0.0000		0.0000	0.0000	249.5160	0.0000	249.5160	14.7460	0.0000	559.1814
Water						0.0000	0.0000		0.0000	0.0000	272.3291	3,985.5565	4,257.8856	28.1312	0.6936	5,063.6704
Total	**47.8357**	**26.0426**	**132.5680**	**0.3633**	**21.0277**	**1.0347**	**22.0624**	**5.6235**	**1.0052**	**6.6287**	**521.8451**	**32,405.7542**	**32,927.5993**	**43.7395**	**0.8416**	**34,107.0097**

	ROG	NOx	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	**5.91**	**34.48**	**29.81**	**45.87**	**49.94**	**29.79**	**49.26**	**49.94**	**29.27**	**47.62**	**61.01**	**57.12**	**57.18**	**54.66**	**31.47**	**57.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2017	12/1/2017	5	240	
2	Grading	Grading	12/2/2017	4/17/2020	5	620	
3	Building Construction	Building Construction	4/18/2020	9/22/2028	5	2200	
4	Paving	Paving	9/23/2028	5/31/2030	5	440	
5	Architectural Coating	Architectural Coating	9/23/2028	5/31/2030	5	440	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1550

Acres of Paving: 0

Residential Indoor: 4,050,000; Residential Outdoor: 1,350,000; Non-Residential Indoor: 8,513,924; Non-Residential Outdoor: 2,837,975 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	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	125	0.42
Paving	Paving Equipment	2	8.00	130	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	3,624.00	1,144.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	725.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2017

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					2.1680	0.0000	2.1680	1.1917	0.0000	1.1917	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5806	6.2104	4.7276	4.6900e-003		0.3305	0.3305		0.3041	0.3041	0.0000	435.7846	435.7846	0.1335	0.0000	438.5886
Total	**0.5806**	**6.2104**	**4.7276**	**4.6900e-003**	**2.1680**	**0.3305**	**2.4985**	**1.1917**	**0.3041**	**1.4958**	**0.0000**	**435.7846**	**435.7846**	**0.1335**	**0.0000**	**438.5886**

3.2 Site Preparation - 2017

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	6.7100e-003	8.8900e-003	0.0841	2.1000e-004	0.0173	1.3000e-004	0.0175	4.6000e-003	1.2000e-004	4.7200e-003	0.0000	15.5182	15.5182	7.9000e-004	0.0000	15.5348
Total	**6.7100e-003**	**8.8900e-003**	**0.0841**	**2.1000e-004**	**0.0173**	**1.3000e-004**	**0.0175**	**4.6000e-003**	**1.2000e-004**	**4.7200e-003**	**0.0000**	**15.5182**	**15.5182**	**7.9000e-004**	**0.0000**	**15.5348**

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					0.9756	0.0000	0.9756	0.5363	0.0000	0.5363	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1079	1.0050	1.1408	4.6900e-003		0.0744	0.0744		0.0685	0.0685	0.0000	138.5879	138.5879	0.0425	0.0000	139.4796
Total	**0.1079**	**1.0050**	**1.1408**	**4.6900e-003**	**0.9756**	**0.0744**	**1.0500**	**0.5363**	**0.0685**	**0.6048**	**0.0000**	**138.5879**	**138.5879**	**0.0425**	**0.0000**	**139.4796**

3.2 Site Preparation - 2017

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	6.7100e-003	8.8900e-003	0.0841	2.1000e-004	0.0173	1.3000e-004	0.0175	4.6000e-003	1.2000e-004	4.7200e-003	0.0000	15.5182	15.5182	7.9000e-004	0.0000	15.5348
Total	**6.7100e-003**	**8.8900e-003**	**0.0841**	**2.1000e-004**	**0.0173**	**1.3000e-004**	**0.0175**	**4.6000e-003**	**1.2000e-004**	**4.7200e-003**	**0.0000**	**15.5182**	**15.5182**	**7.9000e-004**	**0.0000**	**15.5348**

3.3 Grading - 2017

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					2.6887	0.0000	2.6887	1.1149	0.0000	1.1149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0610	0.6959	0.4681	6.2000e-004		0.0332	0.0332		0.0305	0.0305	0.0000	57.2739	57.2739	0.0176	0.0000	57.6424
Total	**0.0610**	**0.6959**	**0.4681**	**6.2000e-004**	**2.6887**	**0.0332**	**2.7219**	**1.1149**	**0.0305**	**1.1454**	**0.0000**	**57.2739**	**57.2739**	**0.0176**	**0.0000**	**57.6424**

3.3 Grading - 2017

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	6.2000e-004	8.2000e-004	7.7900e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4369	1.4369	7.0000e-005	0.0000	1.4384
Total	**6.2000e-004**	**8.2000e-004**	**7.7900e-003**	**2.0000e-005**	**1.6000e-003**	**1.0000e-005**	**1.6200e-003**	**4.3000e-004**	**1.0000e-005**	**4.4000e-004**	**0.0000**	**1.4369**	**1.4369**	**7.0000e-005**	**0.0000**	**1.4384**

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					1.2099	0.0000	1.2099	0.5017	0.0000	0.5017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-003	0.0419	0.0475	6.2000e-004		3.1000e-003	3.1000e-003		2.8600e-003	2.8600e-003	0.0000	5.7745	5.7745	1.7700e-003	0.0000	5.8117
Total	**4.5000e-003**	**0.0419**	**0.0475**	**6.2000e-004**	**1.2099**	**3.1000e-003**	**1.2130**	**0.5017**	**2.8600e-003**	**0.5046**	**0.0000**	**5.7745**	**5.7745**	**1.7700e-003**	**0.0000**	**5.8117**

3.3 Grading - 2017

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	6.2000e-004	8.2000e-004	7.7900e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4369	1.4369	7.0000e-005	0.0000	1.4384
Total	**6.2000e-004**	**8.2000e-004**	**7.7900e-003**	**2.0000e-005**	**1.6000e-003**	**1.0000e-005**	**1.6200e-003**	**4.3000e-004**	**1.0000e-005**	**4.4000e-004**	**0.0000**	**1.4369**	**1.4369**	**7.0000e-005**	**0.0000**	**1.4384**

3.3 Grading - 2018

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					2.6887	0.0000	2.6887	1.1149	0.0000	1.1149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6903	7.7692	5.5210	8.0500e-003		0.3638	0.3638		0.3347	0.3347	0.0000	735.5190	735.5190	0.2290	0.0000	740.3275
Total	**0.6903**	**7.7692**	**5.5210**	**8.0500e-003**	**2.6887**	**0.3638**	**3.0526**	**1.1149**	**0.3347**	**1.4497**	**0.0000**	**735.5190**	**735.5190**	**0.2290**	**0.0000**	**740.3275**

3.3 Grading - 2018

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	7.3700e-003	9.8100e-003	0.0919	2.6000e-004	0.0209	1.5000e-004	0.0211	5.5600e-003	1.4000e-004	5.7000e-003	0.0000	18.0471	18.0471	8.9000e-004	0.0000	18.0657
Total	**7.3700e-003**	**9.8100e-003**	**0.0919**	**2.6000e-004**	**0.0209**	**1.5000e-004**	**0.0211**	**5.5600e-003**	**1.4000e-004**	**5.7000e-003**	**0.0000**	**18.0471**	**18.0471**	**8.9000e-004**	**0.0000**	**18.0657**

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					1.2099	0.0000	1.2099	0.5017	0.0000	0.5017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0498	0.4740	0.6103	8.0500e-003		0.0330	0.0330		0.0304	0.0304	0.0000	74.0575	74.0575	0.0231	0.0000	74.5417
Total	**0.0498**	**0.4740**	**0.6103**	**8.0500e-003**	**1.2099**	**0.0330**	**1.2429**	**0.5017**	**0.0304**	**0.5321**	**0.0000**	**74.0575**	**74.0575**	**0.0231**	**0.0000**	**74.5417**

3.3 Grading - 2018

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	7.3700e-003	9.8100e-003	0.0919	2.6000e-004	0.0209	1.5000e-004	0.0211	5.5600e-003	1.4000e-004	5.7000e-003	0.0000	18.0471	18.0471	8.9000e-004	0.0000	18.0657
Total	**7.3700e-003**	**9.8100e-003**	**0.0919**	**2.6000e-004**	**0.0209**	**1.5000e-004**	**0.0211**	**5.5600e-003**	**1.4000e-004**	**5.7000e-003**	**0.0000**	**18.0471**	**18.0471**	**8.9000e-004**	**0.0000**	**18.0657**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6887	0.0000	2.6887	1.1149	0.0000	1.1149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6383	7.0728	5.2577	8.0500e-003		0.3269	0.3269		0.3007	0.3007	0.0000	723.5036	723.5036	0.2289	0.0000	728.3107
Total	**0.6383**	**7.0728**	**5.2577**	**8.0500e-003**	**2.6887**	**0.3269**	**3.0156**	**1.1149**	**0.3007**	**1.4157**	**0.0000**	**723.5036**	**723.5036**	**0.2289**	**0.0000**	**728.3107**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8400e-003	9.0600e-003	0.0845	2.6000e-004	0.0209	1.5000e-004	0.0211	5.5600e-003	1.4000e-004	5.7000e-003	0.0000	17.3942	17.3942	8.3000e-004	0.0000	17.4117
Total	**6.8400e-003**	**9.0600e-003**	**0.0845**	**2.6000e-004**	**0.0209**	**1.5000e-004**	**0.0211**	**5.5600e-003**	**1.4000e-004**	**5.7000e-003**	**0.0000**	**17.3942**	**17.3942**	**8.3000e-004**	**0.0000**	**17.4117**

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					1.2099	0.0000	1.2099	0.5017	0.0000	0.5017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0440	0.4229	0.6044	8.0500e-003		0.0277	0.0277		0.0255	0.0255	0.0000	72.8182	72.8182	0.0230	0.0000	73.3020
Total	**0.0440**	**0.4229**	**0.6044**	**8.0500e-003**	**1.2099**	**0.0277**	**1.2377**	**0.5017**	**0.0255**	**0.5273**	**0.0000**	**72.8182**	**72.8182**	**0.0230**	**0.0000**	**73.3020**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8400e-003	9.0600e-003	0.0845	2.6000e-004	0.0209	1.5000e-004	0.0211	5.5600e-003	1.4000e-004	5.7000e-003	0.0000	17.3942	17.3942	8.3000e-004	0.0000	17.4117
Total	**6.8400e-003**	**9.0600e-003**	**0.0845**	**2.6000e-004**	**0.0209**	**1.5000e-004**	**0.0211**	**5.5600e-003**	**1.4000e-004**	**5.7000e-003**	**0.0000**	**17.3942**	**17.3942**	**8.3000e-004**	**0.0000**	**17.4117**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6887	0.0000	2.6887	1.1149	0.0000	1.1149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1775	1.9260	1.4986	2.4100e-003		0.0882	0.0882		0.0812	0.0812	0.0000	211.4926	211.4926	0.0684	0.0000	212.9290
Total	**0.1775**	**1.9260**	**1.4986**	**2.4100e-003**	**2.6887**	**0.0882**	**2.7770**	**1.1149**	**0.0812**	**1.1961**	**0.0000**	**211.4926**	**211.4926**	**0.0684**	**0.0000**	**212.9290**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9300e-003	2.5300e-003	0.0236	8.0000e-005	6.2500e-003	5.0000e-005	6.3000e-003	1.6600e-003	4.0000e-005	1.7000e-003	0.0000	4.9888	4.9888	2.4000e-004	0.0000	4.9938
Total	**1.9300e-003**	**2.5300e-003**	**0.0236**	**8.0000e-005**	**6.2500e-003**	**5.0000e-005**	**6.3000e-003**	**1.6600e-003**	**4.0000e-005**	**1.7000e-003**	**0.0000**	**4.9888**	**4.9888**	**2.4000e-004**	**0.0000**	**4.9938**

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					1.2099	0.0000	1.2099	0.5017	0.0000	0.5017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0119	0.1143	0.1794	2.4100e-003		7.0900e-003	7.0900e-003		6.5300e-003	6.5300e-003	0.0000	21.2825	21.2825	6.8800e-003	0.0000	21.4270
Total	**0.0119**	**0.1143**	**0.1794**	**2.4100e-003**	**1.2099**	**7.0900e-003**	**1.2170**	**0.5017**	**6.5300e-003**	**0.5082**	**0.0000**	**21.2825**	**21.2825**	**6.8800e-003**	**0.0000**	**21.4270**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9300e-003	2.5300e-003	0.0236	8.0000e-005	6.2500e-003	5.0000e-005	6.3000e-003	1.6600e-003	4.0000e-005	1.7000e-003	0.0000	4.9888	4.9888	2.4000e-004	0.0000	4.9938
Total	**1.9300e-003**	**2.5300e-003**	**0.0236**	**8.0000e-005**	**6.2500e-003**	**5.0000e-005**	**6.3000e-003**	**1.6600e-003**	**4.0000e-005**	**1.7000e-003**	**0.0000**	**4.9888**	**4.9888**	**2.4000e-004**	**0.0000**	**4.9938**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1942	1.7557	1.5464	2.4700e-003		0.1024	0.1024		0.0963	0.0963	0.0000	212.1979	212.1979	0.0517	0.0000	213.2836
Total	**0.1942**	**1.7557**	**1.5464**	**2.4700e-003**		**0.1024**	**0.1024**		**0.0963**	**0.0963**	**0.0000**	**212.1979**	**212.1979**	**0.0517**	**0.0000**	**213.2836**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9081	6.4317	11.9932	0.0248	0.6845	0.1017	0.7862	0.1958	0.0936	0.2894	0.0000	2,106.8501	2,106.8501	0.0156	0.0000	2,107.1774
Worker	0.8262	1.0815	10.0928	0.0329	2.6737	0.0194	2.6931	0.7105	0.0180	0.7285	0.0000	2,132.4386	2,132.4386	0.1013	0.0000	2,134.5662
Total	**1.7344**	**7.5132**	**22.0860**	**0.0577**	**3.3581**	**0.1212**	**3.4793**	**0.9063**	**0.1116**	**1.0179**	**0.0000**	**4,239.2887**	**4,239.2887**	**0.1169**	**0.0000**	**4,241.7436**

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	0.0578	0.5191	1.5917	2.4700e-003		0.0245	0.0245		0.0227	0.0227	0.0000	212.1977	212.1977	0.0517	0.0000	213.2833
Total	**0.0578**	**0.5191**	**1.5917**	**2.4700e-003**		**0.0245**	**0.0245**		**0.0227**	**0.0227**	**0.0000**	**212.1977**	**212.1977**	**0.0517**	**0.0000**	**213.2833**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9081	6.4317	11.9932	0.0248	0.6845	0.1017	0.7862	0.1958	0.0936	0.2894	0.0000	2,106.8501	2,106.8501	0.0156	0.0000	2,107.1774
Worker	0.8262	1.0815	10.0928	0.0329	2.6737	0.0194	2.6931	0.7105	0.0180	0.7285	0.0000	2,132.4386	2,132.4386	0.1013	0.0000	2,134.5662
Total	**1.7344**	**7.5132**	**22.0860**	**0.0577**	**3.3581**	**0.1212**	**3.4793**	**0.9063**	**0.1116**	**1.0179**	**0.0000**	**4,239.2887**	**4,239.2887**	**0.1169**	**0.0000**	**4,241.7436**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2629	2.1582	3.5000e-003		0.1246	0.1246		0.1172	0.1172	0.0000	301.0339	301.0339	0.0725	0.0000	302.5568
Total	**0.2471**	**2.2629**	**2.1582**	**3.5000e-003**		**0.1246**	**0.1246**		**0.1172**	**0.1172**	**0.0000**	**301.0339**	**301.0339**	**0.0725**	**0.0000**	**302.5568**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2121	7.4807	16.3321	0.0352	0.9710	0.1299	1.1009	0.2778	0.1195	0.3973	0.0000	2,983.7516	2,983.7516	0.0220	0.0000	2,984.2143
Worker	1.1158	1.4402	13.5725	0.0467	3.7925	0.0280	3.8205	1.0078	0.0260	1.0338	0.0000	2,974.3543	2,974.3543	0.1383	0.0000	2,977.2584
Total	**2.3280**	**8.9209**	**29.9046**	**0.0819**	**4.7635**	**0.1579**	**4.9214**	**1.2855**	**0.1455**	**1.4310**	**0.0000**	**5,958.1059**	**5,958.1059**	**0.1603**	**0.0000**	**5,961.4726**

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	0.0769	0.6882	2.2534	3.5000e-003		0.0298	0.0298		0.0277	0.0277	0.0000	301.0335	301.0335	0.0725	0.0000	302.5565
Total	**0.0769**	**0.6882**	**2.2534**	**3.5000e-003**		**0.0298**	**0.0298**		**0.0277**	**0.0277**	**0.0000**	**301.0335**	**301.0335**	**0.0725**	**0.0000**	**302.5565**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2121	7.4807	16.3321	0.0352	0.9710	0.1299	1.1009	0.2778	0.1195	0.3973	0.0000	2,983.7516	2,983.7516	0.0220	0.0000	2,984.2143
Worker	1.1158	1.4402	13.5725	0.0467	3.7925	0.0280	3.8205	1.0078	0.0260	1.0338	0.0000	2,974.3543	2,974.3543	0.1383	0.0000	2,977.2584
Total	**2.3280**	**8.9209**	**29.9046**	**0.0819**	**4.7635**	**0.1579**	**4.9214**	**1.2855**	**0.1455**	**1.4310**	**0.0000**	**5,958.1059**	**5,958.1059**	**0.1603**	**0.0000**	**5,961.4726**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2209	2.0197	2.1226	3.4900e-003		0.1047	0.1047		0.0986	0.0986	0.0000	299.9946	299.9946	0.0718	0.0000	301.5017
Total	**0.2209**	**2.0197**	**2.1226**	**3.4900e-003**		**0.1047**	**0.1047**		**0.0986**	**0.0986**	**0.0000**	**299.9946**	**299.9946**	**0.0718**	**0.0000**	**301.5017**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1599	6.5459	15.6313	0.0350	0.9673	0.1273	1.0946	0.2767	0.1171	0.3939	0.0000	2,969.2466	2,969.2466	0.0224	0.0000	2,969.7171
Worker	1.0590	1.3552	12.7589	0.0465	3.7780	0.0281	3.8061	1.0039	0.0261	1.0300	0.0000	2,913.6168	2,913.6168	0.1322	0.0000	2,916.3922
Total	**2.2189**	**7.9011**	**28.3902**	**0.0815**	**4.7453**	**0.1554**	**4.9007**	**1.2806**	**0.1432**	**1.4238**	**0.0000**	**5,882.8635**	**5,882.8635**	**0.1546**	**0.0000**	**5,886.1092**

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	0.0714	0.6352	2.2396	3.4900e-003		0.0247	0.0247		0.0231	0.0231	0.0000	299.9943	299.9943	0.0718	0.0000	301.5013
Total	**0.0714**	**0.6352**	**2.2396**	**3.4900e-003**		**0.0247**	**0.0247**		**0.0231**	**0.0231**	**0.0000**	**299.9943**	**299.9943**	**0.0718**	**0.0000**	**301.5013**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1599	6.5459	15.6313	0.0350	0.9673	0.1273	1.0946	0.2767	0.1171	0.3939	0.0000	2,969.2466	2,969.2466	0.0224	0.0000	2,969.7171
Worker	1.0590	1.3552	12.7589	0.0465	3.7780	0.0281	3.8061	1.0039	0.0261	1.0300	0.0000	2,913.6168	2,913.6168	0.1322	0.0000	2,916.3922
Total	**2.2189**	**7.9011**	**28.3902**	**0.0815**	**4.7453**	**0.1554**	**4.9007**	**1.2806**	**0.1432**	**1.4238**	**0.0000**	**5,882.8635**	**5,882.8635**	**0.1546**	**0.0000**	**5,886.1092**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2036	1.8606	2.1072	3.4900e-003		0.0906	0.0906		0.0852	0.0852	0.0000	300.0980	300.0980	0.0713	0.0000	301.5949
Total	**0.2036**	**1.8606**	**2.1072**	**3.4900e-003**		**0.0906**	**0.0906**		**0.0852**	**0.0852**	**0.0000**	**300.0980**	**300.0980**	**0.0713**	**0.0000**	**301.5949**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0871	5.6973	14.9914	0.0349	0.9673	0.1243	1.0916	0.2767	0.1143	0.3911	0.0000	2,962.5983	2,962.5983	0.0210	0.0000	2,963.0400
Worker	1.0108	1.2850	12.0761	0.0465	3.7780	0.0283	3.8063	1.0039	0.0262	1.0302	0.0000	2,869.5939	2,869.5939	0.1273	0.0000	2,872.2678
Total	**2.0979**	**6.9823**	**27.0675**	**0.0814**	**4.7453**	**0.1525**	**4.8979**	**1.2807**	**0.1406**	**1.4212**	**0.0000**	**5,832.1921**	**5,832.1921**	**0.1484**	**0.0000**	**5,835.3078**

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	0.0684	0.6032	2.2381	3.4900e-003		0.0215	0.0215		0.0201	0.0201	0.0000	300.0976	300.0976	0.0713	0.0000	301.5946
Total	**0.0684**	**0.6032**	**2.2381**	**3.4900e-003**		**0.0215**	**0.0215**		**0.0201**	**0.0201**	**0.0000**	**300.0976**	**300.0976**	**0.0713**	**0.0000**	**301.5946**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0871	5.6973	14.9914	0.0349	0.9673	0.1243	1.0916	0.2767	0.1143	0.3911	0.0000	2,962.5983	2,962.5983	0.0210	0.0000	2,963.0400
Worker	1.0108	1.2850	12.0761	0.0465	3.7780	0.0283	3.8063	1.0039	0.0262	1.0302	0.0000	2,869.5939	2,869.5939	0.1273	0.0000	2,872.2678
Total	**2.0979**	**6.9823**	**27.0675**	**0.0814**	**4.7453**	**0.1525**	**4.8979**	**1.2807**	**0.1406**	**1.4212**	**0.0000**	**5,832.1921**	**5,832.1921**	**0.1484**	**0.0000**	**5,835.3078**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1920	1.7524	2.1135	3.5200e-003		0.0800	0.0800		0.0752	0.0752	0.0000	302.4646	302.4646	0.0714	0.0000	303.9643
Total	**0.1920**	**1.7524**	**2.1135**	**3.5200e-003**		**0.0800**	**0.0800**		**0.0752**	**0.0752**	**0.0000**	**302.4646**	**302.4646**	**0.0714**	**0.0000**	**303.9643**

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0320	5.6608	14.2907	0.0352	0.9748	0.1257	1.1005	0.2789	0.1156	0.3945	0.0000	2,985.1952	2,985.1952	0.0213	0.0000	2,985.6418
Worker	0.9741	1.2330	11.5891	0.0469	3.8071	0.0287	3.8358	1.0116	0.0267	1.0383	0.0000	2,852.2375	2,852.2375	0.1240	0.0000	2,854.8424
Total	**2.0061**	**6.8938**	**25.8799**	**0.0820**	**4.7818**	**0.1544**	**4.9362**	**1.2905**	**0.1423**	**1.4328**	**0.0000**	**5,837.4327**	**5,837.4327**	**0.1453**	**0.0000**	**5,840.4842**

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	0.0672	0.5877	2.2563	3.5200e-003		0.0195	0.0195		0.0182	0.0182	0.0000	302.4642	302.4642	0.0714	0.0000	303.9639
Total	**0.0672**	**0.5877**	**2.2563**	**3.5200e-003**		**0.0195**	**0.0195**		**0.0182**	**0.0182**	**0.0000**	**302.4642**	**302.4642**	**0.0714**	**0.0000**	**303.9639**

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0320	5.6608	14.2907	0.0352	0.9748	0.1257	1.1005	0.2789	0.1156	0.3945	0.0000	2,985.1952	2,985.1952	0.0213	0.0000	2,985.6418
Worker	0.9741	1.2330	11.5891	0.0469	3.8071	0.0287	3.8358	1.0116	0.0267	1.0383	0.0000	2,852.2375	2,852.2375	0.1240	0.0000	2,854.8424
Total	**2.0061**	**6.8938**	**25.8799**	**0.0820**	**4.7818**	**0.1544**	**4.9362**	**1.2905**	**0.1423**	**1.4328**	**0.0000**	**5,837.4327**	**5,837.4327**	**0.1453**	**0.0000**	**5,840.4842**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9996	5.5803	13.8607	0.0350	0.9711	0.1256	1.0967	0.2778	0.1155	0.3934	0.0000	2,974.0536	2,974.0536	0.0212	0.0000	2,974.4997
Worker	0.9329	1.1773	11.0666	0.0467	3.7925	0.0289	3.8214	1.0078	0.0268	1.0346	0.0000	2,807.2060	2,807.2060	0.1201	0.0000	2,809.7273
Total	**1.9325**	**6.7576**	**24.9273**	**0.0817**	**4.7637**	**0.1545**	**4.9181**	**1.2856**	**0.1423**	**1.4280**	**0.0000**	**5,781.2596**	**5,781.2596**	**0.1413**	**0.0000**	**5,784.2270**

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	0.0642	0.5595	2.2463	3.5000e-003		0.0166	0.0166		0.0156	0.0156	0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total	**0.0642**	**0.5595**	**2.2463**	**3.5000e-003**		**0.0166**	**0.0166**		**0.0156**	**0.0156**	**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9996	5.5803	13.8607	0.0350	0.9711	0.1256	1.0967	0.2778	0.1155	0.3934	0.0000	2,974.0536	2,974.0536	0.0212	0.0000	2,974.4997
Worker	0.9329	1.1773	11.0666	0.0467	3.7925	0.0289	3.8214	1.0078	0.0268	1.0346	0.0000	2,807.2060	2,807.2060	0.1201	0.0000	2,809.7273
Total	**1.9325**	**6.7576**	**24.9273**	**0.0817**	**4.7637**	**0.1545**	**4.9181**	**1.2856**	**0.1423**	**1.4280**	**0.0000**	**5,781.2596**	**5,781.2596**	**0.1413**	**0.0000**	**5,784.2270**

3.4 Building Construction - 2026

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	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

3.4 Building Construction - 2026

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	0.9757	5.4912	13.5970	0.0350	0.9712	0.1242	1.0954	0.2779	0.1143	0.3921	0.0000	2,974.3059	2,974.3059	0.0211	0.0000	2,974.7487
Worker	0.9022	1.1374	10.6986	0.0467	3.7925	0.0292	3.8217	1.0078	0.0271	1.0349	0.0000	2,777.7551	2,777.7551	0.1173	0.0000	2,780.2182
Total	**1.8779**	**6.6286**	**24.2956**	**0.0817**	**4.7637**	**0.1534**	**4.9171**	**1.2856**	**0.1414**	**1.4270**	**0.0000**	**5,752.0611**	**5,752.0611**	**0.1384**	**0.0000**	**5,754.9669**

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	0.0642	0.5595	2.2463	3.5000e-003		0.0166	0.0166		0.0156	0.0156	0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total	**0.0642**	**0.5595**	**2.2463**	**3.5000e-003**		**0.0166**	**0.0166**		**0.0156**	**0.0156**	**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

3.4 Building Construction - 2026

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	0.9757	5.4912	13.5970	0.0350	0.9712	0.1242	1.0954	0.2779	0.1143	0.3921	0.0000	2,974.3059	2,974.3059	0.0211	0.0000	2,974.7487
Worker	0.9022	1.1374	10.6986	0.0467	3.7925	0.0292	3.8217	1.0078	0.0271	1.0349	0.0000	2,777.7551	2,777.7551	0.1173	0.0000	2,780.2182
Total	**1.8779**	**6.6286**	**24.2956**	**0.0817**	**4.7637**	**0.1534**	**4.9171**	**1.2856**	**0.1414**	**1.4270**	**0.0000**	**5,752.0611**	**5,752.0611**	**0.1384**	**0.0000**	**5,754.9669**

3.4 Building Construction - 2027

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	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

3.4 Building Construction - 2027

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	0.9519	5.4361	13.2190	0.0350	0.9713	0.1244	1.0957	0.2779	0.1144	0.3923	0.0000	2,974.6653	2,974.6653	0.0211	0.0000	2,975.1088
Worker	0.8738	1.1032	10.3740	0.0467	3.7925	0.0295	3.8220	1.0078	0.0273	1.0351	0.0000	2,752.3965	2,752.3965	0.1149	0.0000	2,754.8084
Total	**1.8257**	**6.5393**	**23.5930**	**0.0817**	**4.7638**	**0.1538**	**4.9177**	**1.2857**	**0.1418**	**1.4274**	**0.0000**	**5,727.0618**	**5,727.0618**	**0.1360**	**0.0000**	**5,729.9171**

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	0.0642	0.5595	2.2463	3.5000e-003		0.0166	0.0166		0.0156	0.0156	0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total	**0.0642**	**0.5595**	**2.2463**	**3.5000e-003**		**0.0166**	**0.0166**		**0.0156**	**0.0156**	**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

3.4 Building Construction - 2027

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	0.9519	5.4361	13.2190	0.0350	0.9713	0.1244	1.0957	0.2779	0.1144	0.3923	0.0000	2,974.6653	2,974.6653	0.0211	0.0000	2,975.1088
Worker	0.8738	1.1032	10.3740	0.0467	3.7925	0.0295	3.8220	1.0078	0.0273	1.0351	0.0000	2,752.3965	2,752.3965	0.1149	0.0000	2,754.8084
Total	**1.8257**	**6.5393**	**23.5930**	**0.0817**	**4.7638**	**0.1538**	**4.9177**	**1.2857**	**0.1418**	**1.4274**	**0.0000**	**5,727.0618**	**5,727.0618**	**0.1360**	**0.0000**	**5,729.9171**

3.4 Building Construction - 2028

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	0.1293	1.1789	1.5249	2.5500e-003		0.0499	0.0499		0.0469	0.0469	0.0000	219.4113	219.4113	0.0515	0.0000	220.4928
Total	**0.1293**	**1.1789**	**1.5249**	**2.5500e-003**		**0.0499**	**0.0499**		**0.0469**	**0.0469**	**0.0000**	**219.4113**	**219.4113**	**0.0515**	**0.0000**	**220.4928**

3.4 Building Construction - 2028

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	0.6858	3.9243	9.5504	0.0255	0.7072	0.0904	0.7975	0.2023	0.0831	0.2855	0.0000	2,165.7728	2,165.7728	0.0154	0.0000	2,166.0954
Worker	0.6160	0.7790	7.3379	0.0340	2.7608	0.0216	2.7825	0.7336	0.0201	0.7537	0.0000	1,987.9434	1,987.9434	0.0820	0.0000	1,989.6644
Total	**1.3018**	**4.7032**	**16.8884**	**0.0595**	**3.4680**	**0.1120**	**3.5800**	**0.9360**	**0.1032**	**1.0392**	**0.0000**	**4,153.7162**	**4,153.7162**	**0.0973**	**0.0000**	**4,155.7598**

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	0.0468	0.4073	1.6353	2.5500e-003		0.0121	0.0121		0.0113	0.0113	0.0000	219.4111	219.4111	0.0515	0.0000	220.4925
Total	**0.0468**	**0.4073**	**1.6353**	**2.5500e-003**		**0.0121**	**0.0121**		**0.0113**	**0.0113**	**0.0000**	**219.4111**	**219.4111**	**0.0515**	**0.0000**	**220.4925**

3.4 Building Construction - 2028

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	0.6858	3.9243	9.5504	0.0255	0.7072	0.0904	0.7975	0.2023	0.0831	0.2855	0.0000	2,165.7728	2,165.7728	0.0154	0.0000	2,166.0954
Worker	0.6160	0.7790	7.3379	0.0340	2.7608	0.0216	2.7825	0.7336	0.0201	0.7537	0.0000	1,987.9434	1,987.9434	0.0820	0.0000	1,989.6644
Total	**1.3018**	**4.7032**	**16.8884**	**0.0595**	**3.4680**	**0.1120**	**3.5800**	**0.9360**	**0.1032**	**1.0392**	**0.0000**	**4,153.7162**	**4,153.7162**	**0.0973**	**0.0000**	**4,155.7598**

3.5 Paving - 2028

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	0.0314	0.2948	0.4997	7.8000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	68.5767	68.5767	0.0222	0.0000	69.0425
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0314**	**0.2948**	**0.4997**	**7.8000e-004**		**0.0144**	**0.0144**		**0.0132**	**0.0132**	**0.0000**	**68.5767**	**68.5767**	**0.0222**	**0.0000**	**69.0425**

3.5 Paving - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	1.1900e-003	0.0112	5.0000e-005	4.2100e-003	3.0000e-005	4.2400e-003	1.1200e-003	3.0000e-005	1.1500e-003	0.0000	3.0315	3.0315	1.2000e-004	0.0000	3.0341
Total	**9.4000e-004**	**1.1900e-003**	**0.0112**	**5.0000e-005**	**4.2100e-003**	**3.0000e-005**	**4.2400e-003**	**1.1200e-003**	**3.0000e-005**	**1.1500e-003**	**0.0000**	**3.0315**	**3.0315**	**1.2000e-004**	**0.0000**	**3.0341**

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				7.8000e-004		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**			**7.8000e-004**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Paving - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	1.1900e-003	0.0112	5.0000e-005	4.2100e-003	3.0000e-005	4.2400e-003	1.1200e-003	3.0000e-005	1.1500e-003	0.0000	3.0315	3.0315	1.2000e-004	0.0000	3.0341
Total	**9.4000e-004**	**1.1900e-003**	**0.0112**	**5.0000e-005**	**4.2100e-003**	**3.0000e-005**	**4.2400e-003**	**1.1200e-003**	**3.0000e-005**	**1.1500e-003**	**0.0000**	**3.0315**	**3.0315**	**1.2000e-004**	**0.0000**	**3.0341**

3.5 Paving - 2029

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	0.1171	1.0990	1.8633	2.9100e-003		0.0536	0.0536		0.0493	0.0493	0.0000	255.6932	255.6932	0.0827	0.0000	257.4298
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1171**	**1.0990**	**1.8633**	**2.9100e-003**		**0.0536**	**0.0536**		**0.0493**	**0.0493**	**0.0000**	**255.6932**	**255.6932**	**0.0827**	**0.0000**	**257.4298**

3.5 Paving - 2029

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	3.3900e-003	4.2900e-003	0.0406	1.9000e-004	0.0157	1.2000e-004	0.0158	4.1700e-003	1.1000e-004	4.2900e-003	0.0000	11.2268	11.2268	4.6000e-004	0.0000	11.2364
Total	**3.3900e-003**	**4.2900e-003**	**0.0406**	**1.9000e-004**	**0.0157**	**1.2000e-004**	**0.0158**	**4.1700e-003**	**1.1000e-004**	**4.2900e-003**	**0.0000**	**11.2268**	**11.2268**	**4.6000e-004**	**0.0000**	**11.2364**

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				2.9100e-003		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**			**2.9100e-003**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Paving - 2029

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	3.3900e-003	4.2900e-003	0.0406	1.9000e-004	0.0157	1.2000e-004	0.0158	4.1700e-003	1.1000e-004	4.2900e-003	0.0000	11.2268	11.2268	4.6000e-004	0.0000	11.2364
Total	**3.3900e-003**	**4.2900e-003**	**0.0406**	**1.9000e-004**	**0.0157**	**1.2000e-004**	**0.0158**	**4.1700e-003**	**1.1000e-004**	**4.2900e-003**	**0.0000**	**11.2268**	**11.2268**	**4.6000e-004**	**0.0000**	**11.2364**

3.5 Paving - 2030

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	0.0738	0.3804	0.8458	1.5000e-003		0.0176	0.0176		0.0176	0.0176	0.0000	128.5474	128.5474	6.0300e-003	0.0000	128.6740
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0738**	**0.3804**	**0.8458**	**1.5000e-003**		**0.0176**	**0.0176**		**0.0176**	**0.0176**	**0.0000**	**128.5474**	**128.5474**	**6.0300e-003**	**0.0000**	**128.6740**

3.5 Paving - 2030

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	1.3700e-003	1.7400e-003	0.0165	8.0000e-005	6.5600e-003	5.0000e-005	6.6100e-003	1.7400e-003	5.0000e-005	1.7900e-003	0.0000	4.6616	4.6616	1.9000e-004	0.0000	4.6655
Total	**1.3700e-003**	**1.7400e-003**	**0.0165**	**8.0000e-005**	**6.5600e-003**	**5.0000e-005**	**6.6100e-003**	**1.7400e-003**	**5.0000e-005**	**1.7900e-003**	**0.0000**	**4.6616**	**4.6616**	**1.9000e-004**	**0.0000**	**4.6655**

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				1.5000e-003		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**			**1.5000e-003**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Paving - 2030

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	1.3700e-003	1.7400e-003	0.0165	8.0000e-005	6.5600e-003	5.0000e-005	6.6100e-003	1.7400e-003	5.0000e-005	1.7900e-003	0.0000	4.6616	4.6616	1.9000e-004	0.0000	4.6655
Total	**1.3700e-003**	**1.7400e-003**	**0.0165**	**8.0000e-005**	**6.5600e-003**	**5.0000e-005**	**6.6100e-003**	**1.7400e-003**	**5.0000e-005**	**1.7900e-003**	**0.0000**	**4.6616**	**4.6616**	**1.9000e-004**	**0.0000**	**4.6655**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9800e-003	0.0401	0.0633	1.0000e-004		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	8.9364	8.9364	4.9000e-004	0.0000	8.9466
Total	**0.6236**	**0.0401**	**0.0633**	**1.0000e-004**		**1.8000e-003**	**1.8000e-003**		**1.8000e-003**	**1.8000e-003**	**0.0000**	**8.9364**	**8.9364**	**4.9000e-004**	**0.0000**	**8.9466**

3.6 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0454	0.0574	0.5408	2.5100e-003	0.2035	1.5900e-003	0.2051	0.0541	1.4800e-003	0.0556	0.0000	146.5205	146.5205	6.0400e-003	0.0000	146.6473
Total	**0.0454**	**0.0574**	**0.5408**	**2.5100e-003**	**0.2035**	**1.5900e-003**	**0.2051**	**0.0541**	**1.4800e-003**	**0.0556**	**0.0000**	**146.5205**	**146.5205**	**6.0400e-003**	**0.0000**	**146.6473**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road				1.0000e-004		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.6176**			**1.0000e-004**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0454	0.0574	0.5408	2.5100e-003	0.2035	1.5900e-003	0.2051	0.0541	1.4800e-003	0.0556	0.0000	146.5205	146.5205	6.0400e-003	0.0000	146.6473
Total	**0.0454**	**0.0574**	**0.5408**	**2.5100e-003**	**0.2035**	**1.5900e-003**	**0.2051**	**0.0541**	**1.4800e-003**	**0.0556**	**0.0000**	**146.5205**	**146.5205**	**6.0400e-003**	**0.0000**	**146.6473**

3.6 Architectural Coating - 2029

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	2.3029					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3581
Total	**2.3252**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3581**

3.6 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1639	0.2076	1.9601	9.3400e-003	0.7587	5.9800e-003	0.7647	0.2016	5.5500e-003	0.2072	0.0000	542.6300	542.6300	0.0221	0.0000	543.0938
Total	**0.1639**	**0.2076**	**1.9601**	**9.3400e-003**	**0.7587**	**5.9800e-003**	**0.7647**	**0.2016**	**5.5500e-003**	**0.2072**	**0.0000**	**542.6300**	**542.6300**	**0.0221**	**0.0000**	**543.0938**

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	2.3029					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road				3.9000e-004		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3029**			**3.9000e-004**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1639	0.2076	1.9601	9.3400e-003	0.7587	5.9800e-003	0.7647	0.2016	5.5500e-003	0.2072	0.0000	542.6300	542.6300	0.0221	0.0000	543.0938
Total	**0.1639**	**0.2076**	**1.9601**	**9.3400e-003**	**0.7587**	**5.9800e-003**	**0.7647**	**0.2016**	**5.5500e-003**	**0.2072**	**0.0000**	**542.6300**	**542.6300**	**0.0221**	**0.0000**	**543.0938**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9617					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1300e-003	0.0467	0.0980	1.6000e-004		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	13.9152	13.9152	5.6000e-004	0.0000	13.9271
Total	**0.9689**	**0.0467**	**0.0980**	**1.6000e-004**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**13.9152**	**13.9152**	**5.6000e-004**	**0.0000**	**13.9271**

3.6 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0663	0.0843	0.7976	3.9000e-003	0.3169	2.5100e-003	0.3194	0.0842	2.3300e-003	0.0865	0.0000	225.3100	225.3100	9.0600e-003	0.0000	225.5002
Total	**0.0663**	**0.0843**	**0.7976**	**3.9000e-003**	**0.3169**	**2.5100e-003**	**0.3194**	**0.0842**	**2.3300e-003**	**0.0865**	**0.0000**	**225.3100**	**225.3100**	**9.0600e-003**	**0.0000**	**225.5002**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9617					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road				1.6000e-004		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.9617**			**1.6000e-004**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0663	0.0843	0.7976	3.9000e-003	0.3169	2.5100e-003	0.3194	0.0842	2.3300e-003	0.0865	0.0000	225.3100	225.3100	9.0600e-003	0.0000	225.5002
Total	**0.0663**	**0.0843**	**0.7976**	**3.9000e-003**	**0.3169**	**2.5100e-003**	**0.3194**	**0.0842**	**2.3300e-003**	**0.0865**	**0.0000**	**225.3100**	**225.3100**	**9.0600e-003**	**0.0000**	**225.5002**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	14.6395	18.5241	111.8090	0.3180	21.0277	0.3884	21.4161	5.6235	0.3589	5.9824	0.0000	20,327.5698	20,327.5698	0.6835	0.0000	20,341.9230
Unmitigated	17.4410	30.4015	166.6695	0.6149	42.0040	0.6872	42.6912	11.2333	0.6347	11.8680	0.0000	39,315.7167	39,315.7167	1.2477	0.0000	39,341.9185

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	9,000.00	9,780.00	8280.00	25,722,204	12,876,818
Research & Development	12,960.00	3,042.00	1782.00	24,927,853	12,479,156
Strip Mall	6,400.00	6,070.00	2950.00	9,024,594	4,517,811
University/College (4Yr)	26,000.00	14,200.00	0.00	52,027,993	26,045,784
Total	54,360.00	33,092.00	13,012.00	111,702,644	55,919,569

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
Condo/Townhouse	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
University/College (4Yr)	9.50	7.30	7.30	6.40	88.60	5.00	91	9	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511899	0.073785	0.191337	0.129949	0.036287	0.005233	0.012831	0.024351	0.001922	0.001998	0.006506	0.000492	0.003409

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	21,010.1617	21,010.1617	0.8457	0.1750	21,082.1600
NaturalGas Mitigated	0.8152	7.3459	5.7468	0.0445		0.5633	0.5633		0.5633	0.5633	0.0000	8,067.9772	8,067.9772	0.1546	0.1479	8,117.0776
NaturalGas Unmitigated	1.0182	9.1756	7.1808	0.0555		0.7035	0.7035		0.7035	0.7035	0.0000	10,077.1094	10,077.1094	0.1931	0.1848	10,138.4370

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					
Condo/Townhouse	2.75821e+007	0.1487	1.2709	0.5408	8.1100e-003		0.1028	0.1028		0.1028	0.1028	0.0000	1,471.8859	1,471.8859	0.0282	0.0270	1,480.8436
Research & Development	2.1222e+007	0.1144	1.0403	0.8739	6.2400e-003		0.0791	0.0791		0.0791	0.0791	0.0000	1,132.4867	1,132.4867	0.0217	0.0208	1,139.3789
Strip Mall	458000	2.4700e-003	0.0225	0.0189	1.3000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.4406	24.4406	4.7000e-004	4.5000e-004	24.5894
University/College (4Yr)	1.39576e+008	0.7526	6.8420	5.7472	0.0411		0.5200	0.5200		0.5200	0.5200	0.0000	7,448.2961	7,448.2961	0.1428	0.1366	7,493.6252
Total		**1.0182**	**9.1756**	**7.1808**	**0.0555**		**0.7035**	**0.7035**		**0.7035**	**0.7035**	**0.0000**	**10,077.1094**	**10,077.1094**	**0.1932**	**0.1847**	**10,138.4370**

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					
Research & Development	1.9179e+007	0.1034	0.9402	0.7897	5.6400e-003		0.0715	0.0715		0.0715	0.0715	0.0000	1,023.4645	1,023.4645	0.0196	0.0188	1,029.6931
Strip Mall	398000	2.1500e-003	0.0195	0.0164	1.2000e-004		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003	0.0000	21.2388	21.2388	4.1000e-004	3.9000e-004	21.3681
University/College (4Yr)	1.09424e+008	0.5900	5.3639	4.5057	0.0322		0.4077	0.4077		0.4077	0.4077	0.0000	5,839.2719	5,839.2719	0.1119	0.1071	5,874.8087
Condo/Townhouse	2.21874e+007	0.1196	1.0224	0.4351	6.5300e-003		0.0827	0.0827		0.0827	0.0827	0.0000	1,184.0020	1,184.0020	0.0227	0.0217	1,191.2077
Total		**0.8152**	**7.3459**	**5.7469**	**0.0445**		**0.5633**	**0.5633**		**0.5633**	**0.5633**	**0.0000**	**8,067.9772**	**8,067.9772**	**0.1546**	**0.1479**	**8,117.0776**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	8.6684e+006	2,832.9091	0.1140	0.0236	2,842.6170
Research & Development	1.62e+007	5,294.3020	0.2131	0.0441	5,312.4447
Strip Mall	2.808e+006	917.6790	0.0369	7.6400e-003	920.8238
University/College (4Yr)	3.66125e+007	11,965.2715	0.4816	0.0996	12,006.2745
Total		**21,010.1617**	**0.8457**	**0.1750**	**21,082.1600**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000
Research & Development	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	32.3810	0.1726	15.0121	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	24.6507	24.6507	0.0241	0.0000	25.1573
Unmitigated	32.3810	0.1726	15.0121	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	24.6507	24.6507	0.0241	0.0000	25.1573

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.9411					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	29.9784					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4614	0.1726	15.0121	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	24.6507	24.6507	0.0241	0.0000	25.1573
Total	**32.3810**	**0.1726**	**15.0121**	**8.0000e-004**		**0.0831**	**0.0831**		**0.0831**	**0.0831**	**0.0000**	**24.6507**	**24.6507**	**0.0241**	**0.0000**	**25.1573**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.9411					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	29.9784					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4614	0.1726	15.0121	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	24.6507	24.6507	0.0241	0.0000	25.1573
Total	**32.3810**	**0.1726**	**15.0121**	**8.0000e-004**		**0.0831**	**0.0831**		**0.0831**	**0.0831**	**0.0000**	**24.6507**	**24.6507**	**0.0241**	**0.0000**	**25.1573**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Reclaimed Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4,257.8856	28.1312	0.6936	5,063.6704
Unmitigated	5,480.8348	35.1704	0.8684	6,488.6089

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	130.308 / 82.1507	894.1272	4.2804	0.1074	1,017.2979
Research & Development	885.049 / 0	4,047.0028	28.9909	0.7123	4,876.6325
Strip Mall	14.8145 / 9.07986	100.7088	0.4866	0.0122	114.7087
University/College (4Yr)	42.822 / 66.978	438.9960	1.4125	0.0365	479.9699
Total		**5,480.8348**	**35.1704**	**0.8684**	**6,488.6089**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	104.246 / 65.7206	699.9049	3.4237	0.0858	798.3886
Research & Development	708.039 / 0	3,133.0270	23.1885	0.5690	3,796.3724
Strip Mall	11.8516 / 7.26389	78.8166	0.3892	9.7400e-003	90.0105
University/College (4Yr)	34.2576 / 53.5824	346.1370	1.1298	0.0292	378.8989
Total		**4,257.8856**	**28.1312**	**0.6936**	**5,063.6704**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	249.5160	14.7460	0.0000	559.1814
Unmitigated	998.0639	58.9839	0.0000	2,236.7256

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	920	186.7517	11.0367	0.0000	418.5226
Research & Development	136.79	27.7671	1.6410	0.0000	62.2279
Strip Mall	210	42.6281	2.5193	0.0000	95.5323
University/College (4Yr)	3650	740.9170	43.7869	0.0000	1,660.4428
Total		**998.0639**	**58.9839**	**0.0000**	**2,236.7256**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	230	46.6879	2.7592	0.0000	104.6306
Research & Development	34.1975	6.9418	0.4103	0.0000	15.5570
Strip Mall	52.5	10.6570	0.6298	0.0000	23.8831
University/College (4Yr)	912.5	185.2293	10.9467	0.0000	415.1107
Total		**249.5160**	**14.7460**	**0.0000**	**559.1814**

9.0 Operational Offroad

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

10.0 Vegetation

CCV08 - University Innovation District

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	1,800.00	1000sqft	41.32	1,800,000.00	0
University/College (4Yr)	20,000.00	Student	204.09	3,675,949.37	0
Condo/Townhouse	2,000.00	Dwelling Unit	125.00	2,000,000.00	5720
Strip Mall	200.00	1000sqft	4.59	200,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2030
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage set to match total UID area: 375 acres

Construction Phase - No Demolition; Building Construction shortened to acheive 2030 buildout per traffic study.

Architectural Coating - "Super Compliant" Coatings

Vehicle Trips - LLG

Woodstoves - No woodburning devices

Area Coating - Low VOC Coatings per SDAPCD Rule 67

Construction Off-road Equipment Mitigation - USEPA Tier 4 Equipment During Building Construction

Mobile Land Use Mitigation -

Area Mitigation - Low VOC Coatings per SDAPCD Rule 67

Energy Mitigation - Net Zero Energy Development

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	10.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	10.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	10.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	10.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	50
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblAreaCoating	Area_EF_Residential_Exterior	250	50
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	6,200.00	2,200.00
tblConstructionPhase	PhaseEndDate	2/6/2032	5/31/2030
tblConstructionPhase	PhaseStartDate	6/1/2030	9/23/2028
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	1,100.00	0.00
tblFireplaces	NumberNoFireplace	200.00	2,000.00
tblFireplaces	NumberWood	700.00	0.00
tblLandUse	LotAcreage	84.39	204.09
tblProjectCharacteristics	OperationalYear	2014	2030
tblVehicleTrips	ST_TR	7.16	4.89
tblVehicleTrips	ST_TR	1.90	1.69
tblVehicleTrips	ST_TR	42.04	30.35
tblVehicleTrips	ST_TR	1.30	0.71
tblVehicleTrips	SU_TR	6.07	4.14
tblVehicleTrips	SU_TR	1.11	0.99
tblVehicleTrips	SU_TR	20.43	14.75
tblVehicleTrips	WD_TR	6.59	4.50
tblVehicleTrips	WD_TR	8.11	7.20
tblVehicleTrips	WD_TR	44.32	32.00
tblVehicleTrips	WD_TR	2.38	1.30

tblWoodstoves	NumberCatalytic	100.00	0.00
tblWoodstoves	NumberNoncatalytic	100.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2017	6.1663	69.6757	47.5874	0.0637	18.2141	3.3184	20.9694	9.9699	3.0529	12.5048	0.0000	6,470.1987	6,470.1987	1.9425	0.0000	6,510.9902
2018	5.3506	59.6101	43.0133	0.0637	8.8376	2.7892	11.6268	3.6401	2.5661	6.2061	0.0000	6,363.7433	6,363.7433	1.9416	0.0000	6,404.5174
2019	4.9478	54.2683	40.9380	0.0637	8.8376	2.5061	11.3437	3.6401	2.3056	5.9457	0.0000	6,256.7897	6,256.7897	1.9406	0.0000	6,297.5423
2020	22.2279	100.4517	270.2833	0.6497	37.3616	2.4357	39.7973	10.0620	2.2650	12.3269	0.0000	52,970.2845	52,970.2845	2.0235	0.0000	53,012.7771
2021	20.9095	85.4855	258.7644	0.6497	37.3618	2.1698	39.5316	10.0620	2.0172	12.0793	0.0000	52,507.6316	52,507.6316	1.9703	0.0000	52,549.0086
2022	19.8802	76.1382	247.2022	0.6493	37.3622	2.0060	39.3682	10.0622	1.8641	11.9262	0.0000	52,068.0752	52,068.0752	1.9228	0.0000	52,108.4534
2023	18.7621	67.8572	236.4104	0.6486	37.3626	1.8746	39.2372	10.0623	1.7410	11.8034	0.0000	51,642.6497	51,642.6497	1.8661	0.0000	51,681.8387
2024	17.7642	65.8233	224.8116	0.6484	37.3627	1.7936	39.1563	10.0624	1.6645	11.7269	0.0000	51,312.7260	51,312.7260	1.8273	0.0000	51,351.0998
2025	17.1130	64.0039	217.8135	0.6484	37.3632	1.7132	39.0764	10.0625	1.5888	11.6514	0.0000	51,029.8283	51,029.8283	1.7948	0.0000	51,067.5188
2026	16.6622	63.0098	212.7403	0.6483	37.3638	1.7050	39.0688	10.0628	1.5813	11.6441	0.0000	50,785.4545	50,785.4545	1.7700	0.0000	50,822.6248
2027	16.2253	62.3193	206.9602	0.6483	37.3645	1.7083	39.0728	10.0631	1.5843	11.6474	0.0000	50,576.2246	50,576.2246	1.7497	0.0000	50,612.9680
2028	20.1452	61.7133	203.8699	0.6483	37.3652	1.7085	39.0737	10.0634	1.5845	11.6479	0.0000	50,399.0627	50,399.0627	1.7304	0.0000	50,435.4014
2029	20.0991	11.2148	31.3870	0.0976	6.0789	0.5092	6.5881	1.6124	0.4730	2.0854	0.0000	7,072.9569	7,072.9569	0.9043	0.0000	7,091.9472
2030	20.4732	9.4381	32.2207	0.1028	6.0789	0.3907	6.4696	1.6124	0.3873	1.9997	0.0000	7,486.4273	7,486.4273	0.3202	0.0000	7,493.1524
Total	**226.7265**	**851.0094**	**2,274.0021**	**6.2304**	**384.3148**	**26.6284**	**410.3801**	**111.0375**	**24.6755**	**135.1950**	**0.0000**	**496,942.0529**	**496,942.0529**	**23.7042**	**0.0000**	**497,439.8400**

2.1 Overall Construction (Maximum Daily Emission)

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					
2017	0.9596	8.4501	10.2111	0.0637	8.2777	0.6213	8.8989	4.5080	0.5721	5.0801	0.0000	1,414.2064	1,414.2064	0.3973	0.0000	1,422.5500
2018	0.4427	3.7088	5.3835	0.0637	4.0673	0.2542	4.3215	1.6620	0.2341	1.8961	0.0000	776.4911	776.4911	0.2022	0.0000	780.7380
2019	0.3937	3.3112	5.2805	0.0637	4.0673	0.2136	4.2809	1.6620	0.1968	1.8588	0.0000	760.5613	760.5613	0.2017	0.0000	764.7960
2020	20.7447	87.0097	270.7762	0.6497	37.3616	1.5887	38.9503	10.0620	1.4656	11.5276	0.0000	52,970.2845	52,970.2845	2.0235	0.0000	53,012.7771
2021	19.6055	73.4189	259.4939	0.6497	37.3618	1.4432	38.8050	10.0620	1.3319	11.3940	0.0000	52,507.6316	52,507.6316	1.9703	0.0000	52,549.0086
2022	18.7304	65.4883	248.1026	0.6493	37.3622	1.3905	38.7527	10.0622	1.2835	11.3456	0.0000	52,068.0752	52,068.0752	1.9228	0.0000	52,108.4534
2023	17.7219	58.1849	237.4174	0.6486	37.3626	1.3429	38.7056	10.0623	1.2397	11.3021	0.0000	51,642.6497	51,642.6497	1.8661	0.0000	51,681.8387
2024	16.8117	56.9325	225.9022	0.6484	37.3627	1.3317	38.6944	10.0624	1.2294	11.2918	0.0000	51,312.7260	51,312.7260	1.8273	0.0000	51,351.0998
2025	16.2435	55.8818	218.9750	0.6484	37.3632	1.3151	38.6782	10.0625	1.2141	11.2767	0.0000	51,029.8283	51,029.8283	1.7948	0.0000	51,067.5188
2026	15.7928	54.8876	213.9018	0.6483	37.3638	1.3069	38.6706	10.0628	1.2066	11.2694	0.0000	50,785.4545	50,785.4545	1.7700	0.0000	50,822.6248
2027	15.3559	54.1972	208.1218	0.6483	37.3645	1.3101	38.6746	10.0631	1.2096	11.2727	0.0000	50,576.2246	50,576.2246	1.7497	0.0000	50,612.9680
2028	19.0770	53.5912	205.0314	0.6483	37.3652	1.3104	38.6756	10.0634	1.2098	11.2732	0.0000	50,399.0627	50,399.0627	1.7304	0.0000	50,435.4014
2029	19.0309	1.6478	15.2998	0.0976	6.0789	0.0468	6.1257	1.6124	0.0434	1.6558	0.0000	4,631.7122	4,631.7122	0.1904	0.0000	4,635.7111
2030	18.9875	1.6018	14.9037	0.1028	6.0789	0.0470	6.1259	1.6124	0.0436	1.6560	0.0000	4,604.9926	4,604.9926	0.1870	0.0000	4,608.9191
Total	**199.8978**	**578.3117**	**2,138.8009**	**6.2304**	**364.8377**	**13.5223**	**378.3599**	**101.6195**	**12.4803**	**114.0999**	**0.0000**	**475,479.9007**	**475,479.9007**	**17.8335**	**0.0000**	**475,854.4047**

	ROG	NOx	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	**11.83**	**32.04**	**5.95**	**0.00**	**5.07**	**49.22**	**7.80**	**8.48**	**49.42**	**15.60**	**0.00**	**4.32**	**4.32**	**24.77**	**0.00**	**4.34**

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	180.0284	1.9173	166.8014	8.8800e-003		0.9230	0.9230		0.9230	0.9230	0.0000	301.9194	301.9194	0.2955	0.0000	308.1245
Energy	5.5794	50.2775	39.3467	0.3043		3.8549	3.8549		3.8549	3.8549		60,866.3651	60,866.3651	1.1666	1.1159	61,236.7876
Mobile	124.1241	204.0580	1,148.0672	4.0815	287.6081	4.6077	292.2158	76.7674	4.2554	81.0229		287,772.1778	287,772.1778	9.2131		287,965.6530
Total	**309.7319**	**256.2528**	**1,354.2153**	**4.3947**	**287.6081**	**9.3855**	**296.9936**	**76.7674**	**9.0333**	**85.8007**	**0.0000**	**348,940.4622**	**348,940.4622**	**10.6752**	**1.1159**	**349,510.5651**

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	180.0284	1.9173	166.8014	8.8800e-003		0.9230	0.9230		0.9230	0.9230	0.0000	301.9194	301.9194	0.2955	0.0000	308.1245
Energy	4.4670	40.2517	31.4896	0.2437		3.0863	3.0863		3.0863	3.0863		48,731.0823	48,731.0823	0.9340	0.8934	49,027.6516
Mobile	105.4339	124.2357	784.2251	2.1108	143.9798	2.6076	146.5874	38.4306	2.4094	40.8400		148,708.6286	148,708.6286	5.0497		148,814.6731
Total	**289.9293**	**166.4047**	**982.5161**	**2.3633**	**143.9798**	**6.6169**	**150.5967**	**38.4306**	**6.4186**	**44.8492**	**0.0000**	**197,741.6303**	**197,741.6303**	**6.2792**	**0.8934**	**198,150.4491**

	ROG	NOx	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	**6.39**	**35.06**	**27.45**	**46.22**	**49.94**	**29.50**	**49.29**	**49.94**	**28.94**	**47.73**	**0.00**	**43.33**	**43.33**	**41.18**	**19.94**	**43.31**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2017	12/1/2017	5	240	
2	Grading	Grading	12/2/2017	4/17/2020	5	620	
3	Building Construction	Building Construction	4/18/2020	9/22/2028	5	2200	
4	Paving	Paving	9/23/2028	5/31/2030	5	440	
5	Architectural Coating	Architectural Coating	9/23/2028	5/31/2030	5	440	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1550

Acres of Paving: 0

Residential Indoor: 4,050,000; Residential Outdoor: 1,350,000; Non-Residential Indoor: 8,513,924; Non-Residential Outdoor: 2,837,975 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	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	125	0.42
Paving	Paving Equipment	2	8.00	130	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	3,624.00	1,144.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	725.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2017

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	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

3.2 Site Preparation - 2017

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	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989
Total	**0.0604**	**0.0753**	**0.7041**	**1.7600e-003**	**0.1479**	**1.0800e-003**	**0.1489**	**0.0392**	**9.9000e-004**	**0.0402**		**141.1467**	**141.1467**	**7.2500e-003**		**141.2989**

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	0.8991	8.3748	9.5070	0.0391		0.6202	0.6202		0.5711	0.5711	0.0000	1,273.0598	1,273.0598	0.3901		1,281.2511
Total	**0.8991**	**8.3748**	**9.5070**	**0.0391**	**8.1298**	**0.6202**	**8.7500**	**4.4688**	**0.5711**	**5.0399**	**0.0000**	**1,273.0598**	**1,273.0598**	**0.3901**		**1,281.2511**

3.2 Site Preparation - 2017

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	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989
Total	**0.0604**	**0.0753**	**0.7041**	**1.7600e-003**	**0.1479**	**1.0800e-003**	**0.1489**	**0.0392**	**9.9000e-004**	**0.0402**		**141.1467**	**141.1467**	**7.2500e-003**		**141.2989**

3.3 Grading - 2017

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	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.6733**	**3.3172**	**11.9905**	**3.5965**	**3.0518**	**6.6483**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

3.3 Grading - 2017

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	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987
Total	**0.0671**	**0.0837**	**0.7823**	**1.9500e-003**	**0.1643**	**1.1900e-003**	**0.1655**	**0.0436**	**1.1000e-003**	**0.0447**		**156.8296**	**156.8296**	**8.0500e-003**		**156.9987**

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	0.4496	4.1874	4.7535	0.0617		0.3101	0.3101		0.2856	0.2856	0.0000	636.5299	636.5299	0.1950		640.6256
Total	**0.4496**	**4.1874**	**4.7535**	**0.0617**	**3.9030**	**0.3101**	**4.2131**	**1.6184**	**0.2856**	**1.9040**	**0.0000**	**636.5299**	**636.5299**	**0.1950**		**640.6256**

3.3 Grading - 2017

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	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987
Total	**0.0671**	**0.0837**	**0.7823**	**1.9500e-003**	**0.1643**	**1.1900e-003**	**0.1655**	**0.0436**	**1.1000e-003**	**0.0447**		**156.8296**	**156.8296**	**8.0500e-003**		**156.9987**

3.3 Grading - 2018

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	5.2895	59.5338	42.3068	0.0617		2.7880	2.7880		2.5650	2.5650		6,212.8042	6,212.8042	1.9341		6,253.4209
Total	**5.2895**	**59.5338**	**42.3068**	**0.0617**	**8.6733**	**2.7880**	**11.4614**	**3.5965**	**2.5650**	**6.1615**		**6,212.8042**	**6,212.8042**	**1.9341**		**6,253.4209**

3.3 Grading - 2018

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	0.0610	0.0763	0.7065	1.9500e-003	0.1643	1.1700e-003	0.1655	0.0436	1.0800e-003	0.0447		150.9392	150.9392	7.4900e-003		151.0965
Total	**0.0610**	**0.0763**	**0.7065**	**1.9500e-003**	**0.1643**	**1.1700e-003**	**0.1655**	**0.0436**	**1.0800e-003**	**0.0447**		**150.9392**	**150.9392**	**7.4900e-003**		**151.0965**

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	0.3817	3.6325	4.6770	0.0617		0.2530	0.2530		0.2330	0.2330	0.0000	625.5519	625.5519	0.1947		629.6415
Total	**0.3817**	**3.6325**	**4.6770**	**0.0617**	**3.9030**	**0.2530**	**4.1560**	**1.6184**	**0.2330**	**1.8514**	**0.0000**	**625.5519**	**625.5519**	**0.1947**		**629.6415**

3.3 Grading - 2018

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	0.0610	0.0763	0.7065	1.9500e-003	0.1643	1.1700e-003	0.1655	0.0436	1.0800e-003	0.0447		150.9392	150.9392	7.4900e-003		151.0965
Total	**0.0610**	**0.0763**	**0.7065**	**1.9500e-003**	**0.1643**	**1.1700e-003**	**0.1655**	**0.0436**	**1.0800e-003**	**0.0447**		**150.9392**	**150.9392**	**7.4900e-003**		**151.0965**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.8912	54.1978	40.2888	0.0617		2.5049	2.5049		2.3045	2.3045		6,111.3121	6,111.3121	1.9336		6,151.9167
Total	**4.8912**	**54.1978**	**40.2888**	**0.0617**	**8.6733**	**2.5049**	**11.1783**	**3.5965**	**2.3045**	**5.9010**		**6,111.3121**	**6,111.3121**	**1.9336**		**6,151.9167**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0566	0.0705	0.6492	1.9500e-003	0.1643	1.1600e-003	0.1655	0.0436	1.0800e-003	0.0447		145.4776	145.4776	7.0400e-003		145.6256
Total	**0.0566**	**0.0705**	**0.6492**	**1.9500e-003**	**0.1643**	**1.1600e-003**	**0.1655**	**0.0436**	**1.0800e-003**	**0.0447**		**145.4776**	**145.4776**	**7.0400e-003**		**145.6256**

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	0.3370	3.2407	4.6314	0.0617		0.2124	0.2124		0.1957	0.1957	0.0000	615.0837	615.0837	0.1946		619.1704
Total	**0.3370**	**3.2407**	**4.6314**	**0.0617**	**3.9030**	**0.2124**	**4.1154**	**1.6184**	**0.1957**	**1.8141**	**0.0000**	**615.0837**	**615.0837**	**0.1946**		**619.1704**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0566	0.0705	0.6492	1.9500e-003	0.1643	1.1600e-003	0.1655	0.0436	1.0800e-003	0.0447		145.4776	145.4776	7.0400e-003		145.6256
Total	**0.0566**	**0.0705**	**0.6492**	**1.9500e-003**	**0.1643**	**1.1600e-003**	**0.1655**	**0.0436**	**1.0800e-003**	**0.0447**		**145.4776**	**145.4776**	**7.0400e-003**		**145.6256**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.5501	49.3839	38.4257	0.0617		2.2619	2.2619		2.0810	2.0810		5,977.7088	5,977.7088	1.9333		6,018.3084
Total	**4.5501**	**49.3839**	**38.4257**	**0.0617**	**8.6733**	**2.2619**	**10.9353**	**3.5965**	**2.0810**	**5.6775**		**5,977.7088**	**5,977.7088**	**1.9333**		**6,018.3084**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0536	0.0659	0.6063	1.9500e-003	0.1643	1.1700e-003	0.1655	0.0436	1.0800e-003	0.0447		139.6144	139.6144	6.7000e-003		139.7551
Total	**0.0536**	**0.0659**	**0.6063**	**1.9500e-003**	**0.1643**	**1.1700e-003**	**0.1655**	**0.0436**	**1.0800e-003**	**0.0447**		**139.6144**	**139.6144**	**6.7000e-003**		**139.7551**

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	0.3058	2.9295	4.6006	0.0617		0.1817	0.1817		0.1675	0.1675	0.0000	601.5370	601.5370	0.1946		605.6226
Total	**0.3058**	**2.9295**	**4.6006**	**0.0617**	**3.9030**	**0.1817**	**4.0847**	**1.6184**	**0.1675**	**1.7859**	**0.0000**	**601.5370**	**601.5370**	**0.1946**		**605.6226**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0536	0.0659	0.6063	1.9500e-003	0.1643	1.1700e-003	0.1655	0.0436	1.0800e-003	0.0447		139.6144	139.6144	6.7000e-003		139.7551
Total	**0.0536**	**0.0659**	**0.6063**	**1.9500e-003**	**0.1643**	**1.1700e-003**	**0.1655**	**0.0436**	**1.0800e-003**	**0.0447**		**139.6144**	**139.6144**	**6.7000e-003**		**139.7551**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465		2,542.4799	2,542.4799	0.6194		2,555.4880
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**		**2,542.4799**	**2,542.4799**	**0.6194**		**2,555.4880**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	10.4138	69.4264	143.6053	0.2690	7.5913	1.1117	8.7030	2.1655	1.0227	3.1881		25,129.6812	25,129.6812	0.1901		25,133.6738
Worker	9.7028	11.9415	109.8695	0.3539	29.7703	0.2112	29.9815	7.8965	0.1959	8.0923		25,298.1234	25,298.1234	1.2139		25,323.6153
Total	**20.1166**	**81.3678**	**253.4748**	**0.6229**	**37.3616**	**1.3229**	**38.6845**	**10.0620**	**1.2185**	**11.2805**		**50,427.8046**	**50,427.8046**	**1.4040**		**50,457.2891**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6282	5.6419	17.3013	0.0268		0.2658	0.2658		0.2471	0.2471	0.0000	2,542.4799	2,542.4799	0.6194		2,555.4880
Total	**0.6282**	**5.6419**	**17.3013**	**0.0268**		**0.2658**	**0.2658**		**0.2471**	**0.2471**	**0.0000**	**2,542.4799**	**2,542.4799**	**0.6194**		**2,555.4880**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	10.4138	69.4264	143.6053	0.2690	7.5913	1.1117	8.7030	2.1655	1.0227	3.1881		25,129.6812	25,129.6812	0.1901		25,133.6738
Worker	9.7028	11.9415	109.8695	0.3539	29.7703	0.2112	29.9815	7.8965	0.1959	8.0923		25,298.1234	25,298.1234	1.2139		25,323.6153
Total	**20.1166**	**81.3678**	**253.4748**	**0.6229**	**37.3616**	**1.3229**	**38.6845**	**10.0620**	**1.2185**	**11.2805**		**50,427.8046**	**50,427.8046**	**1.4040**		**50,457.2891**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979		2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**		**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	9.7809	56.9360	138.1442	0.2685	7.5915	1.0004	8.5919	2.1656	0.9204	3.0860		25,089.3823	25,089.3823	0.1896		25,093.3648
Worker	9.2355	11.2093	104.0826	0.3544	29.7703	0.2145	29.9848	7.8965	0.1990	8.0954		24,875.4677	24,875.4677	1.1681		24,899.9977
Total	**19.0164**	**68.1452**	**242.2268**	**0.6229**	**37.3618**	**1.2149**	**38.5767**	**10.0620**	**1.1194**	**11.1814**		**49,964.8499**	**49,964.8499**	**1.3577**		**49,993.3625**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5891	5.2737	17.2671	0.0268		0.2283	0.2283		0.2126	0.2126	0.0000	2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**0.5891**	**5.2737**	**17.2671**	**0.0268**		**0.2283**	**0.2283**		**0.2126**	**0.2126**	**0.0000**	**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	9.7809	56.9360	138.1442	0.2685	7.5915	1.0004	8.5919	2.1656	0.9204	3.0860		25,089.3823	25,089.3823	0.1896		25,093.3648
Worker	9.2355	11.2093	104.0826	0.3544	29.7703	0.2145	29.9848	7.8965	0.1990	8.0954		24,875.4677	24,875.4677	1.1681		24,899.9977
Total	**19.0164**	**68.1452**	**242.2268**	**0.6229**	**37.3618**	**1.2149**	**38.5767**	**10.0620**	**1.1194**	**11.1814**		**49,964.8499**	**49,964.8499**	**1.3577**		**49,993.3625**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581		2,543.7497	2,543.7497	0.6085		2,556.5286
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**		**2,543.7497**	**2,543.7497**	**0.6085**		**2,556.5286**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	9.3799	50.0151	132.7013	0.2681	7.5919	0.9843	8.5762	2.1657	0.9056	3.0713		25,063.4011	25,063.4011	0.1936		25,067.4672
Worker	8.8011	10.5867	98.1734	0.3544	29.7703	0.2160	29.9863	7.8965	0.2004	8.0968		24,460.9244	24,460.9244	1.1206		24,484.4575
Total	**18.1810**	**60.6018**	**230.8747**	**0.6225**	**37.3622**	**1.2003**	**38.5625**	**10.0622**	**1.1060**	**11.1681**		**49,524.3256**	**49,524.3256**	**1.3142**		**49,551.9247**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5494	4.8865	17.2279	0.0268		0.1902	0.1902		0.1775	0.1775	0.0000	2,543.7497	2,543.7497	0.6085		2,556.5286
Total	**0.5494**	**4.8865**	**17.2279**	**0.0268**		**0.1902**	**0.1902**		**0.1775**	**0.1775**	**0.0000**	**2,543.7497**	**2,543.7497**	**0.6085**		**2,556.5286**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	9.3799	50.0151	132.7013	0.2681	7.5919	0.9843	8.5762	2.1657	0.9056	3.0713		25,063.4011	25,063.4011	0.1936		25,067.4672
Worker	8.8011	10.5867	98.1734	0.3544	29.7703	0.2160	29.9863	7.8965	0.2004	8.0968		24,460.9244	24,460.9244	1.1206		24,484.4575
Total	**18.1810**	**60.6018**	**230.8747**	**0.6225**	**37.3622**	**1.2003**	**38.5625**	**10.0622**	**1.1060**	**11.1681**		**49,524.3256**	**49,524.3256**	**1.3142**		**49,551.9247**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126	16.2093	0.0268		0.6967	0.6967		0.6557	0.6557		2,544.6262	2,544.6262	0.6044		2,557.3191
Total	**1.5661**	**14.3126**	**16.2093**	**0.0268**		**0.6967**	**0.6967**		**0.6557**	**0.6557**		**2,544.6262**	**2,544.6262**	**0.6044**		**2,557.3191**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	8.7928	43.5071	127.3261	0.2674	7.5923	0.9603	8.5527	2.1659	0.8835	3.0494		25,006.9785	25,006.9785	0.1820		25,010.8014
Worker	8.4033	10.0375	92.8751	0.3544	29.7703	0.2176	29.9879	7.8965	0.2018	8.0983		24,091.0450	24,091.0450	1.0797		24,113.7182
Total	**17.1960**	**53.5446**	**220.2012**	**0.6218**	**37.3626**	**1.1779**	**38.5405**	**10.0623**	**1.0854**	**11.1477**		**49,098.0235**	**49,098.0235**	**1.2617**		**49,124.5196**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5259	4.6403	17.2162	0.0268		0.1650	0.1650		0.1544	0.1544	0.0000	2,544.6262	2,544.6262	0.6044		2,557.3191
Total	**0.5259**	**4.6403**	**17.2162**	**0.0268**		**0.1650**	**0.1650**		**0.1544**	**0.1544**	**0.0000**	**2,544.6262**	**2,544.6262**	**0.6044**		**2,557.3191**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	8.7928	43.5071	127.3261	0.2674	7.5923	0.9603	8.5527	2.1659	0.8835	3.0494		25,006.9785	25,006.9785	0.1820		25,010.8014
Worker	8.4033	10.0375	92.8751	0.3544	29.7703	0.2176	29.9879	7.8965	0.2018	8.0983		24,091.0450	24,091.0450	1.0797		24,113.7182
Total	**17.1960**	**53.5446**	**220.2012**	**0.6218**	**37.3626**	**1.1779**	**38.5405**	**10.0623**	**1.0854**	**11.1477**		**49,098.0235**	**49,098.0235**	**1.2617**		**49,124.5196**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774	16.1332	0.0268		0.6106	0.6106		0.5744	0.5744		2,545.1154	2,545.1154	0.6009		2,557.7349
Total	**1.4653**	**13.3774**	**16.1332**	**0.0268**		**0.6106**	**0.6106**		**0.5744**	**0.5744**		**2,545.1154**	**2,545.1154**	**0.6009**		**2,557.7349**

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	8.2609	42.8891	120.2669	0.2673	7.5924	0.9638	8.5562	2.1659	0.8867	3.0526		25,005.3546	25,005.3546	0.1826		25,009.1894
Worker	8.0380	9.5568	88.4115	0.3543	29.7703	0.2193	29.9896	7.8965	0.2034	8.0999		23,762.2560	23,762.2560	1.0438		23,784.1756
Total	**16.2989**	**52.4459**	**208.6784**	**0.6216**	**37.3627**	**1.1831**	**38.5458**	**10.0624**	**1.0902**	**11.1525**		**48,767.6106**	**48,767.6106**	**1.2264**		**48,793.3649**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5128	4.4866	17.2238	0.0268		0.1486	0.1486		0.1393	0.1393	0.0000	2,545.1154	2,545.1154	0.6009		2,557.7349
Total	**0.5128**	**4.4866**	**17.2238**	**0.0268**		**0.1486**	**0.1486**		**0.1393**	**0.1393**	**0.0000**	**2,545.1154**	**2,545.1154**	**0.6009**		**2,557.7349**

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	8.2609	42.8891	120.2669	0.2673	7.5924	0.9638	8.5562	2.1659	0.8867	3.0526		25,005.3546	25,005.3546	0.1826		25,009.1894
Worker	8.0380	9.5568	88.4115	0.3543	29.7703	0.2193	29.9896	7.8965	0.2034	8.0999		23,762.2560	23,762.2560	1.0438		23,784.1756
Total	**16.2989**	**52.4459**	**208.6784**	**0.6216**	**37.3627**	**1.1831**	**38.5458**	**10.0624**	**1.0902**	**11.1525**		**48,767.6106**	**48,767.6106**	**1.2264**		**48,793.3649**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	8.0234	42.4353	117.0431	0.2672	7.5929	0.9669	8.5598	2.1661	0.8896	3.0557		25,007.4807	25,007.4807	0.1831		25,011.3260
Worker	7.7281	9.1589	84.7186	0.3543	29.7703	0.2213	29.9916	7.8965	0.2053	8.1018		23,476.4570	23,476.4570	1.0142		23,497.7542
Total	**15.7515**	**51.5942**	**201.7617**	**0.6215**	**37.3632**	**1.1882**	**38.5514**	**10.0625**	**1.0949**	**11.1575**		**48,483.9377**	**48,483.9377**	**1.1973**		**48,509.0802**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4921	4.2875	17.2133	0.0269		0.1269	0.1269		0.1192	0.1192	0.0000	2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**0.4921**	**4.2875**	**17.2133**	**0.0269**		**0.1269**	**0.1269**		**0.1192**	**0.1192**	**0.0000**	**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	8.0234	42.4353	117.0431	0.2672	7.5929	0.9669	8.5598	2.1661	0.8896	3.0557		25,007.4807	25,007.4807	0.1831		25,011.3260
Worker	7.7281	9.1589	84.7186	0.3543	29.7703	0.2213	29.9916	7.8965	0.2053	8.1018		23,476.4570	23,476.4570	1.0142		23,497.7542
Total	**15.7515**	**51.5942**	**201.7617**	**0.6215**	**37.3632**	**1.1882**	**38.5514**	**10.0625**	**1.0949**	**11.1575**		**48,483.9377**	**48,483.9377**	**1.1973**		**48,509.0802**

3.4 Building Construction - 2026

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	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

3.4 Building Construction - 2026

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	7.8286	41.7520	114.8106	0.2672	7.5935	0.9562	8.5497	2.1663	0.8798	3.0461		25,009.6091	25,009.6091	0.1818		25,013.4260
Worker	7.4721	8.8481	81.8779	0.3543	29.7703	0.2238	29.9941	7.8965	0.2076	8.1041		23,229.9549	23,229.9549	0.9907		23,250.7602
Total	**15.3007**	**50.6001**	**196.6885**	**0.6215**	**37.3638**	**1.1800**	**38.5438**	**10.0628**	**1.0874**	**11.1502**		**48,239.5640**	**48,239.5640**	**1.1725**		**48,264.1862**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4921	4.2875	17.2133	0.0269		0.1269	0.1269		0.1192	0.1192	0.0000	2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**0.4921**	**4.2875**	**17.2133**	**0.0269**		**0.1269**	**0.1269**		**0.1192**	**0.1192**	**0.0000**	**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

3.4 Building Construction - 2026

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	7.8286	41.7520	114.8106	0.2672	7.5935	0.9562	8.5497	2.1663	0.8798	3.0461		25,009.6091	25,009.6091	0.1818		25,013.4260
Worker	7.4721	8.8481	81.8779	0.3543	29.7703	0.2238	29.9941	7.8965	0.2076	8.1041		23,229.9549	23,229.9549	0.9907		23,250.7602
Total	**15.3007**	**50.6001**	**196.6885**	**0.6215**	**37.3638**	**1.1800**	**38.5438**	**10.0628**	**1.0874**	**11.1502**		**48,239.5640**	**48,239.5640**	**1.1725**		**48,264.1862**

3.4 Building Construction - 2027

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	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

3.4 Building Construction - 2027

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	7.6286	41.3281	111.5353	0.2672	7.5942	0.9574	8.5517	2.1666	0.8809	3.0475		25,012.6425	25,012.6425	0.1821		25,016.4656
Worker	7.2353	8.5815	79.3731	0.3543	29.7703	0.2258	29.9961	7.8965	0.2095	8.1060		23,017.6916	23,017.6916	0.9701		23,038.0638
Total	**14.8639**	**49.9096**	**190.9084**	**0.6215**	**37.3645**	**1.1833**	**38.5478**	**10.0631**	**1.0904**	**11.1535**		**48,030.3340**	**48,030.3340**	**1.1522**		**48,054.5294**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4921	4.2875	17.2133	0.0269		0.1269	0.1269		0.1192	0.1192	0.0000	2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**0.4921**	**4.2875**	**17.2133**	**0.0269**		**0.1269**	**0.1269**		**0.1192**	**0.1192**	**0.0000**	**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

3.4 Building Construction - 2027

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	7.6286	41.3281	111.5353	0.2672	7.5942	0.9574	8.5517	2.1666	0.8809	3.0475		25,012.6425	25,012.6425	0.1821		25,016.4656
Worker	7.2353	8.5815	79.3731	0.3543	29.7703	0.2258	29.9961	7.8965	0.2095	8.1060		23,017.6916	23,017.6916	0.9701		23,038.0638
Total	**14.8639**	**49.9096**	**190.9084**	**0.6215**	**37.3645**	**1.1833**	**38.5478**	**10.0631**	**1.0904**	**11.1535**		**48,030.3340**	**48,030.3340**	**1.1522**		**48,054.5294**

3.4 Building Construction - 2028

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	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

3.4 Building Construction - 2028

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	7.5482	40.9804	110.7130	0.2672	7.5949	0.9558	8.5508	2.1669	0.8794	3.0463		25,016.2104	25,016.2104	0.1820		25,020.0314
Worker	7.0053	8.3233	77.1051	0.3543	29.7703	0.2277	29.9980	7.8965	0.2112	8.1077		22,836.9617	22,836.9617	0.9509		22,856.9315
Total	**14.5535**	**49.3037**	**187.8181**	**0.6215**	**37.3652**	**1.1835**	**38.5487**	**10.0634**	**1.0906**	**11.1540**		**47,853.1721**	**47,853.1721**	**1.1329**		**47,876.9629**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4921	4.2875	17.2133	0.0269		0.1269	0.1269		0.1192	0.1192	0.0000	2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**0.4921**	**4.2875**	**17.2133**	**0.0269**		**0.1269**	**0.1269**		**0.1192**	**0.1192**	**0.0000**	**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

3.4 Building Construction - 2028

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	7.5482	40.9804	110.7130	0.2672	7.5949	0.9558	8.5508	2.1669	0.8794	3.0463		25,016.2104	25,016.2104	0.1820		25,020.0314
Worker	7.0053	8.3233	77.1051	0.3543	29.7703	0.2277	29.9980	7.8965	0.2112	8.1077		22,836.9617	22,836.9617	0.9509		22,856.9315
Total	**14.5535**	**49.3037**	**187.8181**	**0.6215**	**37.3652**	**1.1835**	**38.5487**	**10.0634**	**1.0906**	**11.1540**		**47,853.1721**	**47,853.1721**	**1.1329**		**47,876.9629**

3.5 Paving - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8973	8.4215	14.2781	0.0223		0.4109	0.4109		0.3781	0.3781		2,159.7967	2,159.7967	0.6985		2,174.4656
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8973**	**8.4215**	**14.2781**	**0.0223**		**0.4109**	**0.4109**		**0.3781**	**0.3781**		**2,159.7967**	**2,159.7967**	**0.6985**		**2,174.4656**

3.5 Paving - 2028

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	0.0290	0.0345	0.3191	1.4700e-003	0.1232	9.4000e-004	0.1242	0.0327	8.7000e-004	0.0336		94.5239	94.5239	3.9400e-003		94.6065
Total	**0.0290**	**0.0345**	**0.3191**	**1.4700e-003**	**0.1232**	**9.4000e-004**	**0.1242**	**0.0327**	**8.7000e-004**	**0.0336**		**94.5239**	**94.5239**	**3.9400e-003**		**94.6065**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road				0.0223		0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0000**			**0.0223**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.5 Paving - 2028

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	0.0290	0.0345	0.3191	1.4700e-003	0.1232	9.4000e-004	0.1242	0.0327	8.7000e-004	0.0336		94.5239	94.5239	3.9400e-003		94.6065
Total	**0.0290**	**0.0345**	**0.3191**	**1.4700e-003**	**0.1232**	**9.4000e-004**	**0.1242**	**0.0327**	**8.7000e-004**	**0.0336**		**94.5239**	**94.5239**	**3.9400e-003**		**94.6065**

3.5 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8973	8.4215	14.2781	0.0223		0.4109	0.4109		0.3781	0.3781		2,159.7967	2,159.7967	0.6985		2,174.4656
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8973**	**8.4215**	**14.2781**	**0.0223**		**0.4109**	**0.4109**		**0.3781**	**0.3781**		**2,159.7967**	**2,159.7967**	**0.6985**		**2,174.4656**

3.5 Paving - 2029

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	0.0281	0.0334	0.3101	1.4700e-003	0.1232	9.5000e-004	0.1242	0.0327	8.8000e-004	0.0336		93.8861	93.8861	3.8600e-003		93.9671
Total	**0.0281**	**0.0334**	**0.3101**	**1.4700e-003**	**0.1232**	**9.5000e-004**	**0.1242**	**0.0327**	**8.8000e-004**	**0.0336**		**93.8861**	**93.8861**	**3.8600e-003**		**93.9671**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road				0.0223		0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0000**			**0.0223**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.5 Paving - 2029

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	0.0281	0.0334	0.3101	1.4700e-003	0.1232	9.5000e-004	0.1242	0.0327	8.8000e-004	0.0336		93.8861	93.8861	3.8600e-003		93.9671
Total	**0.0281**	**0.0334**	**0.3101**	**1.4700e-003**	**0.1232**	**9.5000e-004**	**0.1242**	**0.0327**	**8.8000e-004**	**0.0336**		**93.8861**	**93.8861**	**3.8600e-003**		**93.9671**

3.5 Paving - 2030

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	1.3549	6.9800	15.5192	0.0275		0.3234	0.3234		0.3234	0.3234		2,599.9866	2,599.9866	0.1219		2,602.5460
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3549**	**6.9800**	**15.5192**	**0.0275**		**0.3234**	**0.3234**		**0.3234**	**0.3234**		**2,599.9866**	**2,599.9866**	**0.1219**		**2,602.5460**

3.5 Paving - 2030

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	0.0272	0.0325	0.3021	1.4700e-003	0.1232	9.5000e-004	0.1242	0.0327	8.8000e-004	0.0336		93.3444	93.3444	3.7900e-003		93.4240
Total	**0.0272**	**0.0325**	**0.3021**	**1.4700e-003**	**0.1232**	**9.5000e-004**	**0.1242**	**0.0327**	**8.8000e-004**	**0.0336**		**93.3444**	**93.3444**	**3.7900e-003**		**93.4240**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road				0.0275		0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0000**			**0.0275**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.5 Paving - 2030

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	0.0272	0.0325	0.3021	1.4700e-003	0.1232	9.5000e-004	0.1242	0.0327	8.8000e-004	0.0336		93.3444	93.3444	3.7900e-003		93.4240
Total	**0.0272**	**0.0325**	**0.3021**	**1.4700e-003**	**0.1232**	**9.5000e-004**	**0.1242**	**0.0327**	**8.8000e-004**	**0.0336**		**93.3444**	**93.3444**	**3.7900e-003**		**93.4240**

3.6 Architectural Coating - 2028

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	17.6466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.7705
Total	**17.8175**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.7705**

3.6 Architectural Coating - 2028

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	1.4015	1.6651	15.4253	0.0709	5.9557	0.0456	6.0013	1.5797	0.0423	1.6220		4,568.6527	4,568.6527	0.1902		4,572.6477
Total	**1.4015**	**1.6651**	**15.4253**	**0.0709**	**5.9557**	**0.0456**	**6.0013**	**1.5797**	**0.0423**	**1.6220**		**4,568.6527**	**4,568.6527**	**0.1902**		**4,572.6477**

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	17.6466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road				2.9700e-003		0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**17.6466**			**2.9700e-003**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.6 Architectural Coating - 2028

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	1.4015	1.6651	15.4253	0.0709	5.9557	0.0456	6.0013	1.5797	0.0423	1.6220		4,568.6527	4,568.6527	0.1902		4,572.6477
Total	**1.4015**	**1.6651**	**15.4253**	**0.0709**	**5.9557**	**0.0456**	**6.0013**	**1.5797**	**0.0423**	**1.6220**		**4,568.6527**	**4,568.6527**	**0.1902**		**4,572.6477**

3.6 Architectural Coating - 2029

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	17.6466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.7705
Total	**17.8175**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.7705**

3.6 Architectural Coating - 2029

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	1.3562	1.6144	14.9897	0.0709	5.9557	0.0458	6.0015	1.5797	0.0425	1.6223		4,537.8262	4,537.8262	0.1866		4,541.7440
Total	**1.3562**	**1.6144**	**14.9897**	**0.0709**	**5.9557**	**0.0458**	**6.0015**	**1.5797**	**0.0425**	**1.6223**		**4,537.8262**	**4,537.8262**	**0.1866**		**4,541.7440**

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	17.6466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road				2.9700e-003		0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**17.6466**			**2.9700e-003**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.6 Architectural Coating - 2029

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	1.3562	1.6144	14.9897	0.0709	5.9557	0.0458	6.0015	1.5797	0.0425	1.6223		4,537.8262	4,537.8262	0.1866		4,541.7440
Total	**1.3562**	**1.6144**	**14.9897**	**0.0709**	**5.9557**	**0.0458**	**6.0015**	**1.5797**	**0.0425**	**1.6223**		**4,537.8262**	**4,537.8262**	**0.1866**		**4,541.7440**

3.6 Architectural Coating - 2030

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	17.6466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.6873
Total	**17.7774**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.6873**

3.6 Architectural Coating - 2030

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	1.3137	1.5693	14.6016	0.0709	5.9557	0.0461	6.0018	1.5797	0.0427	1.6225		4,511.6482	4,511.6482	0.1832		4,515.4951
Total	**1.3137**	**1.5693**	**14.6016**	**0.0709**	**5.9557**	**0.0461**	**6.0018**	**1.5797**	**0.0427**	**1.6225**		**4,511.6482**	**4,511.6482**	**0.1832**		**4,515.4951**

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	17.6466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road				2.9700e-003		0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**17.6466**			**2.9700e-003**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.6 Architectural Coating - 2030

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	1.3137	1.5693	14.6016	0.0709	5.9557	0.0461	6.0018	1.5797	0.0427	1.6225		4,511.6482	4,511.6482	0.1832		4,515.4951
Total	**1.3137**	**1.5693**	**14.6016**	**0.0709**	**5.9557**	**0.0461**	**6.0018**	**1.5797**	**0.0427**	**1.6225**		**4,511.6482**	**4,511.6482**	**0.1832**		**4,515.4951**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive 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	105.4339	124.2357	784.2251	2.1108	143.9798	2.6076	146.5874	38.4306	2.4094	40.8400		148,708.6286	148,708.6286	5.0497		148,814.6731
Unmitigated	124.1241	204.0580	1,148.0672	4.0815	287.6081	4.6077	292.2158	76.7674	4.2554	81.0229		287,772.1778	287,772.1778	9.2131		287,965.6530

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	9,000.00	9,780.00	8280.00	25,722,204	12,876,818
Research & Development	12,960.00	3,042.00	1782.00	24,927,853	12,479,156
Strip Mall	6,400.00	6,070.00	2950.00	9,024,594	4,517,811
University/College (4Yr)	26,000.00	14,200.00	0.00	52,027,993	26,045,784
Total	54,360.00	33,092.00	13,012.00	111,702,644	55,919,569

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
Condo/Townhouse	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
University/College (4Yr)	9.50	7.30	7.30	6.40	88.60	5.00	91	9	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511899	0.073785	0.191337	0.129949	0.036287	0.005233	0.012831	0.024351	0.001922	0.001998	0.006506	0.000492	0.003409

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.4670	40.2517	31.4896	0.2437		3.0863	3.0863		3.0863	3.0863		48,731.0823	48,731.0823	0.9340	0.8934	49,027.6516
NaturalGas Unmitigated	5.5794	50.2775	39.3467	0.3043		3.8549	3.8549		3.8549	3.8549		60,866.3651	60,866.3651	1.1666	1.1159	61,236.7876

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					
Condo/Townhouse	75567.4	0.8149	6.9641	2.9634	0.0445		0.5631	0.5631		0.5631	0.5631		8,890.2820	8,890.2820	0.1704	0.1630	8,944.3868
Research & Development	58142.5	0.6270	5.7002	4.7882	0.0342		0.4332	0.4332		0.4332	0.4332		6,840.2901	6,840.2901	0.1311	0.1254	6,881.9190
Strip Mall	1254.79	0.0135	0.1230	0.1033	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003		147.6229	147.6229	2.8300e-003	2.7100e-003	148.5213
University/College (4Yr)	382399	4.1239	37.4901	31.4917	0.2249		2.8493	2.8493		2.8493	2.8493		44,988.1701	44,988.1701	0.8623	0.8248	45,261.9606
Total		**5.5794**	**50.2775**	**39.3467**	**0.3043**		**3.8549**	**3.8549**		**3.8549**	**3.8549**		**60,866.3651**	**60,866.3651**	**1.1666**	**1.1159**	**61,236.7876**

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					
Condo/Townhouse	60.7873	0.6556	5.6020	2.3838	0.0358		0.4529	0.4529		0.4529	0.4529		7,151.4456	7,151.4456	0.1371	0.1311	7,194.9681
Research & Development	52.5452	0.5667	5.1515	4.3273	0.0309		0.3915	0.3915		0.3915	0.3915		6,181.7889	6,181.7889	0.1185	0.1133	6,219.4102
Strip Mall	1.09041	0.0118	0.1069	0.0898	6.4000e-004		8.1200e-003	8.1200e-003		8.1200e-003	8.1200e-003		128.2836	128.2836	2.4600e-003	2.3500e-003	129.0644
University/College (4Yr)	299.791	3.2330	29.3913	24.6887	0.1764		2.2337	2.2337		2.2337	2.2337		35,269.5642	35,269.5642	0.6760	0.6466	35,484.2089
Total		**4.4670**	**40.2517**	**31.4896**	**0.2437**		**3.0863**	**3.0863**		**3.0863**	**3.0863**		**48,731.0823**	**48,731.0823**	**0.9340**	**0.8934**	**49,027.6516**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	180.0284	1.9173	166.8014	8.8800e-003		0.9230	0.9230		0.9230	0.9230	0.0000	301.9194	301.9194	0.2955	0.0000	308.1245
Unmitigated	180.0284	1.9173	166.8014	8.8800e-003		0.9230	0.9230		0.9230	0.9230	0.0000	301.9194	301.9194	0.2955	0.0000	308.1245

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	10.6363					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	164.2653					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1268	1.9173	166.8014	8.8800e-003		0.9230	0.9230		0.9230	0.9230		301.9194	301.9194	0.2955		308.1245
Total	**180.0284**	**1.9173**	**166.8014**	**8.8800e-003**		**0.9230**	**0.9230**		**0.9230**	**0.9230**	**0.0000**	**301.9194**	**301.9194**	**0.2955**	**0.0000**	**308.1245**

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	10.6363					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	164.2653					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1268	1.9173	166.8014	8.8800e-003		0.9230	0.9230		0.9230	0.9230		301.9194	301.9194	0.2955		308.1245
Total	**180.0284**	**1.9173**	**166.8014**	**8.8800e-003**		**0.9230**	**0.9230**		**0.9230**	**0.9230**	**0.0000**	**301.9194**	**301.9194**	**0.2955**	**0.0000**	**308.1245**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Reclaimed Water

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 Vegetation

Appendix B

Horizon Year 2050
EMFAC2014 Output

Horizon Year 2050 EMFAC2014 Output

County	Veh_Tech	New Total VMT	2050 CO2 EF	2050 CH4 EF	2050 N2O EF	2050 CO2	2050 CH4	2050 N20	2050 CO2e
San Diego	LDA - GAS	28,625,172	198.33	0.00	0.00	5,677	0	0	5,678.92
San Diego	LDT1 - GAS	4,126,025	211.89	0.00	0.00	874	0	0	874.53
San Diego	LDT2 - GAS	10,699,483	245.39	0.00	0.00	2,626	0	0	2,626.32
San Diego	LHD1 - DSL	101,458	511.36	0.00	0.00	52	0	0	51.90
San Diego	LHD1 - GAS	1,927,696	780.12	0.00	0.00	1,504	0	0	1,504.29
San Diego	LHD2 - DSL	14,631	572.44	0.00	0.00	8	0	0	8.38
San Diego	LHD2 - GAS	277,996	874.60	0.00	0.00	243	0	0	243.21
San Diego	MCY - GAS	363,813	185.49	0.00	0.00	67	0	0	67.50
San Diego	MDV - DSL	363,335	314.15	0.00	0.00	114	0	0	114.18
San Diego	MDV - GAS	6,903,357	317.30	0.00	0.00	2,190	0	0	2,191.11
San Diego	MH - DSL	9,531	1,008.47	0.00	0.00	10	0	0	9.62
San Diego	MH - GAS	181,098	1,212.90	0.00	0.00	220	0	0	219.72
San Diego	OBUS - GAS	107,477	1,212.04	0.00	0.00	130	0	0	130.31
San Diego	SBUS - GAS	27,512	628.23	0.00	0.00	17	0	0	17.29
San Diego	T6 PUBLIC - DSL	717,504	1,150.95	0.00	0.00	826	0	0	826.07
San Diego	T7 TRACTOR - DSL	1,361,697	1,502.59	0.00	0.00	2,046	0	0	2,046.70
San Diego	UBUS - GAS	111,727	1,610.22	0.00	0.00	180	0	0	179.96
		TOTAL				**16,785**	**0**	**0**	**16,790**