Appendix B

Air Quality and Greenhouse Gas Emissions

8th, Grand and Hope Project

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Appendix B-1-Air Quality and Greenhouse Gas Emissions Methodology

AIR QUALITY AND GREENHOUSE GAS EMISSIONS METHODLOGY

8th, Grand and Hope

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8th, Grand and Hope Project

Air Quality and Greenhouse Gas Emissions Methodology

1. Introduction

Eyestone Environmental has been retained to conduct a comprehensive greenhouse gas (GHG) and criteria air pollutant emissions assessment for the 8th, Grand and Hope Project (the "Project"). Emissions during both construction and operation of the Project were quantified. This assessment describes the methodology used to estimate the GHG and air pollutant emissions from existing and Project conditions and describes the methodology used to quantify GHG and air pollutant emission reductions from project design features and mitigation measures.

2. Air Pollutant and Greenhouse Gas Emissions Methodology

The Project would result in direct emissions of criteria pollutants and direct and indirect GHG emissions generated by different types of emissions sources, including:[1]

- Direct Emissions:
  - Construction: emissions associated with demolition of existing uses, shoring, excavation, grading, and construction-related equipment and vehicular activity;
  - Area source: emissions associated with consumer products, architectural coatings, and landscape equipment;
  - Energy source (building operations): emissions associated with space heating and cooling, and water heating;

[1] *Direct sources of emissions include Project-related vehicular trips and onsite combustion of fossil fuels (e.g., natural gas, propane, gasoline, and diesel). Whereas, indirect sources of emissions include offsite emissions associated with purchased electricity and embodied energy (e.g., energy used to convey, treat, and distribute water and wastewater)*

  - Mobile source: emissions associated with vehicles accessing the project site; and
  - Stationary source: emissions associated with stationary equipment (e.g., emergency generators).

- Indirect Emissions:
  - Energy source (building operations): emissions associated with energy consumption, and lighting;
  - Solid Waste: emissions associated with the decomposition of the waste, which generates methane based on the total amount of degradable organic carbon; and
  - Water/Wastewater: emissions associated with energy used to pump, convey, deliver, and treat water.

a. Emission Inventories

Project-related construction and operation emissions were calculated using SCAQMD's recommended California Emissions Estimator Model (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered by the SCAQMD to be an accurate and comprehensive tool for quantifying criteria pollutant and GHG impacts from land use projects throughout California.[2]

CalEEMod utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. These models and default estimates use sources such as the USEPA AP-42 emission factors, CARB's on-road emission model (EMission FACtor model (EMFAC)) and off-road equipment emission model (Off-road Emissions Inventory Program model (OFFROAD)).

[2] *See www.caleemod.com.*

(1) Construction

Construction activities would generate emissions from off-road equipment usage, on-road vehicle travel (truck hauling, vendor deliveries, and workers commuting), architectural coating, and paving. Each of these source types is discussed in more detail below. The Project's construction emissions were calculated using the SCAQMD recommended CalEEMod (Version 2016.3.2). Please refer to CalEEMod construction output files for a complete listing of construction details modeled. CalEEMod default values were used for equipment and vehicle emission factors, equipment load factors and vehicle trip lengths. It should be noted that the maximum daily emissions were predicted values for the worst-case day and do not represent the emissions that would occur for every day of Project construction. The maximum daily emissions were compared to the SCAQMD daily regional numeric indicators. Annual emissions were calculated based on the total number of hours each piece of equipment was used and the total number of vehicular trips (i.e., worker, vendor, and haul) over the duration of construction. In accordance with the SCAQMD's guidance, GHG emissions from construction were amortized over the lifetime of the Project. The SCAQMD defines the lifetime of a project as 30 years.[3] Therefore, total construction GHG emissions were divided by 30 to determine an annual construction emissions estimate comparable to operational emissions.

(a) Emissions from Construction Equipment

The emission calculations associated with construction equipment are from off-road equipment engine use based on the equipment list and phase length. Since the majority of the off-road construction equipment used for construction projects are diesel fueled, CalEEMod assumes all of the equipment operates on diesel fuel. Construction equipment emissions vary with engine model years in which newer equipment will emit fewer pollutants. As a conservative assumption, the CalEEMod model uses an emission rate for equipment which represents an average model year for available equipment within the Air Basin. CalEEMod calculates the exhaust emissions based on CARB OFFROAD methodology using the equation presented below.

Construction Off-Road Equipment:

$$\text{Emissions Diesel [lbs]} = \left(\sum_i (EF_i \times Pop_i \times AvgHP_i \times Load_i \times Activity_i \right.$$

Where: EF_i = Emission factor from OFFROAD (lbs/hr)

Pop_i = Population (quantity of same equipment)

[3] *SCAQMD, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, 2008.*

$AvgHP_i$ = Maximum rated average horsepower (hp)

$Load_i$ = Load Factor (dimensionless)

$Activity_i$ = Hours of operation (hours)

i = Summation index

Fugitive dust emissions from use of off-road equipment were also calculated using CalEEMod based on the types of equipment used during grading activities and based on the amount of import/export from loading or unloading dirt into haul trucks. These methods have been adapted from USEPA's AP-42 method for Western Coal Mining. As recommended by SCAQMD, the fugitive dust emissions from the grading phase are calculated using the methodology described in USEPA AP-42. PM_{10} and $PM_{2.5}$ emissions from fugitive dust will be controlled by watering the construction site three times a day consistent with SCAQMD Rule 403 and were estimated to be reduced by 61 percent.

(b) Emissions from On-Road Trips

Construction generates on-road vehicle exhaust, evaporative, and dust emissions from personal vehicles for worker commuting, vendor deliveries, and trucks for soil and material hauling. These emissions are based on the number of trips and VMT along with emission factors from EMFAC. The emissions from mobile sources were calculated with the trip rates, trip lengths and emission factors for running from EMFAC as follows:

Construction On-Road Equipment:

Emissions pollutant (lbs) = VMT * EF running, pollutant

Where: VMT = vehicle miles traveled (miles)

EF running,pollutant = emission factor for running emissions (lbs/VMT)

Evaporative emissions, starting and idling emissions in CalEEMod were calculated by multiplying the number of trips times the respective emission factor for each pollutant.

(c) Emissions from Architectural Coating

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings. CalEEMod calculates the VOC evaporative emissions from application of residential and non-residential surface coatings using the following equation:

Construction Architectural Coating Emissions:

Emissions Architectural Coatings (lbs) =EF_{AC} x F *A_{paint}

Where: EF_{AC} = Emission Factor (lb/sf)

A_{paint} = Building Surface Area (sf)

The CalEEMod tool assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage. All of the land use information provided by a metric other than square footage erewill be converted to square footage using the default conversions or user defined equivalence.

F = fraction of surface area [%].

The default values based on SCAQMD methods used in their coating rules are 75 percent for the interior surfaces and 25 percent for the exterior shell. Parking areas are based on 6-percent coverage.

The emission factor (EF) is based on the VOC content of the surface coatings and is calculated estimated using the equation below:

EF_{AC} = C_{VOC}/454(g/lb) x 3.785(L/gal)/180*sf)

Where: EF = emission factor (lb/sf)

C = VOC content (g/L or gram per liter)

The emission factors for coating categories were calculated using the equation above based on default VOC content from provided by the air districts or CARB's statewide limits in CalEEMod. Architectural coating VOC emission factors are also consistent with SCAQMD Rule 1113 as discussed above.

(d) Emissions from Paving

CalEEMod estimates VOC off-gassing emissions associated with asphalt paving of parking lots using the following equation:

$Emissions_{AP}$ (lbs) = EF_{AP} x $A_{parking}$

Where: EF = emission factor (lb/acre)

A = area of the parking lot (acre)

Note: The Sacramento Metropolitan Air Quality Management District (SMAQMD) default emission factor is 2.62 lb/acre. This value is used as the default emission factor within CalEEMod

(2) Operation

Similar to construction, the SCAQMD-recommended CalEEMod was used to calculate potential emissions generated by the Project, including area source, energy sources (electricity and natural gas), mobile source, stationary sources (emergency generator), solid waste generation and disposal, and water usage/wastewater generation.

(3) Area Source Emissions

Area source emissions were calculated using the CalEEMod emissions inventory model, which includes consumer products, architectural coatings, and landscape maintenance equipment. Pollutant emissions generated by the Project were calculated using CalEEMod defaults, based upon the land uses that will be included in each project.

Consumer products are chemically formulated products used by household and institutional consumers, including, but not limited to, detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products; but does not include other paint products, furniture coatings, or architectural coatings. SCAQMD did an evaluation of consumer product use compared to the total square footage of buildings using data from CARB consumer product Emission Inventory. To calculate the VOC emissions from consumer product use, the following equation was used in CalEEMod:

Emissions Consumer Products (lbs) = EF_{CP} x Building Area

Where:

EF_{CP} = pounds of VOC per building square foot

The factor is 1.98×10^{-5} lbs/sf for SCAQMD areas.

Building Area = the total square footage of all buildings including residential square footage

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers. The operational emission methodology from architecture coating is the same as the construction methodology discussed above. All land use buildings are assumed to be repainted at a rate of 10 percent of area per year. This is based on the assumptions used by SCAQMD.

The combustion of fossil fuels to operate landscape equipment such as lawnmowers and trimmers, results in pollutant emissions. The emissions occur on-site and are considered a direct source of pollutant emissions. The emissions for landscaping equipment are based on the size of the land uses, the pollutant emission factors for fuel combustion. Pollutant emissions from landscaping equipment are generally calculated in CalEEMod as follows:

Landscaping Equipment:

Landscaping Equipment Emissions [lbs] = (Σ_i (Units × EF_{LE} × A_{LE})$_i$)

Where: Units = Number of land use units (same land use type) [1,000 sf]

EF_{LE} = Emission factor [grams (g)/1,000 sfday]

i = Summation index

Note: For residential land uses, emission factors are specified in units of dwelling units (DU) instead of 1,000 sf.

(4) Energy Emissions (Electricity and Natural Gas)

Pollutant emissions are emitted as a result of activities in buildings when electricity and natural gas are used as energy sources. Combustion of any type of fuel emits pollutant emissions directly into the atmosphere; when this occurs in a building, it is a direct emission source associated with that building. Pollutant emissions are also emitted during the generation of electricity from fossil fuels. When electricity is used in a building, the electricity generation typically takes place off-site at the power plant; electricity use in a building generally causes emissions in an indirect manner.

Energy demand emissions were calculated using the CalEEMod emissions inventory model. Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. CalEEMod calculates energy use from systems covered by Title 24 Building Energy Efficiency Standards (e.g., heating, ventilation, and air conditioning [HVAC] system, water heating system, and lighting system); energy use from

lighting; and energy use from office equipment, appliances, plug-ins, and other sources not covered by Title 24 or lighting.

CalEEMod energy demand is based on the California Energy Commission (CEC) sponsored California Commercial End Use Survey (CEUS) study.[4] The data is specific for climate zones and, therefore, Zone 11 was selected for the Project Site based on the ZIP Code tool. CalEEMod currently assumes 2016 Title 24 Energy Efficiency Standards when calculating project energy usage. Single-family homes built with the 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards. Once rooftop solar electricity generation is factored in, homes built under the 2019 standards will use about 53 percent less energy than those under the 2016 standards. Nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades.[5] In order to account for 2019 Title 24 Energy Efficiency Standards, energy consumption was assumed to be 10 percent more efficient than the 2016 Building Energy Efficiency Standards requirements.

(a) Electricity

Because power plants are existing stationary sources permitted by air districts and/or the USEPA, criteria pollutant emissions are generally associated with the power plants themselves, and not individual buildings or electricity users. Additionally, criteria pollutant emissions from power plants are subject to local, state, and federal control measures, which can be considered to be the maximum feasible level of mitigation for stack emissions. In contrast, GHG emissions from power plants are not subject to stationary source permitting requirements to the same degree as criteria pollutants. As such, GHGs emitted by power plants may be indirectly attributed to individual buildings and electricity users, who have the greatest ability to decrease usage by applying mitigation measures to individual electricity "end uses." CalEEMod therefore calculates GHG emissions (but not criteria pollutant emissions) from regional power plants associated with building electricity use.

Emissions associated with electricity demand are based on the size of the residential, commercial and retail land uses, the electrical demand factors for the land uses, the emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual electricity GHG emissions in units of $MTCO_2e$ are calculated as follows:

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[4] *CEC, Commercial End-Use Survey, March 2006.*

[5] *CEC, 2019 Building Energy Efficiency Standards, Fact Sheet.*

Electricity:

Annual Emissions [$MTCO_2e$] = (Σ_i (Units × D_E × EF_E × GWP)$_i$) ÷ 2,204.62

Where: Units = Number of land use units (same land use type) [1,000 sf]
D_E = Electrical demand factor [megawatt-hour (MWh)/1,000 sf/yr]
EF_E = GHG emission factor [pounds per megawatt-hour (MWh)]
GWP = Global warming potential [CO_2 = 1, CH_4 = 21, N_2O = 310]
2,204.62 = Conversion factor [pounds/MT]
i = Summation index

Note: For residential land uses, emission factors are specified in units of dwelling units (DU) instead of 1,000 sf.

GHG emissions from electricity use are directly dependent on the electricity utility provider. The Los Angeles Department of Water and Power (LADWP) provides electric service to the Project Site. Thus, GHG intensity factors for LADWP were selected in CalEEMod. Intensity factors for GHGs due to electrical generation to serve the electrical demands of the existing condition were obtained from the LADWP 2017 Power Integrated Resource Plan, which provides a CO_2 intensity of 801 pounds of CO_2 per MWh for 2019. By 2030, at least 50 percent of electricity shall be obtained from renewable sources. The 2016 Power Integrated Resource Plan estimates that the LADWP CO2 intensity would be 500 pounds of CO_2 per MWh by Year 2026.[6] As year-by-year data is currently not available, the CO_2 intensity factor for the Project buildout was determined based on straight line interpolation based on current and Year 2026 data points (801 pounds of CO_2 per MWh for Year 2019 and 616 pounds of CO_2 per MWh for Year 2025).

(b) Natural Gas

The direct source emissions associated with natural gas combustion are based on the size of the land uses and the natural gas combustion factors for the land uses in units of million British thermal units (MMBtu). Natural gas emissions are calculated in CalEEMod as follows:

[6] *2016 Final Power Integrated Resource Plan, Figure 4-7. LADWP. December 2016.*

Natural Gas:

Natural Gas Emissions (lbs) = (Σ_i (Units × D_{NG} × EF_{NG})$_I$)

Where: Units = Number of land use units (same land use type) [1,000 sf]

D_{NG} = Natural Gas combustion factor [MMBtu/1,000 sf]

EF_{NG} = Natural Gas combustion factor [pounds/MMBtu]

I = Summation index

Note: For residential land uses, emission factors are specified in units of dwelling units (DU) instead of 1,000 sf.

(5) Mobile Source Emissions

Mobile-source emissions were calculated using the CalEEMod emissions inventory model. CalEEMod calculates the emissions associated with on-road mobile sources associated with residents, employees, visitors, and delivery vehicles visiting the Project Site based on the number of daily trips generated and vehicle miles traveled (VMT). The Traffic Study prepared by the Mobility Group had calculated Project VMT which was entered into CalEEMod in calculating Project mobile source emissions.

Modeling was also conducted using the Los Angeles County vehicle fleet mix for all vehicle types as provided in EMFAC2014.

Mobile source emissions were generally calculated in CalEEMod as follows:

Mobile:

Mobile Emissions [lbs] = (Σ_i (Units × ADT x D_{TRIP} × EF_i)

Where: Units = Number of vehicles (same vehicle model year and class)

ADT = Average daily trip rate [trips/day]

D_{TRIP} = Trip distance [miles/trip]

EF = Pollutant emission factor [pounds per mile]

i = Summation index

Note: For residential land uses, emission factors are specified in units of dwelling units (DU) instead of 1,000 sf.

Mobile source operational emissions were calculated based on the Project VMT estimates provided by the Mobility Group. [7] As discussed in Section IV.G, Transportation, of this Draft EIR, to calculate peak daily trip estimates, the Los Angeles Department of Transportation (LADOT) VMT Calculator was used.

Previously, trip generation for land uses was calculated based on survey data collected by the Institute of Transportation Engineers (ITE). However, these ITE trip generation rates were based on data collected at suburban, single-use, free standing sites, which may not be representative of urban mixed-use environments. Beginning in 2019, the USEPA has sponsored a study to collect travel survey data from mixed-use developments in order provide a more representative trip generation rate for multi-use sites. Results of the USEPA survey indicate that trip generation and VMT are affected by factors such as resident and job density, availability of transit, and accessibility of biking and walking paths. Based on these factors, the USEPA has developed equations known as the EPA Mixed-Use Development (MXD) model to calculate trip reductions for multi-use developments.[8] The LADOT VMT Calculator incorporates the USEPA MXD model and accounts for project features such as increased density and proximity to transit, which would reduce VMT and associated fuel usage in comparison to free-standing sites.

The Project design includes characteristics that would reduce trips and VMT as compared to a standard project within the air basin as measured by the air quality model (CalEEMod). While these Project characteristics primarily reduce greenhouse gas emissions, they would also reduce criteria air pollutants discussed herein. These relative reductions in vehicle trips and VMT from a standard project within the air basin help quantify the criteria air pollutant emissions reductions achieved by locating the Project in any infill, HQTA area that promotes alternative modes of transportation.

(6) Stationary Source (Emergency Generator Emissions)

Emissions of GHGs associated with use of emergency generators were calculated using CalEEMod, in which emission factors are based on Table 3.4-1 (Gaseous Emission Factors for Large Stationary Diesel Engines) from EPA's AP-42: Compilation of Air Pollutant Emission Factors. The emissions are based on the horsepower rating of the diesel generator and the number of hours operated per year for testing purposes. Annual emergency generator GHG emissions in units of $MTCO_2e$ were calculated as follows:

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[7] *Transportation Impact Study for the 8th, Grand and Hope Project, The Mobility Group. December 2019.*

[8] *Environmental Protection Agency, Mixed-Use Trip Generation Model. www.epa.gov/smartgrowth/mixed-use-trip-generation-model. Accessed December 16, 2019.*

Emergency Generator:

Emissions [lbs] = (Total HP x LF x HR × EF)

Where: Total HP = Total horsepower of emergency generators (Hp)
LF = Load Factor (CalEEMod default of 0.73)
HR = Hours Operated per Year
EF = AP-42 Emission Factor of 1.16 lb/hp-hr)

(7) Solid Waste Emissions

The generation of municipal solid waste (MSW) from day-to-day operational activities generally consists of product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, plastic, and other items routinely disposed of in trash bins. A portion of the MSW is diverted to waste recycling and reclamation facilities. Waste that is not diverted is usually sent to local landfills for disposal. MSW that is disposed in landfills results in GHG emissions of CO_2 and CH_4 from the decomposition of the waste that occurs over the span of many years.

Emissions of GHGs associated with solid waste disposal were calculated using the CalEEMod emissions inventory model. The emissions are based on the size of the retail and restaurant land uses, the waste disposal rate for the land uses, the waste diversion rate, the GHG emission factors for solid waste decomposition, and the GWP values for the GHGs emitted. Annual waste disposal GHG emissions in units of $MTCO_2e$ were calculated in CalEEMod as follows:

Solid Waste:

Annual Emissions [$MTCO_2e$] = (Σ_i (Units × D_{MSW} × EF_{MSW} × GWP)$_i$) ÷ 1.1023

Where: Units = Number of land use units (same land use type) [1,000 sf]
D_{MSW} = Waste disposal rate [tons/1,000 sf/yr]
EF_{MSW} = GHG emission factor [tons/ton waste]
GWP = Global warming potential [CO_2 = 1, CH_4 = 21, N_2O = 310]
1.1023 = Conversion factor [tons/MT]
i = Summation index

Note: For residential land uses, emission factors are specified in units of dwelling units (DU) instead of 1,000 sf.

CalEEMod allows the input of several variables to quantify solid waste emissions. The model requires the amount of waste disposed, which is the product of the waste disposal rate times the land use units. CalEEMod default annaual solid waste disposal rates used. The GHG emission factors, particularly for CH_4, depend on characteristics of the landfill, such as the presence of a landfill gas capture system and subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery), which are statewide averages, were used in this assessment. The Project includes a 76.4-percent recycling/diversion rate currently achieved within the City.[9]

(8) Water Usage and Wastewater Generation Emissions

GHG emissions are related to the energy used to convey, treat, and distribute water and wastewater. Thus, these emissions are generally indirect emissions from the production of electricity to power these systems. Three processes are necessary to supply potable water and include: (1) supply and conveyance of the water from the source; (2) treatment of the water to potable standards; and (3) distribution of the water to individual users. After use, energy is used as the wastewater is treated and reused as reclaimed water.

Emissions related to water usage and wastewater generation were calculated using the CalEEMod emissions inventory model. The emissions are based on the size of the land uses, the water demand factors, the electrical intensity factors for water supply, treatment, and distribution and for wastewater treatment, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. CalEEMod default annual water demand and wastewater rates were used. GHG emissions due to electricity are calculated in CalEEMod as follows for indoor and outdoor water demand:

[9] *City of Los Angeles, Sustainable City pLAn, Waste & Landfills, http://plan.lamayor.org/portfolio/waste-landfills-3rd, accessed February 21, 2019.*

Water Supply, Treatment, and Distribution; Wastewater Treatment (electricity):

Annual Emissions [$MTCO_2e$] = (Σ_i (Units × D_W × (EI_W ÷ 1,000) × EF_W × GWP)$_i$) ÷ 2,204.62

Where: Units = Number of land use units (same land use type) [1,000 sf]

D_W = Water demand factor [million gallons (Mgal)/1,000 sf/yr]

EI_W = Electricity intensity factor [kilowatt-hours (kWh)/Mgal]

1,000 = Conversion factor [kWh/MWh]

EF_W = GHG emission factor [pounds/MWh]

GWP = Global warming potential [CO_2 = 1, CH_4 = 21, N_2O = 310]

2,205 = Conversion factor [pounds/MT]

i = Summation index

Note: For residential land uses, emission factors are specified in units of dwelling units (DU) instead of 1,000 sf.

CalEEMod provides options to account for the use of water saving features such as the use of low-flow water fixtures (e.g., low-flow faucets, low-flow toilets). The same electricity GHG emissions factors discussed above were used for water and wastewater energy usage. In addition, the calculation of Project GHG emissions from water/wastewater usage accounts for a 20 percent reduction in water/wastewater emissions with implementation of Project Design Features WAT-PDF-1 provided in Section IV.I.1, Utilities and Service Systems—Water Supply and Infrastructure, of this Draft EIR.

b. Post-2030 Analysis

Recent studies show that the State's existing and proposed regulatory framework will put the State on a pathway to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050 if additional appropriate reduction measures are adopted.[10] Even though these studies did not provide an exact

[10] *Energy and Environmental Economics (E3). "Summary of the California State Agencies' PATHWAYS Project: Long-term Greenhouse Gas Reduction Scenarios" (April 2015); Greenblatt, Jeffrey, Energy Policy, "Modeling California Impacts on Greenhouse Gas Emissions" (Vol. 78, pp. 158–172). The California Air Resources Board, California Energy Commission, California Public Utilities Commission, and the California Independent System Operator engaged E3 to evaluate the feasibility and cost of a range of potential 2030 targets along the way to the state's goal of reducing GHG emissions to 80 percent below 1990 levels by 2050. With input from the agencies, E3 developed scenarios that explore the potential pace at which emission reductions can be achieved, as well as the mix of*

(Footnote continued on next page)

regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the Statewide emissions level to remain very low through 2050.

Subsequent to the findings of these studies, SB 32 was passed on September 8, 2016, which would require the State board to ensure that Statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. The new plan outlined in SB 32 involves increasing renewable energy use, imposing tighter limits on the carbon content of gasoline and diesel fuel, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries. An evaluation was provided to determine whether the Project's design features advanced these goals by reducing VMT, increasing the use of electric vehicles, improving energy efficiency and reducing water usage.

Further, an evaluation of the Project's consistency with SCAG's RTP/SCS was provided to demonstrate that the Project will be consistent with post-2020 GHG reduction goals. The 2016–2040 RTP/SCS would result in an estimated 8-percent decrease in per capita GHG emissions by 2020, 18-percent decrease in per capita GHG emissions from passenger vehicles by 2035, and 21-percent decrease in per capita GHG emissions from passenger vehicles by 2040. In March 2018, CARB adopted updated targets requiring a 19-percent decrease in VMT for the SCAG region by 2035. As the CARB targets were adopted after the 2016–2040 RTP/SCS, it is expected that the updated targets will be incorporated into the next RTP/SCS. The 2016–2040 RTP/SCS and/or the next RTP/SCS are expected to fulfill and exceed SB 375 compliance with respect to meeting the State's GHG emission reduction goals.

technologies and practices deployed. E3 conducted the analysis using its California PATHWAYS model. Enhanced specifically for this study, the model encompasses the entire California economy with detailed representations of the buildings, industry, transportation and electricity sectors.

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Appendix B-2-Air Quality Worksheets and Modeling Output Files

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AQ SUMMARY OF EMISSIONS

Construction Emissions (Unmitigated)

Regional (Daily) Unmitigated	ROG	NOx	CO	SO2	PM10	PM2.5
2022	4	69	33	0	6	2
2023	5	31	40	0	7	3
2024	4	21	39	0	7	2
2025	33	30	54	0	8	3
MAX	33	69	54	<1	8	3
Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Difference	**(42)**	**(31)**	**(496)**	**(150)**	**(142)**	**(52)**
Impact	**No**	**No**	**No**	**No**	**No**	**No**

Localized (Daily) Unmitigated	ROG	NOx	CO	SO2	PM10	PM2.5
2022	2	24	17	<1	4	1
2023	3	22	25	<1	<1	<1
2024	3	19	25	<1	<1	<1
2025	31	28	39	<1	1	1
MAX		28	39	<1	4	1
Threshold		74	680		5	3
Difference		**(46)**	**(641)**		**(1)**	**(2)**
Impact		**No**	**No**		**No**	**No**

Construction Emissions (With Project Design Features)

Regional (Daily) w/PDFs	ROG	NOx	CO	SO2	PM10	PM2.5
2022	4	69	33	<1	6	2
2023	5	31	40	<1	7	3
2024	4	21	39	<1	7	2
2025	33	30	54	<1	8	3
MAX	33	69	54	<1	8	3
Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Difference	**(42)**	**(31)**	**(496)**	**(150)**	**(142)**	**(52)**
Impact	**No**	**No**	**No**	**No**	**No**	**No**
Percent Reduction:	0%	0%	0%	0%	0%	0%

Localized (Daily) w/PDFs	ROG	NOx	CO	SO2	PM10	PM2.5
2022	2	24	17	<1	4	1
2023	3	22	25	<1	<1	<1
2024	3	19	25	<1	<1	<1
2025	31	28	39	<1	1	1
MAX		28	39		4	1
Threshold		74	680		5	3
Difference		**(46)**	**(641)**		**(1)**	**(2)**
Impact		**No**	**No**		**No**	**No**
Percent Reduction:		0%	0%		0%	0%

Operation Emissions (Without Project Design Features)

Regional Buildout (Buildout Year)	ROG	NOx	CO	SO2	PM10	PM2.5
Area	14	1	48	<1	<1	<1
Energy	<1	1	<1	<1	<1	<1
Mobile	2	11	22	<1	7	2
Emergency Generator	<1	1	1	<1	<1	<1
Total	17	14	72	<1	7	2

Project Regional (Buildout Less Baseline (Buildout Year))	ROG	NOx	CO	SO2	PM10	PM2.5
Area	14	1	48	0	0	0
Energy	<1	1	<1	<1	<1	<1
Mobile	2	11	22	0	7	2
Emergency Generator	<1	1	1	<1	<1	<1
Total	17	14	72	0	7	2
Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Difference	**(38)**	**(41)**	**(478)**	**(150)**	**(143)**	**(53)**
Impact	No	No	No	No	No	No

Project Localized (Buildout Less Baseline (Buildout Year))					
Onsite Total	4	50		0	0.5
Threshold	**74**	**680**		**2**	**1**
Difference	**(70)**	**(630)**		**(2)**	**(1)**
Impact	**No**	**No**		**No**	**No**

Operation Emissions (With Project Design Features)

Regional Buildout (Buildout Year)	ROG	NOx	CO	SO2	PM10	PM2.5
Area	14	1	48	<1	<1	<1
Energy	<1	1	<1	<1	<1	<1
Mobile	2	11	22	<1	7	2
Emergency Generator	<1	1	1	<1	<1	<1
Total	17	14	72	<1	7	2

Project Regional (Buildout Less Baseline (Buildout Year))	ROG	NOx	CO	SO2	PM10	PM2.5
Area	14	1	48	0	0	0
Energy	<1	1	<1	<1	<1	<1
Mobile	2	11	22	0	7	2
Emergency Generator	<1	1	1	<1	<1	<1
Total	17	14	72	0	7	2
Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Difference	**(38)**	**(41)**	**(478)**	**(150)**	**(143)**	**(53)**
Impact	No	No	No	No	No	No
Percent Reduction:	0%	0%	0%	0%	0%	0%

Project Localized (Buildout Less Baseline (Buildout Year))					
Onsite Total	4	50		0	0.5
Threshold	**74**	**680**		**2**	**1**
Difference	**(70)**	**(630)**		**(2)**	**(1)**
Impact	**No**	**No**		**No**	**No**

8th, Grand and Hope

Air Quality Analysis Assumptions

Construction Details	Start Date	End Date	Duration (Months)	Days	Max Daily Employee Trips	Max Daily Hauls (x2 for trips)	Total Hauls	Max Daily Deliveries	Construction (Sq Ft) Residential	Non-Residential	Parking (Spaces)
Overall Duration			36								
Demolition	6/1/2022	7/31/2022	2	52	40	24	1,250				324
Grading/Excavation	8/1/2022	10/31/2022	3	79	60	110	8,690				
Building Foundation	11/1/2022	4/15/2023	5	143	100	150					
Building Construction	4/16/2023	6/1/2025	26	666	550	10		20	548,960	7,499	636
Paving/Landscape	3/1/2025	6/1/2025	3	79	40	5		10			

Site Acreage		
	0.83	
Demolition Quantities		
Cubic Yards	15,000	Assumed
Import/Export Quantities during Grading	**(CY)**	
Import		
Export	89,750	Project Description
Foundation	**(CY)**	
Concrete	13,000	

One-way Distance to Landfill (miles)

Haul Route Option A: Vulcan Irwindale 24.4 Note: Analysis will conservatively assume demolition / soil will go to Vulcan Irwindale, which is farther from the Project Site than Sun Valley.

Haul Route Option B: Vulcan Sun Valley 19.2

Equipment	Demo	Grading/ Excavation	Foundation	Building Construction	Paving/ Landscape
Air Compressor	2			2	
Aerial Lift				2	
Bore/Drill Rig		3			
Cement and Mortar Mixers				2	1
Concrete/Industrial Saws	2				
Cranes (Tower)				1	
Cranes (Mobile)				1	
Crawler Tractors					
Crushing/Proc. Equipment					
Excavators		2			
Forklifts				1	
Generator Sets				1	
Graders					
Off-Highway Tractors					
Water Truck	1	1	1		1
Pavers					
Paving Equipment					1
Pumps			2		
Plate Compactors			2		1
Rollers					1
Rough Terrain Forklifts				1	
Rubber Tired Dozers					
Rubber Tired Loaders		1			
Scrapers					
Signal Boards				2	
Skid Steer Loaders		1			2
Surfacing Equipment					1
Tractors/Loaders/Backhoes	2		1	1	1
Trenchers					
Welders			2	2	
Other ( )					
Total Pieces	7	8	8	16	9

8th, Grand and Hope

Demolition Debris Calculations for CalEEMod Input

Existing Uses

Land Use	Amount	Units	Land Use Square Footage	Notes
Parking Structure	324	spaces	129,600	CalEEMod assumes 400 square feet per parking space. CalEEMod Users Guide, Appendix A, Page 18, May 2021.

Debris Calculations

Buliding Height (ft)	12	
Square Footage (ft2)	129,600	
Buliding Volume (ft3)	1,555,200	
Demolition Debris Volume (ft3)	388,800	1 ft3 building volume = 0.25 ft3 waste volume. CalEEMod Users Guide, Appendix A, Page 13, May 2021.
Demolition Debris Volume (CY)	15,000	14,400 cubic yards + 600 CY as fluff factor
Density of Demolition Debris (lbs/CY)	2,400	2,400 pounds per cubic yard for "Construction Debris, Asphalt or Concrete" as provided by CalRecycle, Calculations, Solid Waste Cleanup Project Weights
Demolition Debris (tons)	18,000	

CalEEMod Version: CalEEMod.2016.3.2

8th, Grand and Hope - Construction and Operations - Los Angeles-South Coast County, Winter

8th, Grand and Hope - Construction and Operations

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1.00	User Defined Unit	0.00	1.00	0
Enclosed Parking with Elevator	198.00	Space	0.00	79,200.00	0
Unenclosed Parking with Elevator	438.00	Space	0.00	175,200.00	0
Apartments High Rise	580.00	Dwelling Unit	0.83	548,960.00	1404
Strip Mall	7.50	1000sqft	0.00	7,499.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	616	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SB100 Renewable Portfolio Standards - Year 2025 = 616 lbs/MWh

Land Use - Project specific land use sq ft; total of 0.83 acres; User Defined is for purposes of running LADOT VMT data instead of CalEEMod default.

Construction Phase - Consistent with Project Description

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Site Specific

Off-road Equipment - Project Specific Equipment List

Trips and VMT - Number of hauls reflect total amount of material requiring transport; Haul length reflects round trip to Irwindale Landfill. Foundation vehicle class changed to HHDT to reflect concrete trucks

Demolition -

Grading -

Architectural Coating -

Vehicle Trips - LADOT VMT Calculator

Woodstoves - No Wood Stoves; Reflects PDF AQ-2

Area Coating -

Energy Use - Consistency with Section 120.6(c) CBS, Mandatory Requirements for Enclosed Parking Garages

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - City of LA Waste Diversion Rate

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	130.00
tblConstructionPhase	NumDays	100.00	666.00
tblConstructionPhase	NumDays	10.00	52.00
tblConstructionPhase	NumDays	2.00	79.00
tblConstructionPhase	NumDays	5.00	79.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblEnergyUse	LightingElect	1.75	2.33
tblEnergyUse	LightingElect	1.75	2.33
tblEnergyUse	T24E	3.92	0.46
tblFireplaces	FireplaceDayYear	25.00	100.00
tblFireplaces	FireplaceHourDay	3.00	6.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	493.00	15.00
tblFireplaces	NumberNoFireplace	58.00	0.00
tblFireplaces	NumberWood	29.00	0.00
tblGrading	MaterialExported	0.00	89,750.00
tblLandUse	LandUseSquareFeet	0.00	1.00
tblLandUse	LandUseSquareFeet	580,000.00	548,960.00
tblLandUse	LandUseSquareFeet	7,500.00	7,499.00
tblLandUse	LotAcreage	1.78	0.00
tblLandUse	LotAcreage	3.94	0.00
tblLandUse	LotAcreage	9.35	0.83
tblLandUse	LotAcreage	0.17	0.00
tblLandUse	Population	1,659.00	1,404.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	4.00	8.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	616
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	1,780.00	1,250.00
tblTripsAndVMT	HaulingTripNumber	11,219.00	8,690.00
tblTripsAndVMT	VendorTripLength	6.90	13.80
tblTripsAndVMT	VendorTripNumber	0.00	150.00
tblTripsAndVMT	VendorTripNumber	105.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	60.00
tblTripsAndVMT	WorkerTripNumber	18.00	100.00
tblTripsAndVMT	WorkerTripNumber	527.00	550.00
tblTripsAndVMT	WorkerTripNumber	105.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblVehicleTrips	CC_TL	8.40	5.68
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	PB_TP	0.00	37.45
tblVehicleTrips	PR_TP	0.00	62.55
tblVehicleTrips	ST_TR	4.98	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	ST_TR	0.00	2,398.00
tblVehicleTrips	SU_TR	3.65	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	SU_TR	0.00	2,398.00
tblVehicleTrips	WD_TR	4.20	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblVehicleTrips	WD_TR	0.00	2,398.00
tblWoodstoves	NumberCatalytic	29.00	0.00
tblWoodstoves	NumberNoncatalytic	29.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	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					
2022	3.6637	69.4585	33.2119	0.2462	8.9046	0.7442	9.6487	1.5279	0.7277	2.2556						
2023	4.7035	31.2066	40.3750	0.1112	6.2758	0.8902	7.1660	1.6673	0.8578	2.5251						
2024	4.4579	20.9759	39.0826	0.0977	6.2758	0.7951	7.0708	1.6673	0.7655	2.4328						
2025	33.0978	30.3229	54.1478	0.1313	7.2340	1.1127	8.3467	1.9229	1.0609	2.9838						
Maximum	**33.0978**	**69.4585**	**54.1478**	**0.2462**	**8.9046**	**1.1127**	**9.6487**	**1.9229**	**1.0609**	**2.9838**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6637	69.4585	33.2119	0.2462	5.5260	0.7442	6.2504	1.5024	0.7277	2.1759						
2023	4.7035	31.2066	40.3750	0.1112	6.2758	0.8902	7.1660	1.6673	0.8578	2.5251						
2024	4.4579	20.9759	39.0826	0.0977	6.2758	0.7951	7.0708	1.6673	0.7655	2.4328						
2025	33.0978	30.3229	54.1478	0.1313	7.2340	1.1127	8.3467	1.9229	1.0609	2.9838						
Maximum	**33.0978**	**69.4585**	**54.1478**	**0.2462**	**7.2340**	**1.1127**	**8.3467**	**1.9229**	**1.0609**	**2.9838**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**11.78**	**0.00**	**10.54**	**0.38**	**0.00**	**0.78**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.5872	1.0489	48.0828	5.7100e-003		0.3057	0.3057		0.3057	0.3057						
Energy	0.1583	1.3530	0.5771	8.6400e-003		0.1094	0.1094		0.1094	0.1094						
Mobile	2.4643	10.6027	22.1800	0.0774	6.6625	0.0636	6.7260	1.7826	0.0590	1.8416						
Stationary	0.4923	1.3760	1.2553	2.3700e-003		0.0724	0.0724		0.0724	0.0724						
Total	**16.7021**	**14.3806**	**72.0952**	**0.0941**	**6.6625**	**0.5511**	**7.2136**	**1.7826**	**0.5466**	**2.3292**						

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	13.5872	1.0489	48.0828	5.7100e-003		0.3057	0.3057		0.3057	0.3057						
Energy	0.1508	1.2886	0.5496	8.2200e-003		0.1042	0.1042		0.1042	0.1042						
Mobile	2.4643	10.6027	22.1800	0.0774	6.6625	0.0636	6.7260	1.7826	0.0590	1.8416						
Stationary	0.4923	1.3760	1.2553	2.3700e-003		0.0724	0.0724		0.0724	0.0724						
Total	**16.6946**	**14.3162**	**72.0677**	**0.0937**	**6.6625**	**0.5459**	**7.2084**	**1.7826**	**0.5413**	**2.3239**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.05**	**0.45**	**0.04**	**0.45**	**0.00**	**0.95**	**0.07**	**0.00**	**0.95**	**0.22**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2022	7/31/2022	6	52	
2	Grading	Grading	8/1/2022	10/31/2022	6	79	
3	Foundation	Trenching	11/1/2022	4/15/2023	6	143	
4	Building Construction	Building Construction	4/16/2023	6/1/2025	6	666	
5	Architectural Coating	Architectural Coating	1/1/2025	6/1/2025	6	130	
6	Paving/Landscaping	Paving	3/1/2025	6/1/2025	6	79	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,111,644; Residential Outdoor: 370,548; Non-Residential Indoor: 11,250; Non-Residential Outdoor: 3,750; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Bore/Drill Rigs	3	8.00	221	0.50
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37

Foundation	Plate Compactors	2	8.00	8	0.43
Foundation	Pumps	2	8.00	84	0.74
Foundation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Foundation	Welders	2	8.00	46	0.45
Building Construction	Aerial Lifts	2	8.00	63	0.31
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Building Construction	Signal Boards	2	8.00	6	0.82
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Architectural Coating	Air Compressors	1	8.00	78	0.48
Paving/Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
Paving/Landscaping	Pavers	0	8.00	130	0.42
Paving/Landscaping	Paving Equipment	1	8.00	132	0.36
Paving/Landscaping	Plate Compactors	1	8.00	8	0.43
Paving/Landscaping	Rollers	1	8.00	80	0.38
Paving/Landscaping	Skid Steer Loaders	2	8.00	65	0.37
Paving/Landscaping	Surfacing Equipment	1	8.00	263	0.30
Paving/Landscaping	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	40.00	0.00	1,250.00	14.70	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Grading	7	60.00	0.00	8,690.00	14.70	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Foundation	7	100.00	150.00	0.00	14.70	13.80	20.00	LD_Mix	HHDT	HHDT
Building Construction	15	550.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Landscaping	8	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.4074	0.0000	7.4074	1.1215	0.0000	1.1215						
Off-Road	1.5903	12.7096	16.6415	0.0267		0.6985	0.6985		0.6841	0.6841						

Total	**1.5903**	**12.7096**	**16.6415**	**0.0267**	**7.4074**	**0.6985**	**8.1058**	**1.1215**	**0.6841**	**1.8056**						

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	0.4276	12.0138	3.4145	0.0422	1.0501	0.0422	1.0923	0.2878	0.0404	0.3282						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1791	0.1178	1.3567	4.1500e-003	0.4471	3.5000e-003	0.4506	0.1186	3.2200e-003	0.1218						
Total	**0.6068**	**12.1316**	**4.7712**	**0.0463**	**1.4972**	**0.0457**	**1.5429**	**0.4064**	**0.0436**	**0.4500**						

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					2.8889	0.0000	2.8889	0.4374	0.0000	0.4374						
Off-Road	1.5903	12.7096	16.6415	0.0267		0.6985	0.6985		0.6841	0.6841						
Total	**1.5903**	**12.7096**	**16.6415**	**0.0267**	**2.8889**	**0.6985**	**3.5874**	**0.4374**	**0.6841**	**1.1215**						

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	0.4276	12.0138	3.4145	0.0422	1.0501	0.0422	1.0923	0.2878	0.0404	0.3282						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1791	0.1178	1.3567	4.1500e-003	0.4471	3.5000e-003	0.4506	0.1186	3.2200e-003	0.1218						
Total	**0.6068**	**12.1316**	**4.7712**	**0.0463**	**1.4972**	**0.0457**	**1.5429**	**0.4064**	**0.0436**	**0.4500**						

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					0.1285	0.0000	0.1285	0.0195	0.0000	0.0195						
Off-Road	1.4381	14.3068	15.5521	0.0470		0.5261	0.5261		0.4840	0.4840						
Total	**1.4381**	**14.3068**	**15.5521**	**0.0470**	**0.1285**	**0.5261**	**0.6545**	**0.0195**	**0.4840**	**0.5034**						

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	1.9569	54.9750	15.6247	0.1930	4.8052	0.1931	4.9983	1.3169	0.1848	1.5017						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.2687	0.1767	2.0351	6.2300e-003	0.6707	5.2500e-003	0.6759	0.1779	4.8400e-003	0.1827						
Total	**2.2256**	**55.1517**	**17.6598**	**0.1992**	**5.4759**	**0.1984**	**5.6742**	**1.4948**	**0.1896**	**1.6844**						

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					0.0501	0.0000	0.0501	7.5900e-003	0.0000	7.5900e-003						
Off-Road	1.4381	14.3068	15.5521	0.0470		0.5261	0.5261		0.4840	0.4840						
Total	**1.4381**	**14.3068**	**15.5521**	**0.0470**	**0.0501**	**0.5261**	**0.5762**	**7.5900e-003**	**0.4840**	**0.4916**						

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	1.9569	54.9750	15.6247	0.1930	4.8052	0.1931	4.9983	1.3169	0.1848	1.5017						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.2687	0.1767	2.0351	6.2300e-003	0.6707	5.2500e-003	0.6759	0.1779	4.8400e-003	0.1827						
Total	**2.2256**	**55.1517**	**17.6598**	**0.1992**	**5.4759**	**0.1984**	**5.6742**	**1.4948**	**0.1896**	**1.6844**						

3.4 Foundation - 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	1.5022	11.0417	13.5142	0.0224		0.5488	0.5488		0.5416	0.5416						
Total	**1.5022**	**11.0417**	**13.5142**	**0.0224**		**0.5488**	**0.5488**		**0.5416**	**0.5416**						

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						
Vendor	0.9194	30.1249	7.5205	0.0825	1.8108	0.0771	1.8879	0.4965	0.0737	0.5702						
Worker	0.4478	0.2945	3.3918	0.0104	1.1178	8.7500e-003	1.1265	0.2964	8.0600e-003	0.3045						
Total	**1.3672**	**30.4195**	**10.9123**	**0.0929**	**2.9286**	**0.0858**	**3.0144**	**0.7929**	**0.0818**	**0.8747**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5022	11.0417	13.5142	0.0224		0.5488	0.5488		0.5416	0.5416						
Total	**1.5022**	**11.0417**	**13.5142**	**0.0224**		**0.5488**	**0.5488**		**0.5416**	**0.5416**						

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						
Vendor	0.9194	30.1249	7.5205	0.0825	1.8108	0.0771	1.8879	0.4965	0.0737	0.5702						
Worker	0.4478	0.2945	3.3918	0.0104	1.1178	8.7500e-003	1.1265	0.2964	8.0600e-003	0.3045						
Total	**1.3672**	**30.4195**	**10.9123**	**0.0929**	**2.9286**	**0.0858**	**3.0144**	**0.7929**	**0.0818**	**0.8747**						

3.4 Foundation - 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	1.3961	10.3851	13.4587	0.0224		0.4753	0.4753		0.4692	0.4692						
Total	**1.3961**	**10.3851**	**13.4587**	**0.0224**		**0.4753**	**0.4753**		**0.4692**	**0.4692**						

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						
Vendor	0.6071	20.5552	6.7194	0.0789	1.8109	0.0330	1.8439	0.4965	0.0316	0.5281						
Worker	0.4219	0.2664	3.1177	0.0100	1.1178	8.5000e-003	1.1263	0.2964	7.8300e-003	0.3043						
Total	**1.0290**	**20.8216**	**9.8370**	**0.0889**	**2.9287**	**0.0415**	**2.9702**	**0.7929**	**0.0394**	**0.8323**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3961	10.3851	13.4587	0.0224		0.4753	0.4753		0.4692	0.4692						
Total	**1.3961**	**10.3851**	**13.4587**	**0.0224**		**0.4753**	**0.4753**		**0.4692**	**0.4692**						

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						
Vendor	0.6071	20.5552	6.7194	0.0789	1.8109	0.0330	1.8439	0.4965	0.0316	0.5281						
Worker	0.4219	0.2664	3.1177	0.0100	1.1178	8.5000e-003	1.1263	0.2964	7.8300e-003	0.3043						

Total	**1.0290**	**20.8216**	**9.8370**	**0.0889**	**2.9287**	**0.0415**	**2.9702**	**0.7929**	**0.0394**	**0.8323**						

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3384	19.2633	22.7555	0.0397		0.8418	0.8418		0.8131	0.8131						
Total	**2.3384**	**19.2633**	**22.7555**	**0.0397**		**0.8418**	**0.8418**		**0.8131**	**0.8131**						

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						
Vendor	0.0445	1.3948	0.4723	4.7900e-003	0.1281	1.7000e-003	0.1298	0.0369	1.6300e-003	0.0385						
Worker	2.3205	1.4652	17.1472	0.0550	6.1477	0.0468	6.1945	1.6304	0.0431	1.6735						
Total	**2.3650**	**2.8600**	**17.6195**	**0.0598**	**6.2758**	**0.0485**	**6.3242**	**1.6673**	**0.0447**	**1.7119**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3384	19.2633	22.7555	0.0397		0.8418	0.8418		0.8131	0.8131						
Total	**2.3384**	**19.2633**	**22.7555**	**0.0397**		**0.8418**	**0.8418**		**0.8131**	**0.8131**						

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						

Vendor	0.0445	1.3948	0.4723	4.7900e-003	0.1281	1.7000e-003	0.1298	0.0369	1.6300e-003	0.0385						
Worker	2.3205	1.4652	17.1472	0.0550	6.1477	0.0468	6.1945	1.6304	0.0431	1.6735						
Total	**2.3650**	**2.8600**	**17.6195**	**0.0598**	**6.2758**	**0.0485**	**6.3242**	**1.6673**	**0.0447**	**1.7119**						

3.5 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	2.2125	18.2503	22.6613	0.0397		0.7473	0.7473		0.7215	0.7215						
Total	**2.2125**	**18.2503**	**22.6613**	**0.0397**		**0.7473**	**0.7473**		**0.7215**	**0.7215**						

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						
Vendor	0.0434	1.3898	0.4580	4.7700e-003	0.1281	1.6700e-003	0.1297	0.0369	1.6000e-003	0.0385						
Worker	2.2020	1.3358	15.9634	0.0533	6.1477	0.0461	6.1938	1.6304	0.0424	1.6728						
Total	**2.2454**	**2.7256**	**16.4214**	**0.0581**	**6.2758**	**0.0478**	**6.3235**	**1.6673**	**0.0440**	**1.7113**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2125	18.2503	22.6613	0.0397		0.7473	0.7473		0.7215	0.7215						
Total	**2.2125**	**18.2503**	**22.6613**	**0.0397**		**0.7473**	**0.7473**		**0.7215**	**0.7215**						

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						
Vendor	0.0434	1.3898	0.4580	4.7700e-003	0.1281	1.6700e-003	0.1297	0.0369	1.6000e-003	0.0385						
Worker	2.2020	1.3358	15.9634	0.0533	6.1477	0.0461	6.1938	1.6304	0.0424	1.6728						
Total	**2.2454**	**2.7256**	**16.4214**	**0.0581**	**6.2758**	**0.0478**	**6.3235**	**1.6673**	**0.0440**	**1.7113**						

3.5 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	2.0907	17.2361	22.5734	0.0397		0.6575	0.6575		0.6346	0.6346						
Total	**2.0907**	**17.2361**	**22.5734**	**0.0397**		**0.6575**	**0.6575**		**0.6346**	**0.6346**						

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						
Vendor	0.0423	1.3780	0.4463	4.7400e-003	0.1281	1.6400e-003	0.1297	0.0369	1.5700e-003	0.0384						
Worker	2.0975	1.2220	14.8120	0.0512	6.1477	0.0451	6.1928	1.6304	0.0415	1.6719						
Total	**2.1398**	**2.6000**	**15.2583**	**0.0559**	**6.2758**	**0.0468**	**6.3225**	**1.6673**	**0.0431**	**1.7104**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0907	17.2361	22.5734	0.0397		0.6575	0.6575		0.6346	0.6346						
Total	**2.0907**	**17.2361**	**22.5734**	**0.0397**		**0.6575**	**0.6575**		**0.6346**	**0.6346**						

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						
Vendor	0.0423	1.3780	0.4463	4.7400e-003	0.1281	1.6400e-003	0.1297	0.0369	1.5700e-003	0.0384						
Worker	2.0975	1.2220	14.8120	0.0512	6.1477	0.0451	6.1928	1.6304	0.0415	1.6719						
Total	**2.1398**	**2.6000**	**15.2583**	**0.0559**	**6.2758**	**0.0468**	**6.3225**	**1.6673**	**0.0431**	**1.7104**						

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.5020					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2278	1.5273	2.4122	3.9600e-003		0.0687	0.0687		0.0687	0.0687						
Total	**27.7298**	**1.5273**	**2.4122**	**3.9600e-003**		**0.0687**	**0.0687**		**0.0687**	**0.0687**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1526	0.0889	1.0772	3.7200e-003	0.4471	3.2800e-003	0.4504	0.1186	3.0200e-003	0.1216						
Total	**0.1526**	**0.0889**	**1.0772**	**3.7200e-003**	**0.4471**	**3.2800e-003**	**0.4504**	**0.1186**	**3.0200e-003**	**0.1216**						

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	27.5020					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2278	1.5273	2.4122	3.9600e-003		0.0687	0.0687		0.0687	0.0687						
Total	**27.7298**	**1.5273**	**2.4122**	**3.9600e-003**		**0.0687**	**0.0687**		**0.0687**	**0.0687**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1526	0.0889	1.0772	3.7200e-003	0.4471	3.2800e-003	0.4504	0.1186	3.0200e-003	0.1216						
Total	**0.1526**	**0.0889**	**1.0772**	**3.7200e-003**	**0.4471**	**3.2800e-003**	**0.4504**	**0.1186**	**3.0200e-003**	**0.1216**						

3.7 Paving/Landscaping - 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	0.8113	8.0928	11.5263	0.0219		0.3323	0.3323		0.3077	0.3077						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.8113**	**8.0928**	**11.5263**	**0.0219**		**0.3323**	**0.3323**		**0.3077**	**0.3077**						

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						
Vendor	0.0212	0.6890	0.2232	2.3700e-003	0.0640	8.2000e-004	0.0649	0.0184	7.8000e-004	0.0192						
Worker	0.1526	0.0889	1.0772	3.7200e-003	0.4471	3.2800e-003	0.4504	0.1186	3.0200e-003	0.1216						
Total	**0.1737**	**0.7779**	**1.3004**	**6.0900e-003**	**0.5111**	**4.1000e-003**	**0.5152**	**0.1370**	**3.8000e-003**	**0.1408**						

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	0.8113	8.0928	11.5263	0.0219		0.3323	0.3323		0.3077	0.3077						

Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.8113**	**8.0928**	**11.5263**	**0.0219**		**0.3323**	**0.3323**		**0.3077**	**0.3077**						

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						
Vendor	0.0212	0.6890	0.2232	2.3700e-003	0.0640	8.2000e-004	0.0649	0.0184	7.8000e-004	0.0192						
Worker	0.1526	0.0889	1.0772	3.7200e-003	0.4471	3.2800e-003	0.4504	0.1186	3.0200e-003	0.1216						
Total	**0.1737**	**0.7779**	**1.3004**	**6.0900e-003**	**0.5111**	**4.1000e-003**	**0.5152**	**0.1370**	**3.8000e-003**	**0.1408**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4643	10.6027	22.1800	0.0774	6.6625	0.0636	6.7260	1.7826	0.0590	1.8416						
Unmitigated	2.4643	10.6027	22.1800	0.0774	6.6625	0.0636	6.7260	1.7826	0.0590	1.8416						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
User Defined Commercial	2,398.00	2,398.00	2398.00	3,133,864	3,133,864
Total	2,398.00	2,398.00	2,398.00	3,133,864	3,133,864

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
Apartments High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Commercial	0.00	5.68	0.00	0.00	100.00	0.00	62.55	0	37.45

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Enclosed Parking with Elevator	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Strip Mall	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Unenclosed Parking with Elevator	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
User Defined Commercial	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1508	1.2886	0.5496	8.2200e-003		0.1042	0.1042		0.1042	0.1042						
NaturalGas Unmitigated	0.1583	1.3530	0.5771	8.6400e-003		0.1094	0.1094		0.1094	0.1094						

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					
Apartments High Rise	14646.1	0.1580	1.3497	0.5744	8.6200e-003		0.1091	0.1091		0.1091	0.1091						
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Strip Mall	33.6941	3.6000e-004	3.3000e-003	2.7700e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004						
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.1583**	**1.3530**	**0.5771**	**8.6400e-003**		**0.1094**	**0.1094**		**0.1094**	**0.1094**						

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					
Apartments High Rise	13.9492	0.1504	1.2855	0.5470	8.2100e-003		0.1039	0.1039		0.1039	0.1039						
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Strip Mall	0.0313314	3.4000e-004	3.0700e-003	2.5800e-003	2.0000e-005		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004						
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.1508**	**1.2886**	**0.5496**	**8.2300e-003**		**0.1042**	**0.1042**		**0.1042**	**0.1042**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	13.5872	1.0489	48.0828	5.7100e-003		0.3057	0.3057		0.3057	0.3057						
Unmitigated	13.5872	1.0489	48.0828	5.7100e-003		0.3057	0.3057		0.3057	0.3057						

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	0.9795					0.0000	0.0000		0.0000	0.0000						
Consumer Products	11.1080					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0582	0.4977	0.2118	3.1800e-003		0.0402	0.0402		0.0402	0.0402						
Landscaping	1.4414	0.5513	47.8710	2.5300e-003		0.2655	0.2655		0.2655	0.2655						
Total	**13.5872**	**1.0489**	**48.0828**	**5.7100e-003**		**0.3057**	**0.3057**		**0.3057**	**0.3057**						

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	0.9795					0.0000	0.0000		0.0000	0.0000						
Consumer Products	11.1080					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0582	0.4977	0.2118	3.1800e-003		0.0402	0.0402		0.0402	0.0402						
Landscaping	1.4414	0.5513	47.8710	2.5300e-003		0.2655	0.2655		0.2655	0.2655						
Total	**13.5872**	**1.0489**	**48.0828**	**5.7100e-003**		**0.3057**	**0.3057**		**0.3057**	**0.3057**						

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	12	300	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (300 - 600 HP)	0.4923	1.3760	1.2553	2.3700e-003		0.0724	0.0724		0.0724	0.0724						
Total	**0.4923**	**1.3760**	**1.2553**	**2.3700e-003**		**0.0724**	**0.0724**		**0.0724**	**0.0724**						

11.0 Vegetation

CalEEMod Version: CalEEMod.2016.3.2

Date: 7/29/2020 3:17 PM

8th, Grand and Hope - Construction (Onsite) - Los Angeles-South Coast County, Winter

8th, Grand and Hope - Construction (Onsite)

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1.00	User Defined Unit	0.00	1.00	0
Enclosed Parking with Elevator	198.00	Space	0.00	79,200.00	0
Unenclosed Parking with Elevator	438.00	Space	0.00	175,200.00	0
Apartments High Rise	580.00	Dwelling Unit	0.83	548,960.00	1404
Strip Mall	7.50	1000sqft	0.00	7,499.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	616	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SB100 Renewable Portfolio Standards - Year 2025 = 616 lbs/MWh

Land Use - Project specific land use sq ft; total of 0.83 acres; User Defined is for purposes of running LADOT VMT data instead of CalEEMod default.

Construction Phase - Consistent with Project Description

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Site Specific

Off-road Equipment - Project Specific Equipment List

Trips and VMT - Number of hauls reflect total amount of material requiring transport; Haul length reflects round trip to Irwindale Landfill. Foundation vehicle class changed to HHDT to reflect concrete trucks

Demolition -

Grading -

Architectural Coating -

Vehicle Trips - LADOT VMT Calculator

Woodstoves - No Wood Stoves; Reflects PDF AQ-2

Area Coating -

Energy Use - Consistency with Section 120.6(c) CBS, Mandatory Requirements for Enclosed Parking Garages

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - City of LA Waste Diversion Rate

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps -

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tblLandUse	LandUseSquareFeet	580,000.00	548,960.00
tblLandUse	LandUseSquareFeet	7,500.00	7,499.00
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tblVehicleTrips	SU_TR	20.43	0.00
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tblVehicleTrips	WD_TR	0.00	2,398.00
tblWoodstoves	NumberCatalytic	29.00	0.00
tblWoodstoves	NumberNoncatalytic	29.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	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					
2022	1.8463	24.2209	17.4727	0.0575	7.4104	0.6998	8.1101	1.1225	0.6853	1.8078						
2023	2.7979	21.5120	24.9411	0.0418	0.0173	0.8455	0.8533	5.1400e-003	0.8166	0.8195						
2024	2.6375	19.3239	24.6659	0.0418	7.8000e-003	0.7509	0.7587	2.8900e-003	0.7249	0.7277						
2025	31.0916	28.4095	38.7137	0.0682	9.7700e-003	1.0627	1.0725	3.5800e-003	1.0148	1.0184						
Maximum	**31.0916**	**28.4095**	**38.7137**	**0.0682**	**7.4104**	**1.0627**	**8.1101**	**1.1225**	**1.0148**	**1.8078**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.8463	24.2209	17.4727	0.0575	2.8919	0.6998	3.5917	0.4383	0.6853	1.1236						
2023	2.7979	21.5120	24.9411	0.0418	0.0173	0.8455	0.8533	5.1400e-003	0.8166	0.8195						
2024	2.6375	19.3239	24.6659	0.0418	7.8000e-003	0.7509	0.7587	2.8900e-003	0.7249	0.7277						
2025	31.0916	28.4095	38.7137	0.0682	9.7700e-003	1.0627	1.0725	3.5800e-003	1.0148	1.0184						
Maximum	**31.0916**	**28.4095**	**38.7137**	**0.0682**	**2.8919**	**1.0627**	**3.5917**	**0.4383**	**1.0148**	**1.1236**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**60.69**	**0.00**	**41.86**	**60.33**	**0.00**	**15.64**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2022	7/31/2022	6	52	
2	Grading	Grading	8/1/2022	10/31/2022	6	79	
3	Foundation	Trenching	11/1/2022	4/15/2023	6	143	
4	Building Construction	Building Construction	4/16/2023	6/1/2025	6	666	
5	Architectural Coating	Architectural Coating	1/1/2025	6/1/2025	6	130	
6	Paving/Landscaping	Paving	3/1/2025	6/1/2025	6	79	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,111,644; Residential Outdoor: 370,548; Non-Residential Indoor: 11,250; Non-Residential Outdoor: 3,750; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Bore/Drill Rigs	3	8.00	221	0.50
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Foundation	Plate Compactors	2	8.00	8	0.43
Foundation	Pumps	2	8.00	84	0.74
Foundation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Foundation	Welders	2	8.00	46	0.45
Building Construction	Aerial Lifts	2	8.00	63	0.31
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Building Construction	Signal Boards	2	8.00	6	0.82
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Architectural Coating	Air Compressors	1	8.00	78	0.48
Paving/Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
Paving/Landscaping	Pavers	0	8.00	130	0.42
Paving/Landscaping	Paving Equipment	1	8.00	132	0.36

Paving/Landscaping	Plate Compactors	1	8.00	8	0.43
Paving/Landscaping	Rollers	1	8.00	80	0.38
Paving/Landscaping	Skid Steer Loaders	2	8.00	65	0.37
Paving/Landscaping	Surfacing Equipment	1	8.00	263	0.30
Paving/Landscaping	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	40.00	0.00	1,250.00	0.00	0.10	0.10	LD_Mix	HDT_Mix	HHDT
Grading	7	60.00	0.00	8,690.00	0.00	0.10	0.10	LD_Mix	HDT_Mix	HHDT
Foundation	7	100.00	150.00	0.00	0.00	0.10	0.10	LD_Mix	HHDT	HHDT
Building Construction	15	550.00	20.00	0.00	0.00	0.10	0.10	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	0.00	0.10	0.10	LD_Mix	HDT_Mix	HHDT
Paving/Landscaping	8	40.00	10.00	0.00	0.00	0.10	0.10	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.4074	0.0000	7.4074	1.1215	0.0000	1.1215						
Off-Road	1.5903	12.7096	16.6415	0.0267		0.6985	0.6985		0.6841	0.6841						
Total	**1.5903**	**12.7096**	**16.6415**	**0.0267**	**7.4074**	**0.6985**	**8.1058**	**1.1215**	**0.6841**	**1.8056**						

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	0.0413	2.1081	0.3691	2.2700e-003	2.6100e-003	1.0500e-003	3.6600e-003	7.6000e-004	1.0100e-003	1.7700e-003						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0346	9.8000e-003	0.1544	9.0000e-005	3.9000e-004	2.5000e-004	6.4000e-004	1.6000e-004	2.3000e-004	3.9000e-004						
Total	**0.0759**	**2.1179**	**0.5235**	**2.3600e-003**	**3.0000e-003**	**1.3000e-003**	**4.3000e-003**	**9.2000e-004**	**1.2400e-003**	**2.1600e-003**						

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					2.8889	0.0000	2.8889	0.4374	0.0000	0.4374						
Off-Road	1.5903	12.7096	16.6415	0.0267		0.6985	0.6985		0.6841	0.6841						
Total	**1.5903**	**12.7096**	**16.6415**	**0.0267**	**2.8889**	**0.6985**	**3.5874**	**0.4374**	**0.6841**	**1.1215**						

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	0.0413	2.1081	0.3691	2.2700e-003	2.6100e-003	1.0500e-003	3.6600e-003	7.6000e-004	1.0100e-003	1.7700e-003						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0346	9.8000e-003	0.1544	9.0000e-005	3.9000e-004	2.5000e-004	6.4000e-004	1.6000e-004	2.3000e-004	3.9000e-004						
Total	**0.0759**	**2.1179**	**0.5235**	**2.3600e-003**	**3.0000e-003**	**1.3000e-003**	**4.3000e-003**	**9.2000e-004**	**1.2400e-003**	**2.1600e-003**						

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1285	0.0000	0.1285	0.0195	0.0000	0.0195						
Off-Road	1.4381	14.3068	15.5521	0.0470		0.5261	0.5261		0.4840	0.4840						
Total	**1.4381**	**14.3068**	**15.5521**	**0.0470**	**0.1285**	**0.5261**	**0.6545**	**0.0195**	**0.4840**	**0.5034**						

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	0.1888	9.6468	1.6890	0.0104	0.0119	4.8200e-003	0.0168	3.4800e-003	4.6100e-003	8.0900e-003						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0520	0.0147	0.2315	1.3000e-004	5.9000e-004	3.7000e-004	9.7000e-004	2.3000e-004	3.4000e-004	5.8000e-004						
Total	**0.2408**	**9.6615**	**1.9206**	**0.0105**	**0.0125**	**5.1900e-003**	**0.0177**	**3.7100e-003**	**4.9500e-003**	**8.6700e-003**						

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					0.0501	0.0000	0.0501	7.5900e-003	0.0000	7.5900e-003						
Off-Road	1.4381	14.3068	15.5521	0.0470		0.5261	0.5261		0.4840	0.4840						
Total	**1.4381**	**14.3068**	**15.5521**	**0.0470**	**0.0501**	**0.5261**	**0.5762**	**7.5900e-003**	**0.4840**	**0.4916**						

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	0.1888	9.6468	1.6890	0.0104	0.0119	4.8200e-003	0.0168	3.4800e-003	4.6100e-003	8.0900e-003						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0520	0.0147	0.2315	1.3000e-004	5.9000e-004	3.7000e-004	9.7000e-004	2.3000e-004	3.4000e-004	5.8000e-004						
Total	**0.2408**	**9.6615**	**1.9206**	**0.0105**	**0.0125**	**5.1900e-003**	**0.0177**	**3.7100e-003**	**4.9500e-003**	**8.6700e-003**						

3.4 Foundation - 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	1.5022	11.0417	13.5142	0.0224		0.5488	0.5488		0.5416	0.5416						
Total	**1.5022**	**11.0417**	**13.5142**	**0.0224**		**0.5488**	**0.5488**		**0.5416**	**0.5416**						

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						
Vendor	0.2575	13.1547	2.3032	0.0142	0.0163	6.5800e-003	0.0229	4.7400e-003	6.2900e-003	0.0110						

Worker	0.0866	0.0245	0.3859	2.2000e-004	9.9000e-004	6.2000e-004	1.6100e-003	3.9000e-004	5.7000e-004	9.7000e-004						
Total	**0.3441**	**13.1792**	**2.6891**	**0.0144**	**0.0173**	**7.2000e-003**	**0.0245**	**5.1300e-003**	**6.8600e-003**	**0.0120**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5022	11.0417	13.5142	0.0224		0.5488	0.5488		0.5416	0.5416						
Total	**1.5022**	**11.0417**	**13.5142**	**0.0224**		**0.5488**	**0.5488**		**0.5416**	**0.5416**						

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						
Vendor	0.2575	13.1547	2.3032	0.0142	0.0163	6.5800e-003	0.0229	4.7400e-003	6.2900e-003	0.0110						
Worker	0.0866	0.0245	0.3859	2.2000e-004	9.9000e-004	6.2000e-004	1.6100e-003	3.9000e-004	5.7000e-004	9.7000e-004						
Total	**0.3441**	**13.1792**	**2.6891**	**0.0144**	**0.0173**	**7.2000e-003**	**0.0245**	**5.1300e-003**	**6.8600e-003**	**0.0120**						

3.4 Foundation - 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	1.3961	10.3851	13.4587	0.0224		0.4753	0.4753		0.4692	0.4692						
Total	**1.3961**	**10.3851**	**13.4587**	**0.0224**		**0.4753**	**0.4753**		**0.4692**	**0.4692**						

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						
Vendor	0.1804	11.1052	1.9257	0.0135	0.0163	4.4800e-003	0.0208	4.7500e-003	4.2900e-003	9.0300e-003						
Worker	0.0796	0.0217	0.3490	2.1000e-004	9.9000e-004	6.1000e-004	1.6000e-003	3.9000e-004	5.6000e-004	9.5000e-004						
Total	**0.2600**	**11.1270**	**2.2747**	**0.0137**	**0.0173**	**5.0900e-003**	**0.0224**	**5.1400e-003**	**4.8500e-003**	**9.9800e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3961	10.3851	13.4587	0.0224		0.4753	0.4753		0.4692	0.4692						
Total	**1.3961**	**10.3851**	**13.4587**	**0.0224**		**0.4753**	**0.4753**		**0.4692**	**0.4692**						

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						
Vendor	0.1804	11.1052	1.9257	0.0135	0.0163	4.4800e-003	0.0208	4.7500e-003	4.2900e-003	9.0300e-003						
Worker	0.0796	0.0217	0.3490	2.1000e-004	9.9000e-004	6.1000e-004	1.6000e-003	3.9000e-004	5.6000e-004	9.5000e-004						
Total	**0.2600**	**11.1270**	**2.2747**	**0.0137**	**0.0173**	**5.0900e-003**	**0.0224**	**5.1400e-003**	**4.8500e-003**	**9.9800e-003**						

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3384	19.2633	22.7555	0.0397		0.8418	0.8418		0.8131	0.8131						
Total	**2.3384**	**19.2633**	**22.7555**	**0.0397**		**0.8418**	**0.8418**		**0.8131**	**0.8131**						

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						
Vendor	0.0216	0.9710	0.2660	9.9000e-004	2.3700e-003	3.3000e-004	2.7100e-003	7.4000e-004	3.2000e-004	1.0600e-003						
Worker	0.4379	0.1196	1.9196	1.1600e-003	5.4300e-003	3.3700e-003	8.7900e-003	2.1500e-003	3.1000e-003	5.2500e-003						
Total	**0.4595**	**1.0906**	**2.1856**	**2.1500e-003**	**7.8000e-003**	**3.7000e-003**	**0.0115**	**2.8900e-003**	**3.4200e-003**	**6.3100e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3384	19.2633	22.7555	0.0397		0.8418	0.8418		0.8131	0.8131						
Total	**2.3384**	**19.2633**	**22.7555**	**0.0397**		**0.8418**	**0.8418**		**0.8131**	**0.8131**						

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						
Vendor	0.0216	0.9710	0.2660	9.9000e-004	2.3700e-003	3.3000e-004	2.7100e-003	7.4000e-004	3.2000e-004	1.0600e-003						
Worker	0.4379	0.1196	1.9196	1.1600e-003	5.4300e-003	3.3700e-003	8.7900e-003	2.1500e-003	3.1000e-003	5.2500e-003						
Total	**0.4595**	**1.0906**	**2.1856**	**2.1500e-003**	**7.8000e-003**	**3.7000e-003**	**0.0115**	**2.8900e-003**	**3.4200e-003**	**6.3100e-003**						

3.5 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	2.2125	18.2503	22.6613	0.0397		0.7473	0.7473		0.7215	0.7215						
Total	**2.2125**	**18.2503**	**22.6613**	**0.0397**		**0.7473**	**0.7473**		**0.7215**	**0.7215**						

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						
Vendor	0.0206	0.9669	0.2528	9.8000e-004	2.3700e-003	3.0000e-004	2.6800e-003	7.4000e-004	2.9000e-004	1.0300e-003						
Worker	0.4044	0.1067	1.7518	1.1200e-003	5.4300e-003	3.3200e-003	8.7400e-003	2.1500e-003	3.0500e-003	5.2000e-003						
Total	**0.4250**	**1.0737**	**2.0046**	**2.1000e-003**	**7.8000e-003**	**3.6200e-003**	**0.0114**	**2.8900e-003**	**3.3400e-003**	**6.2300e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2125	18.2503	22.6613	0.0397		0.7473	0.7473		0.7215	0.7215						
Total	**2.2125**	**18.2503**	**22.6613**	**0.0397**		**0.7473**	**0.7473**		**0.7215**	**0.7215**						

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						
Vendor	0.0206	0.9669	0.2528	9.8000e-004	2.3700e-003	3.0000e-004	2.6800e-003	7.4000e-004	2.9000e-004	1.0300e-003						
Worker	0.4044	0.1067	1.7518	1.1200e-003	5.4300e-003	3.3200e-003	8.7400e-003	2.1500e-003	3.0500e-003	5.2000e-003						
Total	**0.4250**	**1.0737**	**2.0046**	**2.1000e-003**	**7.8000e-003**	**3.6200e-003**	**0.0114**	**2.8900e-003**	**3.3400e-003**	**6.2300e-003**						

3.5 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	2.0907	17.2361	22.5734	0.0397		0.6575	0.6575		0.6346	0.6346						
Total	**2.0907**	**17.2361**	**22.5734**	**0.0397**		**0.6575**	**0.6575**		**0.6346**	**0.6346**						

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						
Vendor	0.0198	0.9625	0.2429	9.7000e-004	2.3700e-003	2.8000e-004	2.6500e-003	7.4000e-004	2.6000e-004	1.0000e-003						
Worker	0.3756	0.0957	1.6042	1.0800e-003	5.4300e-003	3.2800e-003	8.7100e-003	2.1500e-003	3.0200e-003	5.1700e-003						
Total	**0.3954**	**1.0582**	**1.8471**	**2.0500e-003**	**7.8000e-003**	**3.5600e-003**	**0.0114**	**2.8900e-003**	**3.2800e-003**	**6.1700e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0907	17.2361	22.5734	0.0397		0.6575	0.6575		0.6346	0.6346						
Total	**2.0907**	**17.2361**	**22.5734**	**0.0397**		**0.6575**	**0.6575**		**0.6346**	**0.6346**						

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						
Vendor	0.0198	0.9625	0.2429	9.7000e-004	2.3700e-003	2.8000e-004	2.6500e-003	7.4000e-004	2.6000e-004	1.0000e-003						
Worker	0.3756	0.0957	1.6042	1.0800e-003	5.4300e-003	3.2800e-003	8.7100e-003	2.1500e-003	3.0200e-003	5.1700e-003						
Total	**0.3954**	**1.0582**	**1.8471**	**2.0500e-003**	**7.8000e-003**	**3.5600e-003**	**0.0114**	**2.8900e-003**	**3.2800e-003**	**6.1700e-003**						

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Archit. Coating	27.5020					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2278	1.5273	2.4122	3.9600e-003		0.0687	0.0687		0.0687	0.0687						
Total	**27.7298**	**1.5273**	**2.4122**	**3.9600e-003**		**0.0687**	**0.0687**		**0.0687**	**0.0687**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0273	6.9600e-003	0.1167	8.0000e-005	3.9000e-004	2.4000e-004	6.3000e-004	1.6000e-004	2.2000e-004	3.8000e-004						
Total	**0.0273**	**6.9600e-003**	**0.1167**	**8.0000e-005**	**3.9000e-004**	**2.4000e-004**	**6.3000e-004**	**1.6000e-004**	**2.2000e-004**	**3.8000e-004**						

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	27.5020					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2278	1.5273	2.4122	3.9600e-003		0.0687	0.0687		0.0687	0.0687						
Total	**27.7298**	**1.5273**	**2.4122**	**3.9600e-003**		**0.0687**	**0.0687**		**0.0687**	**0.0687**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0273	6.9600e-003	0.1167	8.0000e-005	3.9000e-004	2.4000e-004	6.3000e-004	1.6000e-004	2.2000e-004	3.8000e-004						
Total	**0.0273**	**6.9600e-003**	**0.1167**	**8.0000e-005**	**3.9000e-004**	**2.4000e-004**	**6.3000e-004**	**1.6000e-004**	**2.2000e-004**	**3.8000e-004**						

3.7 Paving/Landscaping - 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	0.8113	8.0928	11.5263	0.0219		0.3323	0.3323		0.3077	0.3077						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.8113**	**8.0928**	**11.5263**	**0.0219**		**0.3323**	**0.3323**		**0.3077**	**0.3077**						

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						
Vendor	9.8800e-003	0.4812	0.1214	4.8000e-004	1.1900e-003	1.4000e-004	1.3300e-003	3.7000e-004	1.3000e-004	5.0000e-004						
Worker	0.0273	6.9600e-003	0.1167	8.0000e-005	3.9000e-004	2.4000e-004	6.3000e-004	1.6000e-004	2.2000e-004	3.8000e-004						
Total	**0.0372**	**0.4882**	**0.2381**	**5.6000e-004**	**1.5800e-003**	**3.8000e-004**	**1.9600e-003**	**5.3000e-004**	**3.5000e-004**	**8.8000e-004**						

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	0.8113	8.0928	11.5263	0.0219		0.3323	0.3323		0.3077	0.3077						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.8113**	**8.0928**	**11.5263**	**0.0219**		**0.3323**	**0.3323**		**0.3077**	**0.3077**						

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						
Vendor	9.8800e-003	0.4812	0.1214	4.8000e-004	1.1900e-003	1.4000e-004	1.3300e-003	3.7000e-004	1.3000e-004	5.0000e-004						
Worker	0.0273	6.9600e-003	0.1167	8.0000e-005	3.9000e-004	2.4000e-004	6.3000e-004	1.6000e-004	2.2000e-004	3.8000e-004						
Total	**0.0372**	**0.4882**	**0.2381**	**5.6000e-004**	**1.5800e-003**	**3.8000e-004**	**1.9600e-003**	**5.3000e-004**	**3.5000e-004**	**8.8000e-004**						

CO Hotspots Analysis

Traffic Volume		
Intersection -->	Figueroa and Olympic	
Peak Hour -->	AM	PM
Turning Movement		
NBL	318	333
NBT	1,518	1,192
NBR	166	249
SBL	0	
SBT	0	
SBR	0	
EBL	305	230
EBT	1,252	1,461
EBR	118	279
WBL	41	116
WBT	1,589	1,914
WBR	489	335
Total (Peak Hour)	5,796	6,109
Total (Daily)	**57,960**	**61,090**

8th, Grand and Hope Project
Draft EIR
Appendix B-3-Greenhouse Gas Emissions Worksheets and Modeling Output Files

- Appendix B-3: Greenhouse Gas Worksheets and Modeling Output Files
  - Appendix B-3.1: GHG Modeling Parameters and Summary of Emissions
    - GHG Emissions Summary
    - GHG Parameters and Summary
      - Land Use Site Characteristics
      - Parking Structure Electricity Calculations
    - VMT Calculations for CalEEMod
  - Appendix B-3.2: CalEEMod Outputs
    - Buildout (Construction and Operations)

8th, Grand and Hope

Operational Emissions Summary (GHG)

CalEEMod Output Summary	Project with PDFs	Project with no PDFs
Baseline (Buildout Year)[a]	**CO_2e**	**CO_2e**
Area	0	0
Energy (Natural Gas)	0	0
Mobile	0	0
Emergency Generators	0	0
Solid Waste	0	0
Water/Wastewater	0	0
Total	0	0
Buildout (Buildout Year)[b]		
Area	39	129
Energy (Natural Gas)	1,057	1,149
Mobile	1,331	3,304
Electric Vehicle Charging Credit	(93)	(93)
Solid Waste	33	138
Water/Wastewater	214	268
Construction	165	165
Total	2,747	5,062
Project (Buildout less Baseline)		
Area	39	129
Energy (Natural Gas)	1,057	1,149
Mobile	1,331	3,304
Electric Vehicle Charging Credit	(93)	(93)
Emergency Generators	1	1
Solid Waste	33	138
Water/Wastewater	214	268
Construction	165	165
Total	**2,747**	**5,062**

[a] Existing Uses

[b] Please refer to CalEEMod outputs for Future uses

GHG SOURCE CALCULATIONS:

Trip Generation Rates (ADT):

	Square Footage	Quantity	Units	Daily Trips Buildout	Daily Trips No PDFs	Daily Trip Rate Buildout	CalEEMod Default Weekday	CalEEMod Default Saturday	CalEEMod Default Sunday	Adjusted Trips (Buildout) Adjustment	Adjusted Trips (Buildout) Sat	Adjusted Trips (Buildout) Sun	Adjusted Trips (Buildout/with TDM) Adjustment	Adjusted Trips (Buildout/with TDM) Sat	Adjusted Trips (Buildout/with TDM) Sun
New Land Uses (Daily Trip Generation)															
Apartments High Rise	548,960	580	DU												
Retail	7,499	7.499	KSF												
Parking	254,400	636	spaces												
Total: (Excluding Parking)	556,459														

	Square Footage	Quantity	Units	Daily Trips Buildout	Daily Trips No PDFs	Daily Trip Rate Buildout	CalEEMod Default Weekday	CalEEMod Default Saturday	CalEEMod Default Sunday	Adjusted Trips (Buildout) Adjustment	Adjusted Trips (Buildout) Sat	Adjusted Trips (Buildout) Sun	Adjusted Trips (Buildout/with TDM) Adjustment	Adjusted Trips (Buildout/with TDM) Sat	Adjusted Trips (Buildout/with TDM) Sun
Baseline (Buildout Year) (Daily Trip Generation)									Buildout	No PDFs	Weekday	Saturday			
Parking	36,178	324	spaces												
Total:	36,178														

ENERGY

Calculation of Parking Garage Ventilation Energy Factor

Full Power Ventilation Flowrate:	0.5	cfm/sf	Section 120.6(c) of California Building Code, Mandatory Requirements for Enclosed Parking Garages, provides a minimum 0.15 cfm/sf flowrate. Conservatively assumed 0.5 cfm/sf.
Fan Horsepower/1,000 sf:	0.19	hp/1,000 sf	Fan Horsepower = (CFM x Static Pressure of 1.6 in WC)/(6356 x Motor Fan Efficiency of 65%)
Setback Mode Power Ventilation Flowrate:	0.05	cfm/sf	Energy Star technical reference recommends a minimum flow rate of 0.05 cfm/sf when fan is in setback mode.
Fan Horsepower/1,000 sf:	0.02	hp/1,000 sf	Fan Horsepower = (CFM x Static Pressure of 1.6 in WC)/(6356 x Motor Fan Efficiency of 65%)
Fan Horsepower/1,000 sf per Day:	1.51	hp/1,000 sf/Day	Energy Star technical reference recommends 6 hours per day at full power and 18 hours per day at 0.05 cfm/sf in setback mode
Horsepower to kW Conv.	0.746	kW per hp	
Fan kW/1,000 sf per Day:	1.13	kW/1,000 sf/Day	
Annual kW/sf	0.41	kWh/sf Annual	
Adjustment:	0.46	kWh/sf Annual	(CalEEMod applies mititgation to all land uses. So, this adjustement accounts for the 10% reduction in lighting associated with Title 24)

Source: Energy Star Portfolio Manger Technical Reference: Parking and the Energy Star Score in the United States and Canada, August 2018

Buildout Parking Garage Lighting

Square Footage =	254,400	ft2	
Allowed Lighting Power =	0.2	watts per ft2	(Table 140.6 (Complete Building Method Lighting Power Density Value) of the 2013 Building Energy Efficiency Standards)
Annual kW =	444,595		conservatively assumes maximum lighting power 24 hours per day)
Annual kW/sq ft =	**1.75**	kWh/sq ft annual	
Adjustment:	2.33		(CalEEMod applies mititgation to all land uses. So, this adjustement accounts for the 25% reduction in lighting associated with Title 24)

Elevator (no change CalEEMod Default) **0.19** kWh/sq ft annual

APPLICABLE GHG REDUCTION MEASURES Included within CalEEMod

Energy Reduction Measures Included in CalEEMod Run:
High Efficiency Lighting (25%)
Title 24 (Above 10%)

Water Reduction Measures Included in CalEEMod Run:
20 Percent Reduction Beyond Code Requirements

Waste Diversion Rate Reduction Measures Included in CalEEMod Run:
-Project assumes a 76.4% Diversion Rate (Los Angeles, 2011)

Area Source Reduction Measure Included in CalEEMod Run:
-New Residential DU's only include natural gas fireplaces

GHG Emissions Reductions for Residential Uses Associated with Electric Vehicle Charging Stations/Plugins

Step 1: Estimating GHG Emisisons Reduction to Replace Gasoline/Diesel Vehicle with Electric Vehicle

LADWP Electricity Emission Factor[1]	0.27	MTCO2E/MWh
Fuel Economy of Electric Vehicle[2]	0.33	kWh/mile
Electric Vehicle GHG Emissions	89.4	grams/mile
GHG Emissions from Residential Miles Traveled (CalEEMod)[3]	385.2	grams/mile
GHG Emissions Reduction from Additional Electric Vehicles, per mile	295.8	grams/mile

Step 2: Estimating Project Residential-Related VMT GHG Emissions

Residential Average Yearly VMT with TDM and PDFs[4]	3,136,594	miles/year
Percent of Residential Miles Driven in Electric Vehicles due to this Measure	10.0%	
Residential VMT that is Displaced by Evs due to this Measure	313,659	miles/year
GHG Emisisons Reduction from Residential Electric Vehicles	**93**	MTCO2E/MWh

Energy Usage for Charging Vehicles	**103,508**	kWH/year

Notes:
1) CO2 intensity factor reflects a 2025 RPS for LADWP (616 lbs of CO2E/MWh).
2) US Department of Energy, 2013. Benefits and Considerations of Electricity as a Vehicle Fuel. Available at: http://afdc.energy.gov/fuels/electricity_benefits.html.
3) CalEEMod Output file provided in Appendix XX.X of this Draft EIR.
4) Residential charging of vehicles would primarily occur over night, while commercial use charging of vehicles would primarily occur during the day. In addition, it is assumed that the charging stations/plugins for residential uses would be fully utlized which is supported by the projected number of electric vehicles in the future. Bloomberg New Energy Finance projects that electric vehicles will represent 35 percent of global new car sales by 2040 (https://about.bnef.com/blog/electric-vehicles-to-be-35-of-global-new-car-sales-by-2040/).

8th, Hope and Grand

VMT Calculations for CalEEMod Inputs

VMT Calculator Table[a]

Proposed Project	New	Pass-by	Total
Daily Vehicle Trips	1,500	898	2,398
Daily VMT	8,617		8,617

With TDM Mitigation	New	Pass-by	Total
Daily Vehicle Trips	1,500	898	2,398
Daily VMT	8,617		8,617

Service Population	1337
Total VMT per Capita	3.4

[a] Provided by The Mobility Group

CalEEMod Input Calculations

Primary (%)	Passby (%)	Pass-by Trip Length (mi)	Pass-by Daily VMT	Primary Daily VMT	Primary Trip Length (mi)
62.6%	37.4%	0.1	89.8	8,527	5.6848
62.6%	37.4%	0.1	89.8	8,527	5.6848

8th, Grand and Hope

LADOT VMT Calculator Data - MXD Reductions

VMT Summary

	Existing	Proposed Project	With Mitigation	Project Weekday Trips	Weekend Trips	Weekend Vs. Weekday Ratio
Daily Trips	0	1,500	1,500	1	1	**1.00**
Daily VMT	0	8,617	8,617			

Project without TDM (MXD Data)

	Unadjusted Trips	MXD Adjustment	MXD Trips	Average Trip Length	Unadjusted VMT	MXD VMT	Reduction vs. Unadjusted MXD (%)
Home Based Work Production	785	49.3%	398	5.7	4,475	2,269	
Home Based Other Production	2,103	74.1%	544	4.1	8,622	2,230	
Non-Home Based Other Production	139	25.2%	104	8.4	1,168	874	
Home-Based Work Attraction	43	74.4%	11	8.2	353	90	
Home-Based Other Attraction	699	74.5%	178	6.7	4,683	1,193	
Non-Home Based Other Attraction	350	24.3%	265	7.4	2,590	1,961	**61%**
Total	**4,119**				**21,891**	**8,617**	

Project with TDM (MXD Data)

	Proposed Project			*Project with Mitigation Measures*		
	TDM Adjustment	Project Trips	Project VMT	TDM Adjustment	Mitigated Trips	Mitigated VMT
Home Based Work Production	0.0%	398	2,269	0.0%	398	2,269
Home Based Other Production	0.0%	544	2,230	0.0%	544	2,230
Non-Home Based Other Production	0.0%	104	874	0.0%	104	874
Home-Based Work Attraction	0.0%	11	90	0.0%	11	90
Home-Based Other Attraction	0.0%	178	1,193	0.0%	178	1,193
Non-Home Based Other Attraction	0.0%	265	1,961	0.0%	265	1,961
Total		**1,500**	**8,617**		**1,500**	**8,617**
Residential VMT			4,499			4,499

61%

Source: The Mobility Group

CalEEMod Version: CalEEMod.2016.3.2

Date: 7/29/2020 3:13 PM

8th, Grand and Hope - Construction and Operations - Los Angeles-South Coast County, Annual

8th, Grand and Hope - Construction and Operations

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1.00	User Defined Unit	0.00	1.00	0
Enclosed Parking with Elevator	198.00	Space	0.00	79,200.00	0
Unenclosed Parking with Elevator	438.00	Space	0.00	175,200.00	0
Apartments High Rise	580.00	Dwelling Unit	0.83	548,960.00	1404
Strip Mall	7.50	1000sqft	0.00	7,499.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	616	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SB100 Renewable Portfolio Standards - Year 2025 = 616 lbs/MWh

Land Use - Project specific land use sq ft; total of 0.83 acres; User Defined is for purposes of running LADOT VMT data instead of CalEEMod default.

Construction Phase - Consistent with Project Description

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Project Specific Equipment List

Off-road Equipment - Site Specific

Off-road Equipment - Project Specific Equipment List

Trips and VMT - Number of hauls reflect total amount of material requiring transport; Haul length reflects round trip to Irwindale Landfill. Foundation vehicle class changed to HHDT to reflect concrete trucks

Demolition -

Grading -

Architectural Coating -

Vehicle Trips - LADOT VMT Calculator

Woodstoves - No Wood Stoves; Reflects PDF AQ-2

Area Coating -

Energy Use - Consistency with Section 120.6(c) CBS, Mandatory Requirements for Enclosed Parking Garages

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - City of LA Waste Diversion Rate

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	130.00
tblConstructionPhase	NumDays	100.00	666.00
tblConstructionPhase	NumDays	10.00	52.00
tblConstructionPhase	NumDays	2.00	79.00
tblConstructionPhase	NumDays	5.00	79.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblEnergyUse	LightingElect	1.75	2.33
tblEnergyUse	LightingElect	1.75	2.33
tblEnergyUse	T24E	3.92	0.46
tblFireplaces	FireplaceDayYear	25.00	100.00
tblFireplaces	FireplaceHourDay	3.00	6.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	493.00	15.00
tblFireplaces	NumberNoFireplace	58.00	0.00
tblFireplaces	NumberWood	29.00	0.00
tblGrading	MaterialExported	0.00	89,750.00
tblLandUse	LandUseSquareFeet	0.00	1.00
tblLandUse	LandUseSquareFeet	580,000.00	548,960.00
tblLandUse	LandUseSquareFeet	7,500.00	7,499.00
tblLandUse	LotAcreage	1.78	0.00
tblLandUse	LotAcreage	3.94	0.00
tblLandUse	LotAcreage	9.35	0.83
tblLandUse	LotAcreage	0.17	0.00
tblLandUse	Population	1,659.00	1,404.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	4.00	8.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	616
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	1,780.00	1,250.00
tblTripsAndVMT	HaulingTripNumber	11,219.00	8,690.00
tblTripsAndVMT	VendorTripLength	6.90	13.80
tblTripsAndVMT	VendorTripNumber	0.00	150.00
tblTripsAndVMT	VendorTripNumber	105.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	60.00
tblTripsAndVMT	WorkerTripNumber	18.00	100.00
tblTripsAndVMT	WorkerTripNumber	527.00	550.00
tblTripsAndVMT	WorkerTripNumber	105.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblVehicleTrips	CC_TL	8.40	5.68
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	PB_TP	0.00	37.45
tblVehicleTrips	PR_TP	0.00	62.55
tblVehicleTrips	ST_TR	4.98	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	ST_TR	0.00	2,398.00
tblVehicleTrips	SU_TR	3.65	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	SU_TR	0.00	2,398.00
tblVehicleTrips	WD_TR	4.20	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblVehicleTrips	WD_TR	0.00	2,398.00
tblWoodstoves	NumberCatalytic	29.00	0.00
tblWoodstoves	NumberNoncatalytic	29.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022																1,414.8134
2023																1,464.7522
2024																1,366.8097
2025																696.1234
Maximum																**1,464.7522**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022																1,414.8131
2023																1,464.7516
2024																1,366.8091
2025																696.1230
Maximum																**1,464.7516**

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

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area																39.0091
Energy																1,150.4980
Mobile																1,330.8952
Stationary																1.3757
Waste																138.1370
Water																267.5888

Total																**2,927.5036**

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																39.0091
Energy																1,057.2239
Mobile																1,330.8952
Stationary																1.3757
Waste																32.6003
Water																214.0710
Total																**2,675.1752**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.62**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2022	7/31/2022	6	52	
2	Grading	Grading	8/1/2022	10/31/2022	6	79	
3	Foundation	Trenching	11/1/2022	4/15/2023	6	143	
4	Building Construction	Building Construction	4/16/2023	6/1/2025	6	666	
5	Architectural Coating	Architectural Coating	1/1/2025	6/1/2025	6	130	
6	Paving/Landscaping	Paving	3/1/2025	6/1/2025	6	79	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,111,644; Residential Outdoor: 370,548; Non-Residential Indoor: 11,250; Non-Residential Outdoor: 3,750; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Bore/Drill Rigs	3	8.00	221	0.50

Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Skid Steer Loaders	1	8.00	65	0.37
Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Foundation	Plate Compactors	2	8.00	8	0.43
Foundation	Pumps	2	8.00	84	0.74
Foundation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Foundation	Welders	2	8.00	46	0.45
Building Construction	Aerial Lifts	2	8.00	63	0.31
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Building Construction	Signal Boards	2	8.00	6	0.82
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Architectural Coating	Air Compressors	1	8.00	78	0.48
Paving/Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
Paving/Landscaping	Pavers	0	8.00	130	0.42
Paving/Landscaping	Paving Equipment	1	8.00	132	0.36
Paving/Landscaping	Plate Compactors	1	8.00	8	0.43
Paving/Landscaping	Rollers	1	8.00	80	0.38
Paving/Landscaping	Skid Steer Loaders	2	8.00	65	0.37
Paving/Landscaping	Surfacing Equipment	1	8.00	263	0.30
Paving/Landscaping	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	40.00	0.00	1,250.00	14.70	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Grading	7	60.00	0.00	8,690.00	14.70	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Foundation	7	100.00	150.00	0.00	14.70	13.80	20.00	LD_Mix	HHDT	HHDT
Building Construction	15	550.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Landscaping	8	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust																0.0000
Off-Road																60.0531
Total																**60.0531**

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																108.7410
Vendor																0.0000
Worker																9.9300
Total																**118.6710**

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																0.0000
Off-Road																60.0530
Total																**60.0530**

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																108.7410
Vendor																0.0000
Worker																9.9300
Total																**118.6710**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust																0.0000
Off-Road																164.2453
Total																**164.2453**

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																755.9673
Vendor																0.0000
Worker																22.6290
Total																**778.5963**

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																0.0000
Off-Road																164.2451
Total																**164.2451**

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																755.9673
Vendor																0.0000

Worker																22.6290
Total																**778.5963**

3.4 Foundation - 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																48.9623
Total																**48.9623**

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
Vendor																218.9828
Worker																25.3025
Total																**244.2853**

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																48.9622
Total																**48.9622**

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
Vendor																218.9828
Worker																25.3025
Total																**244.2853**

3.4 Foundation - 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																83.1462
Total																**83.1462**

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
Vendor																356.2212
Worker																41.3924
Total																**397.6136**

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																83.1461
Total																**83.1461**

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
Vendor																356.2212
Worker																41.3924
Total																**397.6136**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																369.8204
Total																**369.8204**

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
Vendor																52.6151
Worker																561.5569
Total																**614.1720**

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																369.8200
Total																**369.8200**

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
Vendor																52.6151
Worker																561.5569
Total																**614.1720**

3.5 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																523.0677
Total																**523.0677**

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
Vendor																74.1220
Worker																769.6201
Total																**843.7420**

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																523.0671
Total																**523.0671**

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
Vendor																74.1220
Worker																769.6201
Total																**843.7420**

3.5 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																216.5644
Total																**216.5644**

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
Vendor																30.5199
Worker																306.2851
Total																**336.8049**

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																216.5641
Total																**216.5641**

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
Vendor																30.5199
Worker																306.2851
Total																**336.8049**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating																0.0000
Off-Road																22.1584
Total																**22.1584**

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
Vendor																0.0000
Worker																22.2753
Total																**22.2753**

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																0.0000
Off-Road																22.1584
Total																**22.1584**

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
Vendor																0.0000
Worker																22.2753
Total																**22.2753**

3.7 Paving/Landscaping - 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																75.5106
Paving																0.0000
Total																**75.5106**

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
Vendor																9.2733
Worker																13.5365
Total																**22.8099**

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																75.5105
Paving																0.0000
Total																**75.5105**

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
Vendor																9.2733
Worker																13.5365
Total																**22.8099**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated																1,330.8952
Unmitigated																1,330.8952

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
User Defined Commercial	2,398.00	2,398.00	2398.00	3,133,864	3,133,864
Total	2,398.00	2,398.00	2,398.00	3,133,864	3,133,864

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Commercial	0.00	5.68	0.00	0.00	100.00	0.00	62.55	0	37.45

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Enclosed Parking with Elevator	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Strip Mall	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Unenclosed Parking with Elevator	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
User Defined Commercial	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated																783.2968
Electricity Unmitigated																862.8689
NaturalGas Mitigated																273.9271
NaturalGas Unmitigated																287.6290

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					
Apartments High Rise	5.34583e+006																286.9688
Enclosed Parking with Elevator	0																0.0000
Strip Mall	12298.4																0.6602

Unenclosed Parking with Elevator	0																0.0000
User Defined Commercial	0																0.0000
Total																	**287.6290**

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					
Apartments High Rise	5.09144e+006																273.3132
Enclosed Parking with Elevator	0																0.0000
Strip Mall	11436																0.6139
Unenclosed Parking with Elevator	0																0.0000
User Defined Commercial	0																0.0000
Total																	**273.9271**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	2.29685e+006				644.3866
Enclosed Parking with Elevator	236016				66.2149
Strip Mall	101237				28.4022
Unenclosed Parking with Elevator	441504				123.8652
User Defined Commercial	0				0.0000
Total					**862.8689**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	2.17979e+006				611.5473
Enclosed Parking with Elevator	186239				52.2498
Strip Mall	86493.5				24.2660

Unenclosed Parking with Elevator	339450				95.2336
User Defined Commercial	0				0.0000
Total					**783.2968**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated																39.0091
Unmitigated																39.0091

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating																0.0000
Consumer Products																0.0000
Hearth																28.9877
Landscaping																10.0214
Total																**39.0091**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating																0.0000
Consumer Products																0.0000
Hearth																28.9877
Landscaping																10.0214

Total																**39.0091**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				214.0710
Unmitigated				267.5888

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	37.7893 / 23.8237				263.7419
Enclosed Parking with Elevator	0 / 0				0.0000
Strip Mall	0.555544 / 0.340495				3.8469
Unenclosed Parking with Elevator	0 / 0				0.0000
User Defined Commercial	0 / 0				0.0000
Total					**267.5888**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	30.2315 / 19.059				210.9935
Enclosed Parking with Elevator	0 / 0				0.0000
Strip Mall	0.444435 / 0.272396				3.0776
Unenclosed Parking with Elevator	0 / 0				0.0000
User Defined Commercial	0 / 0				0.0000

Total				**214.0710**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				32.6003
Unmitigated				138.1370

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	266.8				134.1741
Enclosed Parking with Elevator	0				0.0000
Strip Mall	7.88				3.9629
Unenclosed Parking with Elevator	0				0.0000
User Defined Commercial	0				0.0000
Total					**138.1370**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	62.9648				31.6651
Enclosed Parking with Elevator	0				0.0000
Strip Mall	1.85968				0.9352
Unenclosed Parking with Elevator	0				0.0000
User Defined Commercial	0				0.0000

Total				**32.6003**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	12	300	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (300 - 600 HP)																1.3757
Total																**1.3757**

11.0 Vegetation

CalEEMod Version: CalEEMod.2016.3.2

8th, Grand and Hope - Operations (No MXD) - Los Angeles-South Coast County, Annual

8th, Grand and Hope - Operations (No MXD)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1.00	User Defined Unit	0.00	1.00	0
Enclosed Parking with Elevator	198.00	Space	0.83	79,200.00	0
Unenclosed Parking with Elevator	438.00	Space	0.83	175,200.00	0
Apartments High Rise	580.00	Dwelling Unit	0.83	548,960.00	1659
Strip Mall	7.50	1000sqft	0.83	7,499.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	616	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SB100 Renewable Portfolio Standards - Year 2025 = 616 lbs/MWh
Land Use - Site Specific
Construction Phase - Site Specific
Off-road Equipment - Site Specific
Off-road Equipment - Site Specific
Off-road Equipment - Site Specific
Off-road Equipment - Site Specific
Off-road Equipment - Site Specific
Off-road Equipment - Site Specific
Off-road Equipment - Site Specific
Trips and VMT - site specific
Demolition -
Grading - see assumptions
Architectural Coating -
Vehicle Trips - LADOT VMT Calculator
Woodstoves - No Wood Stoves
Area Coating -
Energy Use - see assumptions
Water And Wastewater -
Solid Waste -
Construction Off-road Equipment Mitigation -
Area Mitigation -
Energy Mitigation -

Water Mitigation -

Waste Mitigation - City of LA Waste Diversion Rate

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	11,250.00	11,249.00
tblAreaCoating	Area_Nonresidential_Interior	11250	11249
tblConstructionPhase	NumDays	18.00	108.00
tblConstructionPhase	NumDays	230.00	555.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	8.00	66.00
tblConstructionPhase	NumDays	18.00	65.00
tblEnergyUse	LightingElect	1.75	2.33
tblEnergyUse	LightingElect	1.75	2.33
tblEnergyUse	T24E	3.92	0.41
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	29.00	0.00
tblGrading	MaterialExported	0.00	89,750.00
tblLandUse	LandUseSquareFeet	0.00	1.00
tblLandUse	LandUseSquareFeet	580,000.00	548,960.00
tblLandUse	LandUseSquareFeet	7,500.00	7,499.00
tblLandUse	LotAcreage	1.78	0.83
tblLandUse	LotAcreage	3.94	0.83
tblLandUse	LotAcreage	9.35	0.83
tblLandUse	LotAcreage	0.17	0.83
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	616

tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	1,780.00	1,250.00
tblTripsAndVMT	HaulingTripNumber	11,219.00	7,260.00
tblTripsAndVMT	VendorTripLength	6.90	13.80
tblTripsAndVMT	VendorTripNumber	0.00	150.00
tblTripsAndVMT	VendorTripNumber	105.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	60.00
tblTripsAndVMT	WorkerTripNumber	18.00	100.00
tblTripsAndVMT	WorkerTripNumber	527.00	550.00
tblTripsAndVMT	WorkerTripNumber	105.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblVehicleTrips	CC_TL	8.40	5.29
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	PB_TP	0.00	17.90
tblVehicleTrips	PR_TP	0.00	82.10
tblVehicleTrips	ST_TR	4.98	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	ST_TR	0.00	5,017.00
tblVehicleTrips	SU_TR	3.65	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	SU_TR	0.00	5,017.00
tblVehicleTrips	WD_TR	4.20	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblVehicleTrips	WD_TR	0.00	5,017.00
tblWoodstoves	NumberCatalytic	29.00	0.00
tblWoodstoves	NumberNoncatalytic	29.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

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																129.1125
Energy																1,149.3870

Mobile																3,303.9630
Stationary																1.3757
Waste																138.1370
Water																267.5888
Total																**4,989.5639**

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																10.0214
Energy																1,056.2240
Mobile																3,303.9630
Stationary																1.3757
Waste																32.6003
Water																214.0710
Total																**4,618.2554**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**7.44**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated																3,303.9630
Unmitigated																3,303.9630

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

Apartments High Rise	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
User Defined Commercial	5,017.00	5,017.00	5017.00	7,968,324	7,968,324
Total	5,017.00	5,017.00	5,017.00	7,968,324	7,968,324

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Commercial	0.00	5.29	0.00	0.00	100.00	0.00	82.10085709	0	17.89914291

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Enclosed Parking with Elevator	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Strip Mall	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Unenclosed Parking with Elevator	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
User Defined Commercial	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated																782.2969
Electricity Unmitigated																861.7580
NaturalGas Mitigated																273.9271
NaturalGas Unmitigated																287.6290

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					

Apartments High Rise	5.34583e+006																286.9688
Enclosed Parking with Elevator	0																0.0000
Strip Mall	12298.4																0.6602
Unenclosed Parking with [illegible]	0																0.0000
User Defined Commercial	0																0.0000
Total																	**287.6290**

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					
Apartments High Rise	5.09144e+006																273.3132
Enclosed Parking with Elevator	0																0.0000
Strip Mall	11436																0.6139
Unenclosed Parking with [illegible]	0																0.0000
User Defined Commercial	0																0.0000
Total																	**273.9271**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	2.29685e+006				644.3866
Enclosed Parking with Elevator	232056				65.1040
Strip Mall	101237				28.4022
Unenclosed Parking with [illegible]	441504				123.8652
User Defined Commercial	0				0.0000
Total					**861.7580**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

Apartments High Rise	2.17979e+006				611.5473
Enclosed Parking with Elevator	182675				51.2499
Strip Mall	86493.5				24.2660
Unenclosed Parking with [illegible]	339450				95.2336
User Defined Commercial	0				0.0000
Total					**782.2969**

6.0 Area Detail

6.1 Mitigation Measures Area

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																10.0214
Unmitigated																129.1125

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating																0.0000
Consumer Products																0.0000
Hearth																119.0911
Landscaping																10.0214
Total																**129.1125**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating																0.0000

Consumer Products																0.0000
Hearth																0.0000
Landscaping																10.0214
Total																**10.0214**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				214.0710
Unmitigated				267.5888

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	37.7893 / 23.8237				263.7419
Enclosed Parking with Elevator	0 / 0				0.0000
Strip Mall	0.555544 / 0.340495				3.8469
Unenclosed Parking with [illegible]	0 / 0				0.0000
User Defined Commercial	0 / 0				0.0000
Total					**267.5888**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	30.2315 / 19.059				210.9935
Enclosed Parking with Elevator	0 / 0				0.0000

Strip Mall	0.444435 / 0.272396			3.0776
Unenclosed Parking with	0 / 0			0.0000
User Defined Commercial	0 / 0			0.0000
Total				**214.0710**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				32.6003
Unmitigated				138.1370

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	266.8				134.1741
Enclosed Parking with Elevator	0				0.0000
Strip Mall	7.88				3.9629
Unenclosed Parking with	0				0.0000
User Defined Commercial	0				0.0000
Total					**138.1370**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	62.9648				31.6651
Enclosed Parking with Elevator	0				0.0000

Strip Mall	1.85968			0.9352
Unenclosed Parking with	0			0.0000
User Defined Commercial	0			0.0000
Total				**32.6003**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	12	300	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel																1.3757
Total																**1.3757**

11.0 Vegetation