Appendix B

Technical Appendix for
Air Quality and Greenhouse Gas Emissions

222 West 2nd Street

Draft EIR

Technical Appendix for Air Quality and Greenhouse Gas Emissions

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- Appendix B-1: Air Quality and Greenhouse Gas Emissions Methodology
- Appendix B-2: Air Quality Worksheets and Modeling Output Files
- Appendix B-3: Greenhouse Gas Worksheets and Modeling Output Files

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Appendix B-1

Air Quality and Greenhouse Gas Methodology

222 West 2nd Street 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 222 West 2nd Street 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 fireplaces, 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:

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

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 will 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: CalEEMod statewide default values are based on the Sacramento Metropolitan Air Quality Management District (SMAQMD) emission factor of 2.62 lb/acre.

(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, 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, fireplaces 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[i]:

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

Where:

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

The factor is 1.98 x 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.

GHG emissions associated with natural gas fired fireplaces are calculated using emission factors from the California Climate Action Registry (CCAR). The criteria pollutant emission factors are based on AP-42. Annual fireplace usage was calculated based on CalEEMod specific usage rates within Los Angeles County. Criteria pollutant emissions from natural gas fireplaces/stoves are computed by CalEEMod in a similar manner with emission factors also coming from AP-42.[4] Project Design Feature ENG-PDF-1 limits the number of natural gas-fueled fireplaces to 20 percent of the proposed residential units.

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

[4] *USEPA. 1998. AP-42 Emission Factors. Chapter 1.4 Natural Gas Combustion, pp. 5–6, Tables 1.4-1 and 1.4-2, http://www.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf.*

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.

Consistent with Table IV.O-1 and Table IV.O-2 in Section IV.O, Energy Conservation and Infrastructure, of this Draft EIR, CalEEMod energy demand is based on the California Energy Commission (CEC) sponsored California Commercial End Use Survey (CEUS) study.[5] The data is specific for climate zones and, therefore, Zone 11 was selected for the Project Site based on the ZIP Code tool. Energy efficiency standards are based on the current 2016 Title 24 building codes.

(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

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

GHGs emitted. Annual electricity GHG emissions in units of $MTCO_2e$ are calculated as follows:

Electricity:

Annual Emissions $[MTCO_2e] = (\Sigma_i (Units \times D_E \times EF_E \times GWP)_i) \div 2{,}204.62$

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 Strategic Long-Term Resource Plan, which provides a CO_2 intensity of 834 pounds of CO_2 per MWh. Currently, LADWP provides 29 percent of electricity via renewable sources. [6] By 2020, LADWP is expecting to meet the State's Renewables Portfolio Standard of at least 33 percent of electricity via renewable sources. By 2030, at least 60 percent of electricity shall be obtained from renewable sources. As year-by-year data is currently not available, the CO_2 intensity factor for the Project buildout year (2025) was determined based on straight-line interpolation using SB 100 RPS requirements for Year 2020 (33 percent renewable energy) and Year 2030 (60 percent renewable energy) data points. Emission factors for CH_4 and N_2O were obtained from the CalEEMod.

(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

[6] *California Energy Commission, Utility Annual Power Content Labels for 2016, www.energy.ca.gov/pcl/labels/.*

of million British thermal units (MMBtu). Natural gas emissions are calculated in CalEEMod as follows:

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). CalEEMod calculates VMT based on the type of land use, trip purpose, trip type percentages for each land use subtype in the project (primary, diverted, and pass-by). The model assumes that diverted trips are assumed to be 25 percent of the primary trip lengths and pass-by trips are assumed to be 0.1 mile in length and are a result of no diversion from the primary route. The Los Angeles County urban primary trip distance was selected for this analysis. 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 trip-generation estimates provided by Linscott, Law and Greenspan, Inc.[7] As discussed in Section IV.J, Traffic and Access, of this Draft EIR, to calculate peak daily trip estimates, the number of residential units and the amount of office and commercial retail floor area were multiplied by the applicable trip-generation rates based on the Institute of Transportation Engineers (ITE)'s *Trip Generation, 9th Edition*.

Please refer to the CalEEMod output files for calculation of this reduction in GHG emissions. In addition, Project Design Feature GHG-PDF-2 would require installation of electric vehicle charging equipment on 2 percent of code-required parking spaces, and an additional 3 percent of code-required parking spaces shall be capable of supporting future electric vehicle supply equipment (EVSE). The Draft EIR conservatively does not include reductions of GHG missions from mobile sources from implementation of Project design Feature GHG-PDF-2.

The Project design also 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). The Project represents an infill development within an existing urbanized area that would concentrate new residential, office, and commercial retail uses within an HQTA. The Project Site includes the future Metro 2nd Street/Broadway rail station. In addition, the Project is located approximately 700 feet from the Civic Center/Grand Park Metro Purple and Red line station, which is serviced by 16 Metro local lines and one Dash line. The Project would locate residential uses in proximity to a job center which would

[7] *Linscott, Law and Greenspan, Transportation Impact Study for 222 West 2nd Street Project, City of Los Angeles, December 2017*

reduce the distance required for travel from home to work. The Project would provide bicycle storage areas for Project residents and visitors. Project characteristics that would reduce trips and VMT in comparison to a standard project within the air basin as measured by CalEEMod were provided in the CalEEMod output files.

It should be noted that GHG reductions due to LCFS are not currently incorporated into CalEEMod. Calculations demonstrating LCFS reductions were performed outside of CalEEMod using CARB methodology. LCFS reductions in fuel carbon intensity (CI) are phased in starting in 2019 with a reduction of 6.25 percent and increases by 1.25 percent each year until Year 2030. LCFS emissions reductions were calculated for the Project based on a 13.75 percent reduction in CI by 2025, the Project's build out year.

(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:

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:

$$\text{Annual Emissions } [MTCO_2e] = \left(\Sigma_i \left(\text{Units} \times D_{MSW} \times EF_{MSW} \times GWP \right)_i \right) \div 1.1023$$

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 75-percent diversion rate which is currently achieved by the City of Los Angeles.[8]

(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;

[8] *City of Los Angeles Solid Waste Integrated Resources Plan. October 2013.*

(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:

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

Annual Emissions [$MTCO_2e$] = $(\Sigma_i \ (Units \times D_W \times (EI_W \div 1{,}000) \times EF_W \times GWP)_i \ ) \div 2{,}204.62$

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.H, Utilities and Service Systems—Water Supply and Infrastructure, of this Draft EIR.

b. GHG Efficiency Metric

A method of analyzing the efficacy of GHG emission reductions, and thereby providing further support for the Project's consistency with the applicable GHG reduction plans and policies, is to compare the Project's emissions to a GHG "efficiency target". A methodology based on an efficiency target analyzes a project's GHG emissions on a per "service population" basis to determine if the project achieves the identified level of GHG efficiency. This methodology recognizes that new growth can occur in a manner consistent with climate goals provided the incremental growth is appropriately efficient from a GHG emissions standpoint.[9] The service population for a project is based on the number of residents and employees generated by the project. The service population approach has been recognized by multiple air districts, including the Bay Area Air Quality Management District and San Luis Obispo County Air Pollution Control District, both of which have adopted efficiency-based GHG thresholds for 2020,[10] and the SCAQMD, which prepared a draft efficiency target for 2020.[11]

Applied here, an efficiency target for the Project (a mixed-use development with residential and commercial components) was initially based on the AB 32 GHG reduction target and GHG emissions inventory prepared for CARB's Scoping Plan. As discussed above, the CARB per capita target established in the Scoping Plan is based on state-wide emissions which include sectors which may not be directly applicable to the Project (e.g., agriculture, industrial). It should be noted that the CARB per capita target is based solely on population data while the efficiency targets used by various local air quality districts utilize service population, which takes into account both population and employment.

To develop an efficiency metric for 2025 (Project Buildout Year) patterned on and consistent with the 2030 and 2050 metrics the 2017 Scoping Plan Update, land use-related sectors in the 2017 Scoping Plan Update GHG inventory were identified and separated for an inventory specific to land use projects and then divided by the estimated state

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[9] See *Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farming, 62 Cal. 4th 204, 220 (2015) ("For projects, like the present residential and commercial development, which are designed to accommodate long-term growth in California's population and economic activity, this fact gives rise to an argument that a certain amount of greenhouse gas emissions is as inevitable as population growth. Under this view, a significance criterion framed in terms of efficiency is superior to a simple numerical threshold because CEQA is not intended as a population control measure.")*

[10] See *Bay Area AQMD's Air Quality Guidelines, Section 2.2 , 2017; San Luis Obispo County Air Pollution Control District, Greenhouse Gas Thresholds and Supporting Evidence, Section 2.2.3 Efficiency-Based Threshold for Land Use Projects, March 28, 2012.*

[11] *SCAQMD Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #15, September 28, 2010.*

population and employment figures consistent with the service population target used by various local air districts.[12,13,14,15] Non land use GHG emissions associated with industrial uses, agriculture and forestry, ships and commercial boats, aviation, and rail transport were excluded from the land use-related (i.e., residential and commercial) emissions inventory. In other words, sources that would not be included in the Project GHG emission estimates were not included in the development of the GHG efficiency threshold.

When determining reductions necessary to achieve 2030 GHG targets, the 2017 Scoping Plan Update takes into account existing measures or those required by statute which are identified as "known commitments". However, the 2017 Scoping Plan Update also concludes that even when accounting for "known commitments", statewide GHG emissions would not achieve the 2030 targets unless further action is taken to reduce GHGs.[16] Consequently, the Scoping Plan also takes into account the Post-2020 Cap-and-Trade Program, pursuant to AB 398, to achieve additional reductions to ensure that the 2030 target is achieved. The Post-2020 Cap-and-Trade Program has not allocated necessary reductions to specific sectors which it covers. Sectors which are subject to the Post-2020 Cap-and-Trade Program such as industrial and power generation sectors are not associated with land use projects.

In calculating the efficiency target for land-use related sectors, it was assumed that GHG emissions reductions would be consistent with "known commitments" related to the land-use sector such as energy efficiency and VMT reduction measures. However, as discussed previously, known commitments would not be sufficient to achieve the 2030 targets. Therefore, consistent with the 2017 Scoping Plan Update, it was assumed that additional reductions necessary to achieve the 2030 targets would be accomplished by the Post-2020 Cap-and-Trade Program which mainly target industrial and power generation sectors.[17]

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[12] *The methodology of using a project-level efficiency target based on the Scoping Plan to evaluate potential GHG impacts is supported by AQMDs (e.g., Bay Area AQMD's Air Quality Guidelines, 2017 and SCAQMD's Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group Meeting #15, 2010).*

[13] *Project design features are based on relevant year 2020 targets established by AB 32 and the current CARB Scoping Plan Update.*

[14] *CARB, California's 2017 Climate Change Scoping Plan, Appendix D. PATHWAYS Output Tool, November 2017.*

[15] *California Employment Development Department, Employment Projections, www.labormarketinfo.edd.ca.gov/data/employment-projections.html, accessed March 2018.*

[16] *CARB, California's 2017 Climate Change Scoping Plan, November 2017, p. 24.*

[17] *CARB, California's 2017 Climate Change Scoping Plan, November 2017, p. 26.*

The efficiency target for a project's buildout year can be calculated using the methodology described above and extrapolating the emissions reductions needed to maintain consistency with AB 32 and SB 32. Specifically, for this project, the buildout year efficiency target was estimated based on statewide emissions data provided in the 2017 Scoping Plan Update. Emissions for sectors related to land-use projects (residential, commercial, transportation) were parsed out from the 2017 Scoping Plan Update emissions inventory and the resultant value was divided by the projected population and employment in 2025. Calculations showing the efficiency target determination is provided on the next page.

CARB Scoping Plan - GHG Emissions Data (2017)

Service Population - Efficiency Calculation

Service Population Calculation

Year	2025
State Population[a]	42,373,301
State Employment[b]	19,979,050
State Service Population	62,352,351

1. Statewide GHG Emissions[c]

Energy Emissions	
Sector	**MMT CO2/Year**
Agriculture	7.4
Commercial	34.7
Industrial	32.5
Oil & Gas Extraction	20.0
Petroleum Refining	33.2
Residential	44.8
TCU	5.4
Transportation	123.2
Total	301.1

Non-Energy Emissions	
Sector	**MMT CO2/Year**
Cement	5.0
Waste	9.9
Petroleum Refining	0.5
Oil Extraction Fugitive Emissions	1.3
Electricity Generation Fugitive and Process Emissions	0.7
Pipeline Fugitive Emissions	2.8
Agriculture: Enteric	10.6
Agriculture: Soil Emissions	6.9
Agriculture: Manure	7.7
Agriculture: Other	1.0
Fgas: RES	3.7
Fgas: COM	7.3
Fgas: IND	2.1
Fgas: LDV	0.9
Fgas: HDV	0.9
Fgas: Other trans	0.2
Fgas: Electricity	0.1
Land: Use change	0.0
Total	**61.6**
Grand Total	**362.7**

3. Scoping Plan GHG Emissions - Land Use Only Sectors

Sector	**MMT CO2/Year**
Energy	
Commercial	34.7
Residential	44.8
TCU	5.4
Transportation	123.2
Non-Energy	
Waste	9.9
Total	**217.9**
Scoping Plan - Emissions per SP (Land Use Only)	**3.5**

[a] SCAG 2016-2040 RTP/SCS. Demographics and Growth Forecast Appendix. Table 11. April 2016.

[b] California Employment Development Department Statewide Employment Projections: http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html. Accessed March

[c] California's 2017 Climate Change Scoping Plan. PATHWAYS Output Tool Data (Statewide Data). California Air Resources Board. November 2017

222 West 2nd Street

SB100 - Renewable Portfolio Standards

Year	% RPS	RPS Reduction (%)	Carbon Intensity (lbs/MWh)
2015	20	-20%	1131
2016	29	-31%	834
2017	31	-6%	780
2020	33	-6%	733
2026	46	-29%	520
2030	60	-23%	403
2036	65	-8%	372
2045	100	-35%	0

Build Out Year	Carbon Intensity (lbs/MWh)
2025	616

222 West 2nd Street

Draft EIR

Appendix B-2

Air Quality Worksheets and Modeling Output Files

- Appendix B-2: Project Emissions Inventory (Daily Emissions)
    - CalEEMod Outputs – Construction and Operations
    - Localized Significance Threshold (LST) Calculation Worksheet

222 West 2nd Project (Construction and Operations) - Los Angeles-South Coast County, Winter

222 West 2nd Project (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
General Office Building	534.04	1000sqft	12.26	534,044.00	0
Condo/Townhouse High Rise	107.00	Dwelling Unit	1.67	137,347.00	306
Strip Mall	7.20	1000sqft	0.17	7,200.00	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 - RPS of 50% for LADWP for Year 2025 per SB100

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

Trips and VMT - Site Specific

Demolition -

Grading -

Vehicle Trips - Site Specific

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Up to 20% of Units (22) will have natural gas fire places. No wood burning fire places per SCAQMD regulations.

Energy Use -

Construction Off-road Equipment Mitigation - Site Specific

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	239.00
tblConstructionPhase	NumDays	300.00	696.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	10.00	97.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00

tblFireplaces	NumberGas	90.95	22.00
tblFireplaces	NumberNoFireplace	10.70	85.00
tblFireplaces	NumberWood	5.35	0.00
tblGrading	MaterialExported	0.00	7,000.00
tblLandUse	LandUseSquareFeet	534,040.00	534,044.00
tblLandUse	LandUseSquareFeet	107,000.00	137,347.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	5.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	616
tblStationaryGeneratorsPumpsEF	NOX_EF	4.56	0.50
tblStationaryGeneratorsPumpsEF	PM10_EF	0.15	0.02
tblStationaryGeneratorsPumpsEF	PM2_5_EF	0.15	0.02
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	3.1000e-004

tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,000.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.50
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	80.00
tblTripsAndVMT	HaulingTripLength	20.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	150.00
tblTripsAndVMT	HaulingTripNumber	875.00	1,100.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	VendorTripNumber	100.00	50.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripNumber	13.00	30.00
tblTripsAndVMT	WorkerTripNumber	15.00	60.00
tblTripsAndVMT	WorkerTripNumber	20.00	100.00
tblTripsAndVMT	WorkerTripNumber	250.00	500.00
tblTripsAndVMT	WorkerTripNumber	50.00	100.00
tblTripsAndVMT	WorkerTripNumber	13.00	100.00
tblVehicleTrips	ST_TR	4.31	6.86
tblVehicleTrips	ST_TR	2.46	1.96
tblVehicleTrips	ST_TR	42.04	40.58
tblVehicleTrips	SU_TR	3.43	5.46
tblVehicleTrips	SU_TR	1.05	0.84
tblVehicleTrips	SU_TR	20.43	19.72
tblVehicleTrips	WD_TR	4.18	6.65
tblVehicleTrips	WD_TR	11.03	8.78
tblVehicleTrips	WD_TR	44.32	42.78
tblWoodstoves	NumberCatalytic	5.35	0.00
tblWoodstoves	NumberNoncatalytic	5.35	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	6.8644	60.0826	59.4598	0.1799	10.7530	1.7714	11.8243	4.5083	1.7215	5.4997						
2023	6.3704	37.1820	57.7042	0.1299	5.9089	1.5328	7.4418	1.5744	1.4891	3.0635						
2024	30.9811	35.4602	59.3102	0.1379	7.0267	1.3497	8.3764	1.8708	1.3098	3.1806						
2025	30.6264	33.6396	57.8671	0.1356	7.0267	1.1727	8.1994	1.8708	1.1368	3.0076						
Maximum	**30.9811**	**60.0826**	**59.4598**	**0.1799**	**10.7530**	**1.7714**	**11.8243**	**4.5083**	**1.7215**	**5.4997**						

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	6.8644	60.0826	59.4598	0.1799	6.7342	1.7714	7.8054	2.4508	1.7215	3.4423						

2023	6.3704	37.1820	57.7042	0.1299	5.9089	1.5328	7.4418	1.5744	1.4891	3.0635						
2024	30.9811	35.4602	59.3102	0.1379	7.0267	1.3497	8.3764	1.8708	1.3098	3.1806						
2025	30.6264	33.6396	57.8671	0.1356	7.0267	1.1727	8.1994	1.8708	1.1368	3.0076						
Maximum	**30.9811**	**60.0826**	**59.4598**	**0.1799**	**7.0267**	**1.7714**	**8.3764**	**2.4508**	**1.7215**	**3.4423**						

	ROG	NOx	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**	**13.08**	**0.00**	**11.21**	**20.94**	**0.00**	**13.95**						

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	15.3588	0.4670	9.0297	2.8000e-003		0.0786	0.0786		0.0786	0.0786						
Energy	0.1938	1.7454	1.3630	0.0106		0.1339	0.1339		0.1339	0.1339						
Mobile	7.9802	36.3225	102.5456	0.4162	38.6910	0.3235	39.0145	10.3521	0.3005	10.6526						
Stationary	0.1132	0.4023	2.0922	3.9400e-003		0.0161	0.0161		0.0161	0.0161						
Total	**23.6459**	**38.9373**	**115.0304**	**0.4335**	**38.6910**	**0.5521**	**39.2431**	**10.3521**	**0.5291**	**10.8812**						

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	15.3588	0.4670	9.0297	2.8000e-003		0.0786	0.0786		0.0786	0.0786						
Energy	0.1765	1.5896	1.2370	9.6300e-003		0.1220	0.1220		0.1220	0.1220						
Mobile	5.6087	23.8640	46.3546	0.1538	12.8648	0.1289	12.9936	3.4421	0.1196	3.5617						
Stationary	0.1132	0.4023	2.0922	3.9400e-003		0.0161	0.0161		0.0161	0.0161						
Total	**21.2571**	**26.3230**	**58.7135**	**0.1702**	**12.8648**	**0.3456**	**13.2103**	**3.4421**	**0.3363**	**3.7784**						

	ROG	NOx	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	**10.10**	**32.40**	**48.96**	**60.74**	**66.75**	**37.41**	**66.34**	**66.75**	**36.44**	**65.28**						

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/15/2022	5	10	
2	Grading	Grading	1/16/2022	2/15/2022	5	22	
3	Foundation	Site Preparation	2/16/2022	6/30/2022	5	97	
4	Building Construction	Building Construction	7/1/2022	2/28/2025	5	696	
5	Architectural Coating	Architectural Coating	5/1/2024	3/31/2025	5	239	
6	Paving	Paving	3/1/2025	3/31/2025	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 11

Acres of Paving: 0

Residential Indoor: 278,128; Residential Outdoor: 92,709; Non-Residential Indoor: 811,866; Non-Residential Outdoor: 270,622; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	1	8.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Bore/Drill Rigs	1	8.00	221	0.50
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Foundation	Cranes	1	8.00	231	0.29
Foundation	Plate Compactors	2	8.00	8	0.43
Foundation	Pumps	2	8.00	84	0.74
Foundation	Rubber Tired Dozers	0	8.00	247	0.40
Foundation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Foundation	Welders	1	8.00	46	0.45
Building Construction	Aerial Lifts	5	8.00	63	0.31
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Concrete/Industrial Saws	3	8.00	81	0.73

Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	5	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	5	8.00	46	0.45
Architectural Coating	Air Compressors	0	6.00	78	0.48
Paving	Concrete/Industrial Saws	1	8.00		
Paving	Pavers	0	8.00		
Paving	Paving Equipment	1	8.00		
Paving	Rollers	1	8.00		
Paving	Skid Steer Loaders	1	8.00		
Paving	Tractors/Loaders/Backhoes	1	8.00		

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	5	30.00	0.00	150.00	14.70	6.90	80.00	LD_Mix	HDT_Mix	HHDT
Grading	6	60.00	0.00	1,100.00	14.70	6.90	80.00	LD_Mix	HDT_Mix	HHDT
Foundation	8	100.00	50.00	0.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Building Construction	22	500.00	50.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	100.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	100.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Off-Road	1.3779	12.4047	11.3832	0.0258		0.5522	0.5522		0.5287	0.5287						
Total	**1.3779**	**12.4047**	**11.3832**	**0.0258**	**0.0000**	**0.5522**	**0.5522**	**0.0000**	**0.5287**	**0.5287**						

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	0.4118	11.2127	3.2731	0.0413	1.0482	0.0418	1.0900	0.2873	0.0400	0.3272						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1344	0.0884	1.0175	3.1100e-003	0.3353	2.6200e-003	0.3380	0.0889	2.4200e-003	0.0914						
Total	**0.5461**	**11.3011**	**4.2907**	**0.0444**	**1.3836**	**0.0444**	**1.4279**	**0.3762**	**0.0424**	**0.4186**						

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Off-Road	1.3779	12.4047	11.3832	0.0258		0.5522	0.5522		0.5287	0.5287						
Total	**1.3779**	**12.4047**	**11.3832**	**0.0258**	**0.0000**	**0.5522**	**0.5522**	**0.0000**	**0.5287**	**0.5287**						

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	0.4118	11.2127	3.2731	0.0413	1.0482	0.0418	1.0900	0.2873	0.0400	0.3272						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1344	0.0884	1.0175	3.1100e-003	0.3353	2.6200e-003	0.3380	0.0889	2.4200e-003	0.0914						
Total	**0.5461**	**11.3011**	**4.2907**	**0.0444**	**1.3836**	**0.0444**	**1.4279**	**0.3762**	**0.0424**	**0.4186**						

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					6.5883	0.0000	6.5883	3.3729	0.0000	3.3729						
Off-Road	2.0917	22.5302	12.7028	0.0360		0.9267	0.9267		0.8534	0.8534						
Total	**2.0917**	**22.5302**	**12.7028**	**0.0360**	**6.5883**	**0.9267**	**7.5151**	**3.3729**	**0.8534**	**4.2263**						

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	1.3726	37.3756	10.9104	0.1376	3.4941	0.1392	3.6333	0.9575	0.1332	1.0907						
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	**1.6413**	**37.5524**	**12.9455**	**0.1438**	**4.1647**	**0.1445**	**4.3092**	**1.1354**	**0.1381**	**1.2734**						

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					2.5694	0.0000	2.5694	1.3154	0.0000	1.3154						
Off-Road	2.0917	22.5302	12.7028	0.0360		0.9267	0.9267		0.8534	0.8534						

Total	**2.0917**	**22.5302**	**12.7028**	**0.0360**	**2.5694**	**0.9267**	**3.4962**	**1.3154**	**0.8534**	**2.1688**						

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	1.3726	37.3756	10.9104	0.1376	3.4941	0.1392	3.6333	0.9575	0.1332	1.0907						
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	**1.6413**	**37.5524**	**12.9455**	**0.1438**	**4.1647**	**0.1445**	**4.3092**	**1.1354**	**0.1381**	**1.2734**						

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Off-Road	1.7632	15.4387	15.9487	0.0287		0.7488	0.7488		0.7204	0.7204						
Total	**1.7632**	**15.4387**	**15.9487**	**0.0287**	**0.0000**	**0.7488**	**0.7488**	**0.0000**	**0.7204**	**0.7204**						

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	0.1953	7.1926	1.6309	0.0160	0.3023	0.0139	0.3162	0.0829	0.0133	0.0962						
Worker	0.4478	0.2945	3.3918	0.0104	1.1178	8.7500e-003	1.1265	0.2964	8.0600e-003	0.3045						
Total	**0.6432**	**7.4872**	**5.0227**	**0.0264**	**1.4201**	**0.0226**	**1.4427**	**0.3794**	**0.0213**	**0.4007**						

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Off-Road	1.7632	15.4387	15.9487	0.0287		0.7488	0.7488		0.7204	0.7204						
Total	**1.7632**	**15.4387**	**15.9487**	**0.0287**	**0.0000**	**0.7488**	**0.7488**	**0.0000**	**0.7204**	**0.7204**						

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	0.1953	7.1926	1.6309	0.0160	0.3023	0.0139	0.3162	0.0829	0.0133	0.0962						
Worker	0.4478	0.2945	3.3918	0.0104	1.1178	8.7500e-003	1.1265	0.2964	8.0600e-003	0.3045						
Total	**0.6432**	**7.4872**	**5.0227**	**0.0264**	**1.4201**	**0.0226**	**1.4427**	**0.3794**	**0.0213**	**0.4007**						

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.4755	34.7029	41.1722	0.0679		1.7187	1.7187		1.6727	1.6727						
Total	**4.4755**	**34.7029**	**41.1722**	**0.0679**		**1.7187**	**1.7187**		**1.6727**	**1.6727**						

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	0.1498	4.6040	1.3289	0.0124	0.3201	8.9600e-003	0.3291	0.0922	8.5700e-003	0.1007						
Worker	2.2392	1.4727	16.9588	0.0519	5.5888	0.0438	5.6326	1.4822	0.0403	1.5225						
Total	**2.3890**	**6.0767**	**18.2877**	**0.0643**	**5.9089**	**0.0527**	**5.9617**	**1.5744**	**0.0489**	**1.6232**						

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	4.4755	34.7029	41.1722	0.0679		1.7187	1.7187		1.6727	1.6727						
Total	**4.4755**	**34.7029**	**41.1722**	**0.0679**		**1.7187**	**1.7187**		**1.6727**	**1.6727**						

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	0.1498	4.6040	1.3289	0.0124	0.3201	8.9600e-003	0.3291	0.0922	8.5700e-003	0.1007						

Worker	2.2392	1.4727	16.9588	0.0519	5.5888	0.0438	5.6326	1.4822	0.0403	1.5225						
Total	**2.3890**	**6.0767**	**18.2877**	**0.0643**	**5.9089**	**0.0527**	**5.9617**	**1.5744**	**0.0489**	**1.6232**						

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	4.1496	32.3631	40.9351	0.0679		1.4861	1.4861		1.4459	1.4459						
Total	**4.1496**	**32.3631**	**40.9351**	**0.0679**		**1.4861**	**1.4861**		**1.4459**	**1.4459**						

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	0.1113	3.4869	1.1808	0.0120	0.3201	4.2600e-003	0.3244	0.0922	4.0700e-003	0.0962						
Worker	2.1096	1.3320	15.5883	0.0500	5.5888	0.0425	5.6313	1.4822	0.0391	1.5213						
Total	**2.2208**	**4.8189**	**16.7692**	**0.0620**	**5.9089**	**0.0468**	**5.9557**	**1.5744**	**0.0432**	**1.6176**						

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	4.1496	32.3631	40.9351	0.0679		1.4861	1.4861		1.4459	1.4459						
Total	**4.1496**	**32.3631**	**40.9351**	**0.0679**		**1.4861**	**1.4861**		**1.4459**	**1.4459**						

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	0.1113	3.4869	1.1808	0.0120	0.3201	4.2600e-003	0.3244	0.0922	4.0700e-003	0.0962						
Worker	2.1096	1.3320	15.5883	0.0500	5.5888	0.0425	5.6313	1.4822	0.0391	1.5213						
Total	**2.2208**	**4.8189**	**16.7692**	**0.0620**	**5.9089**	**0.0468**	**5.9557**	**1.5744**	**0.0432**	**1.6176**						

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	3.8815	30.5285	40.7506	0.0679		1.2952	1.2952		1.2595	1.2595						
Total	**3.8815**	**30.5285**	**40.7506**	**0.0679**		**1.2952**	**1.2952**		**1.2595**	**1.2595**						

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	0.1085	3.4744	1.1450	0.0119	0.3201	4.1800e-003	0.3243	0.0922	4.0000e-003	0.0962						
Worker	2.0018	1.2144	14.5121	0.0484	5.5888	0.0419	5.6307	1.4822	0.0386	1.5208						
Total	**2.1104**	**4.6888**	**15.6571**	**0.0604**	**5.9090**	**0.0461**	**5.9550**	**1.5744**	**0.0426**	**1.6169**						

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	3.8815	30.5285	40.7506	0.0679		1.2952	1.2952		1.2595	1.2595						
Total	**3.8815**	**30.5285**	**40.7506**	**0.0679**		**1.2952**	**1.2952**		**1.2595**	**1.2595**						

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	0.1085	3.4744	1.1450	0.0119	0.3201	4.1800e-003	0.3243	0.0922	4.0000e-003	0.0962						
Worker	2.0018	1.2144	14.5121	0.0484	5.5888	0.0419	5.6307	1.4822	0.0386	1.5208						
Total	**2.1104**	**4.6888**	**15.6571**	**0.0604**	**5.9090**	**0.0461**	**5.9550**	**1.5744**	**0.0426**	**1.6169**						

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	3.6435	28.8615	40.5929	0.0679		1.1194	1.1194		1.0875	1.0875						
Total	**3.6435**	**28.8615**	**40.5929**	**0.0679**		**1.1194**	**1.1194**		**1.0875**	**1.0875**						

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	0.1058	3.4450	1.1158	0.0119	0.3201	4.1000e-003	0.3242	0.0922	3.9200e-003	0.0961						
Worker	1.9068	1.1109	13.4654	0.0466	5.5888	0.0410	5.6298	1.4822	0.0378	1.5199						
Total	**2.0126**	**4.5559**	**14.5812**	**0.0584**	**5.9090**	**0.0451**	**5.9541**	**1.5744**	**0.0417**	**1.6160**						

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	3.6435	28.8615	40.5929	0.0679		1.1194	1.1194		1.0875	1.0875						
Total	**3.6435**	**28.8615**	**40.5929**	**0.0679**		**1.1194**	**1.1194**		**1.0875**	**1.0875**						

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	0.1058	3.4450	1.1158	0.0119	0.3201	4.1000e-003	0.3242	0.0922	3.9200e-003	0.0961						
Worker	1.9068	1.1109	13.4654	0.0466	5.5888	0.0410	5.6298	1.4822	0.0378	1.5199						
Total	**2.0126**	**4.5559**	**14.5812**	**0.0584**	**5.9090**	**0.0451**	**5.9541**	**1.5744**	**0.0417**	**1.6160**						

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	24.5889					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**24.5889**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.4004	0.2429	2.9024	9.6900e-003	1.1178	8.3800e-003	1.1261	0.2964	7.7100e-003	0.3042						
Total	**0.4004**	**0.2429**	**2.9024**	**9.6900e-003**	**1.1178**	**8.3800e-003**	**1.1261**	**0.2964**	**7.7100e-003**	**0.3042**						

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	24.5889					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**24.5889**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.4004	0.2429	2.9024	9.6900e-003	1.1178	8.3800e-003	1.1261	0.2964	7.7100e-003	0.3042						
Total	**0.4004**	**0.2429**	**2.9024**	**9.6900e-003**	**1.1178**	**8.3800e-003**	**1.1261**	**0.2964**	**7.7100e-003**	**0.3042**						

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	24.5889					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**24.5889**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.3814	0.2222	2.6931	9.3100e-003	1.1178	8.2000e-003	1.1260	0.2964	7.5500e-003	0.3040						
Total	**0.3814**	**0.2222**	**2.6931**	**9.3100e-003**	**1.1178**	**8.2000e-003**	**1.1260**	**0.2964**	**7.5500e-003**	**0.3040**						

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	24.5889					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**24.5889**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.3814	0.2222	2.6931	9.3100e-003	1.1178	8.2000e-003	1.1260	0.2964	7.5500e-003	0.3040						
Total	**0.3814**	**0.2222**	**2.6931**	**9.3100e-003**	**1.1178**	**8.2000e-003**	**1.1260**	**0.2964**	**7.5500e-003**	**0.3040**						

3.7 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7703	7.1042	11.6469	0.0182		0.3061	0.3061		0.2890	0.2890						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.7703**	**7.1042**	**11.6469**	**0.0182**		**0.3061**	**0.3061**		**0.2890**	**0.2890**						

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	0.3814	0.2222	2.6931	9.3100e-003	1.1178	8.2000e-003	1.1260	0.2964	7.5500e-003	0.3040						
Total	**0.3814**	**0.2222**	**2.6931**	**9.3100e-003**	**1.1178**	**8.2000e-003**	**1.1260**	**0.2964**	**7.5500e-003**	**0.3040**						

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	0.7703	7.1042	11.6469	0.0182		0.3061	0.3061		0.2890	0.2890						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.7703**	**7.1042**	**11.6469**	**0.0182**		**0.3061**	**0.3061**		**0.2890**	**0.2890**						

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	0.3814	0.2222	2.6931	9.3100e-003	1.1178	8.2000e-003	1.1260	0.2964	7.5500e-003	0.3040						
Total	**0.3814**	**0.2222**	**2.6931**	**9.3100e-003**	**1.1178**	**8.2000e-003**	**1.1260**	**0.2964**	**7.5500e-003**	**0.3040**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.6087	23.8640	46.3546	0.1538	12.8648	0.1289	12.9936	3.4421	0.1196	3.5617						
Unmitigated	7.9802	36.3225	102.5456	0.4162	38.6910	0.3235	39.0145	10.3521	0.3005	10.6526						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse High Rise	711.55	734.02	584.22	2,380,286	791,445
General Office Building	4,688.87	1,046.72	448.59	11,477,452	3,816,253
Strip Mall	308.02	292.18	141.98	536,597	178,419
Total	5,708.44	2,072.91	1,174.80		

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
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse 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
General Office Building	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

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	0.1765	1.5896	1.2370	9.6300e-003		0.1220	0.1220		0.1220	0.1220						
NaturalGas Unmitigated	0.1938	1.7454	1.3630	0.0106		0.1339	0.1339		0.1339	0.1339						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse High Rise	2701.95	0.0291	0.2490	0.1060	1.5900e-003		0.0201	0.0201		0.0201	0.0201						
General Office Building	15231.2	0.1643	1.4933	1.2543	8.9600e-003		0.1135	0.1135		0.1135	0.1135						
Strip Mall	32.3507	3.5000e-004	3.1700e-003	2.6600e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004						
Total		**0.1938**	**1.7454**	**1.3630**	**0.0106**		**0.1339**	**0.1339**		**0.1339**	**0.1339**						

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse High Rise	2.57338	0.0278	0.2372	0.1009	1.5100e-003		0.0192	0.0192		0.0192	0.0192						
General Office Building	13.7652	0.1485	1.3495	1.1336	8.1000e-003		0.1026	0.1026		0.1026	0.1026						
Strip Mall	0.0300822	3.2000e-004	2.9500e-003	2.4800e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004						
Total		**0.1765**	**1.5896**	**1.2370**	**9.6300e-003**		**0.1220**	**0.1220**		**0.1220**	**0.1220**						

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	15.3588	0.4670	9.0297	2.8000e-003		0.0786	0.0786		0.0786	0.0786						
Unmitigated	15.3588	0.4670	9.0297	2.8000e-003		0.0786	0.0786		0.0786	0.0786						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6101					0.0000	0.0000		0.0000	0.0000						
Consumer Products	13.4361					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0427	0.3649	0.1553	2.3300e-003		0.0295	0.0295		0.0295	0.0295						
Landscaping	0.2699	0.1021	8.8744	4.7000e-004		0.0491	0.0491		0.0491	0.0491						

Total	**15.3588**	**0.4670**	**9.0297**	**2.8000e-003**		**0.0786**	**0.0786**		**0.0786**	**0.0786**						

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6101					0.0000	0.0000		0.0000	0.0000						
Consumer Products	13.4361					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0427	0.3649	0.1553	2.3300e-003		0.0295	0.0295		0.0295	0.0295						
Landscaping	0.2699	0.1021	8.8744	4.7000e-004		0.0491	0.0491		0.0491	0.0491						
Total	**15.3588**	**0.4670**	**9.0297**	**2.8000e-003**		**0.0786**	**0.0786**		**0.0786**	**0.0786**						

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	0.5	12	1000	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 (750 - 9999 HP)	0.1132	0.4023	2.0922	3.9400e-003		0.0161	0.0161		0.0161	0.0161						
Total	**0.1132**	**0.4023**	**2.0922**	**3.9400e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**						

11.0 Vegetation

Step 1. Determine Allowable Increase using 98th percentile NO2 and Max NO2 data

Central LA NO2 Monitoring Data

SRA	City	Design Value 2014-2016	98th percentile, ppb 2013	2014	2015	2016	Threshold (ppb)	Allowable Increase (ppb)
1	CELA	64		69	62	61	100	36

SRA	City	Design Value 2014-2016	Max Hourly, ppb 2013	2014	2015	2016	Threshold (ppb)	Allowable Increase (ppb)
1	CELA	82		82	79	65	180	98

Max Hourly vs. 98th Percentile Ratio (Allowable Increase)	36%

Step 2. Use ratio in Step 1 to determine LST lookup value. Extrapolate/Interpolate LST look-up value for project area

LST Threshold (SRA 1, 25 meter receptor)

Project Size (acres)	NO2 (lbs/day)	98th Percentile NO2 (lbs/day)	CO (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM10 Ops (lbs/day)	PM2.5 Ops (lbs/day)	
1	74	27	680	5	3	2	1	
2	108	39	1048	8	5	2	2	
5	161	59	1861	16	8	4	2	
2.71	**115**	**42**	**1209**	**10**	**5**	**3**	**2**	**<----Interpolated Value**

222 West 2nd Street

Draft EIR
Appendix B-3
Greenhouse Gas Emissions Worksheets and Modeling Output Files

- Appendix B-3: GHG Modeling Parameters and CalEEMod Outputs
    - CalEEMod Outputs – Construction and Operations
    - LCFS Emissions Reduction Calculations
    - Efficiency Metric Comparison (Service Population)

222 West 2nd Project (Construction and Operations) - Los Angeles-South Coast County, Annual

222 West 2nd Project (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
General Office Building	534.04	1000sqft	12.26	534,044.00	0
Condo/Townhouse High Rise	107.00	Dwelling Unit	1.67	137,347.00	306
Strip Mall	7.20	1000sqft	0.17	7,200.00	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 - RPS of 50% for LADWP for Year 2025 per SB100

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

Trips and VMT - Site Specific

Demolition -

Grading -

Vehicle Trips - Site Specific

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Up to 20% of Units (22) will have natural gas fire places. No wood burning fire places per SCAQMD regulations.

Energy Use -

Construction Off-road Equipment Mitigation - Site Specific

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	239.00
tblConstructionPhase	NumDays	300.00	696.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	10.00	97.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00

tblFireplaces	NumberGas	90.95	22.00
tblFireplaces	NumberNoFireplace	10.70	85.00
tblFireplaces	NumberWood	5.35	0.00
tblGrading	MaterialExported	0.00	7,000.00
tblLandUse	LandUseSquareFeet	534,040.00	534,044.00
tblLandUse	LandUseSquareFeet	107,000.00	137,347.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	5.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	616
tblStationaryGeneratorsPumpsEF	NOX_EF	4.56	0.50
tblStationaryGeneratorsPumpsEF	PM10_EF	0.15	0.02
tblStationaryGeneratorsPumpsEF	PM2_5_EF	0.15	0.02
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	3.1000e-004

tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,000.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.50
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	80.00
tblTripsAndVMT	HaulingTripLength	20.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	150.00
tblTripsAndVMT	HaulingTripNumber	875.00	1,100.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	VendorTripNumber	100.00	50.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripNumber	13.00	30.00
tblTripsAndVMT	WorkerTripNumber	15.00	60.00
tblTripsAndVMT	WorkerTripNumber	20.00	100.00
tblTripsAndVMT	WorkerTripNumber	250.00	500.00
tblTripsAndVMT	WorkerTripNumber	50.00	100.00
tblTripsAndVMT	WorkerTripNumber	13.00	100.00
tblVehicleTrips	ST_TR	4.31	6.86
tblVehicleTrips	ST_TR	2.46	1.96
tblVehicleTrips	ST_TR	42.04	40.58
tblVehicleTrips	SU_TR	3.43	5.46
tblVehicleTrips	SU_TR	1.05	0.84
tblVehicleTrips	SU_TR	20.43	19.72
tblVehicleTrips	WD_TR	4.18	6.65
tblVehicleTrips	WD_TR	11.03	8.78
tblVehicleTrips	WD_TR	44.32	42.78
tblWoodstoves	NumberCatalytic	5.35	0.00
tblWoodstoves	NumberNoncatalytic	5.35	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	0.5994	4.5868	5.2974	0.0138	0.5713	0.1682	0.7395	0.1706	0.1625	0.3331		1,233.4707				1,236.5886
2023	0.8001	4.8456	7.5518	0.0170	0.7532	0.1993	0.9525	0.2010	0.1936	0.3946		1,494.4540				1,497.8705
2024	2.9407	4.6468	7.6980	0.0178	0.8549	0.1764	1.0313	0.2280	0.1712	0.3992		1,564.6011				1,568.0138
2025	0.9267	0.8046	1.4335	3.3300e-003	0.1711	0.0286	0.1997	0.0456	0.0276	0.0732		293.1476				293.8017
Maximum	**2.9407**	**4.8456**	**7.6980**	**0.0178**	**0.8549**	**0.1993**	**1.0313**	**0.2280**	**0.1936**	**0.3992**		**1,564.6011**				**1,568.0138**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.5994	4.5868	5.2974	0.0138	0.5271	0.1682	0.6953	0.1480	0.1625	0.3104		1,233.4700				1,236.5880

2023	0.8001	4.8456	7.5518	0.0170	0.7532	0.1993	0.9525	0.2010	0.1936	0.3946		1,494.4531				1,497.8696
2024	2.9407	4.6468	7.6980	0.0178	0.8549	0.1764	1.0313	0.2280	0.1712	0.3992		1,564.6002				1,568.0129
2025	0.9267	0.8046	1.4335	3.3300e-003	0.1711	0.0286	0.1997	0.0456	0.0276	0.0732		293.1474				293.8016
Maximum	**2.9407**	**4.8456**	**7.6980**	**0.0178**	**0.8549**	**0.1993**	**1.0313**	**0.2280**	**0.1936**	**0.3992**		**1,564.6002**				**1,568.0129**

	ROG	NOx	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**	**1.88**	**0.00**	**1.51**	**3.51**	**0.00**	**1.89**	**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)
16	**12-15-2021**	**3-14-2022**	1.0881	1.0881
17	**3-15-2022**	**6-14-2022**	0.8317	0.8317
18	**6-15-2022**	**9-14-2022**	1.4278	1.4278
19	**9-15-2022**	**12-14-2022**	1.5463	1.5463
20	**12-15-2022**	**3-14-2023**	1.4247	1.4247
21	**3-15-2023**	**6-14-2023**	1.4219	1.4219
22	**6-15-2023**	**9-14-2023**	1.4198	1.4198
23	**9-15-2023**	**12-14-2023**	1.4135	1.4135
24	**12-15-2023**	**3-14-2024**	1.3535	1.3535
25	**3-15-2024**	**6-14-2024**	1.7498	1.7498
26	**6-15-2024**	**9-14-2024**	2.1702	2.1702
27	**9-15-2024**	**12-14-2024**	2.1571	2.1571
28	**12-15-2024**	**3-14-2025**	1.9259	1.9259
29	**3-15-2025**	**6-14-2025**	0.2044	0.2044
		Highest	2.1702	2.1702

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7802	0.0173	1.1112	9.0000e-005		6.5100e-003	6.5100e-003		6.5100e-003	6.5100e-003		7.0989				7.1743
Energy	0.0354	0.3185	0.2487	1.9300e-003		0.0244	0.0244		0.0244	0.0244		2,441.5981				2,452.2106
Mobile	1.1229	5.3217	14.9818	0.0608	5.4620	0.0464	5.5084	1.4638	0.0431	1.5069		5,626.8486				5,633.4174
Stationary	1.3600e-003	4.8300e-003	0.0251	5.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		4.5696				4.5856
Waste						0.0000	0.0000		0.0000	0.0000		0.0000				278.3258
Water						0.0000	0.0000		0.0000	0.0000		567.8836				709.6128
Total	**3.9398**	**5.6624**	**16.3669**	**0.0628**	**5.4620**	**0.0776**	**5.5395**	**1.4638**	**0.0743**	**1.5380**		**8,647.9987**				**9,085.3265**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7802	0.0173	1.1112	9.0000e-005		6.5100e-003	6.5100e-003		6.5100e-003	6.5100e-003		7.0989				7.1743
Energy	0.0322	0.2901	0.2258	1.7600e-003		0.0223	0.0223		0.0223	0.0223		2,189.2850				2,198.8103
Mobile	0.7790	3.4901	6.6779	0.0226	1.8161	0.0184	1.8345	0.4867	0.0171	0.5038		2,094.8655				2,097.7133
Stationary	1.3600e-003	4.8300e-003	0.0251	5.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		4.5696				4.5856

Waste						0.0000	0.0000		0.0000	0.0000		0.0000				69.5815
Water						0.0000	0.0000		0.0000	0.0000		454.3069				567.6902
Total	**3.5928**	**3.8024**	**8.0400**	**0.0245**	**1.8161**	**0.0474**	**1.8635**	**0.4867**	**0.0461**	**0.5328**		**4,750.1259**				**4,945.5552**

	ROG	NOx	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	**8.81**	**32.85**	**50.88**	**61.08**	**66.75**	**38.89**	**66.36**	**66.75**	**37.95**	**65.36**	**0.00**	**45.07**	**0.00**	**0.00**	**0.00**	**45.57**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/15/2022	5	10	
2	Grading	Grading	1/16/2022	2/15/2022	5	22	
3	Foundation	Site Preparation	2/16/2022	6/30/2022	5	97	
4	Building Construction	Building Construction	7/1/2022	2/28/2025	5	696	
5	Architectural Coating	Architectural Coating	5/1/2024	3/31/2025	5	239	
6	Paving	Paving	3/1/2025	3/31/2025	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 11

Acres of Paving: 0

Residential Indoor: 278,128; Residential Outdoor: 92,709; Non-Residential Indoor: 811,866; Non-Residential Outdoor: 270,622; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	1	8.00	78	0.48

Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Bore/Drill Rigs	1	8.00	221	0.50
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Foundation	Cranes	1	8.00	231	0.29
Foundation	Plate Compactors	2	8.00	8	0.43
Foundation	Pumps	2	8.00	84	0.74
Foundation	Rubber Tired Dozers	0	8.00	247	0.40
Foundation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Foundation	Welders	1	8.00	46	0.45
Building Construction	Aerial Lifts	5	8.00	63	0.31
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Concrete/Industrial Saws	3	8.00	81	0.73
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	5	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	5	8.00	46	0.45

Architectural Coating	Air Compressors	0	6.00	78	0.48
					0.73
					0.42
					0.36
					0.38
					0.37
					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	5	30.00	0.00	150.00	14.70	6.90	80.00	LD_Mix	HDT_Mix	HHDT
Grading	6	60.00	0.00	1,100.00	14.70	6.90	80.00	LD_Mix	HDT_Mix	HHDT
Foundation	8	100.00	50.00	0.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Building Construction	22	500.00	50.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	100.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	100.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

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

Fugitive Dust												0.0000				0.0000
Off-Road												11.2513				11.3133
Total												**11.2513**				**11.3133**

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												20.4077				20.4388
Vendor												0.0000				0.0000
Worker												1.4312				1.4322
Total												**21.8389**				**21.8711**

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				0.0000
Off-Road												11.2513				11.3132

Total												**11.2513**				**11.3132**

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												20.4077				20.4388
Vendor												0.0000				0.0000
Worker												1.4312				1.4322
Total												**21.8389**				**21.8711**

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				0.0000
Off-Road												34.6791				34.9576
Total												**34.6791**				**34.9576**

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												149.6565				149.8848
Vendor												0.0000				0.0000
Worker												6.2974				6.3018
Total												**155.9539**				**156.1866**

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				0.0000
Off-Road												34.6791				34.9576
Total												**34.6791**				**34.9576**

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												149.6565				149.8848
Vendor												0.0000				0.0000
Worker												6.2974				6.3018
Total												**155.9539**				**156.1866**

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					
Fugitive Dust												0.0000				0.0000
Off-Road												118.0837				118.6019
Total												**118.0837**				**118.6019**

Unmitigated Construction Off-Site

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

Hauling												0.0000				0.0000
Vendor												78.4720				78.6370
Worker												46.2765				46.3084
Total												**124.7485**				**124.9453**

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				0.0000
Off-Road												118.0835				118.6018
Total												**118.0835**				**118.6018**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												78.4720				78.6370

Worker												46.2765				46.3084
Total												**124.7485**				**124.9453**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road												374.4109				375.8740
Total												**374.4109**				**375.8740**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												80.0186				80.1381
Worker												312.4857				312.7008
Total												**392.5043**				**392.8389**

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												374.4105				375.8735
Total												**374.4105**				**375.8735**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												80.0186				80.1381
Worker												312.4857				312.7008
Total												**392.5043**				**392.8389**

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												743.1047				745.9271
Total												**743.1047**				**745.9271**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												153.8436				154.0532
Worker												597.5057				597.8902
Total												**751.3493**				**751.9434**

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												743.1038				745.9262
Total												**743.1038**				**745.9262**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												153.8436				154.0532
Worker												597.5057				597.8902
Total												**751.3493**				**751.9434**

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												748.8191				751.6211
Total												**748.8191**				**751.6211**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												154.4094				154.6175
Worker												583.4331				583.7882
Total												**737.8425**				**738.4057**

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												748.8182				751.6202
Total												**748.8182**				**751.6202**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												154.4094				154.6175
Worker												583.4331				583.7882
Total												**737.8425**				**738.4057**

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												122.8982				123.3498
Total												**122.8982**				**123.3498**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												25.2039				25.2376
Worker												92.0466				92.0997
Total												**117.2505**				**117.3373**

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												122.8981				123.3496
Total												**122.8981**				**123.3496**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												25.2039				25.2376
Worker												92.0466				92.0997
Total												**117.2505**				**117.3373**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

Hauling												0.0000				0.0000
Vendor												0.0000				0.0000
Worker												77.9395				77.9870
Total												**77.9395**				**77.9870**

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				0.0000
Off-Road												0.0000				0.0000
Total												**0.0000**				**0.0000**

Mitigated Construction Off-Site

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

Worker												77.9395				77.9870
Total												**77.9395**				**77.9870**

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				0.0000
Off-Road												0.0000				0.0000
Total												**0.0000**				**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												0.0000				0.0000
Worker												27.3999				27.4157
Total												**27.3999**				**27.4157**

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				0.0000
Off-Road												0.0000				0.0000
Total												**0.0000**				**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												0.0000				0.0000
Worker												27.3999				27.4157
Total												**27.3999**				**27.4157**

3.7 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road												16.6083				16.7032
Paving												0.0000				0.0000
Total												**16.6083**				**16.7032**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												0.0000				0.0000
Worker												8.9906				8.9958
Total												**8.9906**				**8.9958**

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												16.6083				16.7032
Paving												0.0000				0.0000
Total												**16.6083**				**16.7032**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling												0.0000				0.0000
Vendor												0.0000				0.0000
Worker												8.9906				8.9958
Total												**8.9906**				**8.9958**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated												2,094.8655				2,097.7133
Unmitigated												5,626.8486				5,633.4174

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse High Rise	711.55	734.02	584.22	2,380,286	791,445
General Office Building	4,688.87	1,046.72	448.59	11,477,452	3,816,253
Strip Mall	308.02	292.18	141.98	536,597	178,419
					4,786,116

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
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse 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
General Office Building	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

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												1,870.4603				1,878.0909
Electricity Unmitigated												2,091.6693				2,100.2023
NaturalGas Mitigated												318.8247				320.7193
NaturalGas Unmitigated												349.9288				352.0083

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse High Rise	986213												52.6281				52.9408
General Office Building	5.5594e+006												296.6707				298.4336
Strip Mall	11808												0.6301				0.6339
Total													**349.9288**				**352.0083**

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					
Condo/Townhouse High Rise	939283												50.1237				50.4216
General Office Building	5.02429e+006												268.1150				269.7083
Strip Mall	10980												0.5859				0.5894
Total													**318.8247**				**320.7193**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse High Rise	451512				126.6730
General Office Building	6.93723e+006				1,946.2596
Strip Mall	97200				27.2697
Total					

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse High Rise	422972				118.6660
General Office Building	6.18823e+006				1,736.1265
Strip Mall	83044.8				23.2985
Total					

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												7.0989				7.1743
Unmitigated												7.0989				7.1743

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				0.0000
Consumer Products												0.0000				0.0000
Hearth												5.2830				5.3144
Landscaping												1.8159				1.8599
Total												**7.0989**				**7.1743**

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				0.0000
Consumer Products												0.0000				0.0000
Hearth												5.2830				5.3144
Landscaping												1.8159				1.8599
Total												**7.0989**				**7.1743**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				567.6902
Unmitigated				709.6128

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse High Rise	6.97148 / 4.39506				48.6558
General Office Building	94.9169 / 58.1749				657.2639
Strip Mall	0.533322 / 0.326875				3.6931
Total					**709.6128**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse High Rise	5.57718 / 3.51605				38.9247
General Office Building	75.9335 / 46.5399				525.8111
Strip Mall	0.426658 / 0.2615				2.9544
Total					**567.6902**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				69.5815
Unmitigated				278.3258

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse High Rise	49.22				24.7528
General Office Building	496.66				249.7711
Strip Mall	7.56				3.8019
Total					**278.3258**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse High Rise	12.305				6.1882
General Office Building	124.165				62.4428
Strip Mall	1.89				0.9505
Total					**69.5815**

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	0.5	12	1000	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 (750 - 9999 HP)												4.5696				4.5856
Total												**4.5696**				**4.5856**

11.0 Vegetation

222 West 2nd Street

LCFS Emissions Reduction Calculations

Ameded LCFS Carbon Intensity Reduction Requirements

Year	Carbon Intensity (CI) Reduction (%)
2019	6.25%
2020	7.50%
2021	8.75%
2022	10.00%
2023	11.25%
2024	12.50%
2025	13.75%
2026	15.00%
2027	16.25%
2028	17.50%
2029	18.75%
2030	20.00%

Project Buildout Year	2025
CI Reduction (%)	13.75%
Project Mobile Source Emissions (MT CO2E/year)	2,098
Project Mobile Source Emissions with LCFS reductions (MT CO2E/year)	1,809

Source: https://www.arb.ca.gov/fuels/lcfs/2018-0815_illustrative_compliance_scenario_calc.xlsx

222 West 2nd Street

Project GHG Emissions (Efficiency Metric Comparison)

Per Capita Calculations (Efficiency Metric)	
Annual Project GHG Emissions (tons/year)	4,810
Service Population	
Residents	261
Employees	2,322
Total Service Population	2,583
Per Capita GHG (tons/SP)	**1.9**