SANITATION DISTRICTS OF LOS ANGELES COUNTY

CARRIAGE CREST PARK RESERVOIR PROGRAM

Air Quality and Greenhouse Gas Technical Report

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ABBREVIATION

AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards (CAAQS)
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel Particulate Matter
EPA	Environmental Protection Agency
GHG	Greenhouse Gases
HRA	Health Risk Assessment
H_2S	Hydrogen sulfide
LACFCD	Los Angeles County Flood Control District
LACSD	Sanitation Districts of Los Angeles County
LST	Localized Significance Thresholds
MMP	mitigation monitoring plan
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen dioxide
O_3	Ozone
Pb	Lead
PM_{10}	fine particulate matter equal to or less than 10 microns
$PM_{2.5}$	fine particulate matter equal to or less than 2.5 microns
ROG	Reactive organic gases
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SO_2	Sulfur dioxide
TACs	Toxic Air Contaminants
TSP	Total suspended particulate

SECTION 1

EXECUTIVE SUMMARY

This Air Quality/Greenhouse Gas Technical Report provides an analysis of the potential environmental impacts associated with building a storm drain diversion of dry and wet weather runoff into a centralized pretreatment device and then an underground reservoir. The reservoir will be located beneath the existing baseball fields at Carriage Crest Park in Carson. The captured water will be detained and pumped by a 20 cubic feet per second pump station to an existing 60" diameter sanitary sewer line for additional use by the Sanitation Districts of Los Angeles County (LACSD) or in the event of an emergency or when dewatering of the reservoir becomes necessary back to the Los Angeles County Flood Control District (LACFCD) storm drain to provide additional capacity in the reservoir.

All analyses have been conducted in compliance with the South Coast Air Quality Management District (SCAQMD) requirements for air quality assessments in support of California Environmental Quality Act (CEQA) documentation. The findings of the analyses are as follows:

- Project construction would not cause an exceedance of daily regional emission thresholds, and would not expose off-site receptors to significant levels of toxic air contaminants.
- Project operations would not cause an exceedance of daily regional or local emission thresholds set forth by the SCAQMD.
- Project operations would not expose off-site receptors to significant levels of toxic air contaminants.
- Project operations would result in a minimal increase in Statewide greenhouse gas (GHG) emissions; this would not contribute significantly to global climate change.
- The project would not result in cumulatively significant impacts during construction or operation.

SECTION 2

DESCRIPTION OF PROJECT

2.1 PURPOSE

This Air Quality/Greenhouse Gas Technical Report provides an analysis of the potential environmental impacts associated with building a storm drain diversion of dry and wet weather runoff into a centralized pretreatment device and then an underground reservoir. The reservoir will be located beneath the existing baseball fields at Carriage Crest Park in Carson. The captured water will be detained and pumped by a 20 cubic feet per second pump station to an existing 60" diameter sanitary sewer line for additional use by the Sanitation Districts of Los Angeles County (LACSD) or in the event of an emergency or when dewatering of the reservoir becomes necessary back to the Los Angeles County Flood Control District (LACFCD) storm drain to provide additional capacity in the reservoir.

2.2 SITE LOCATION

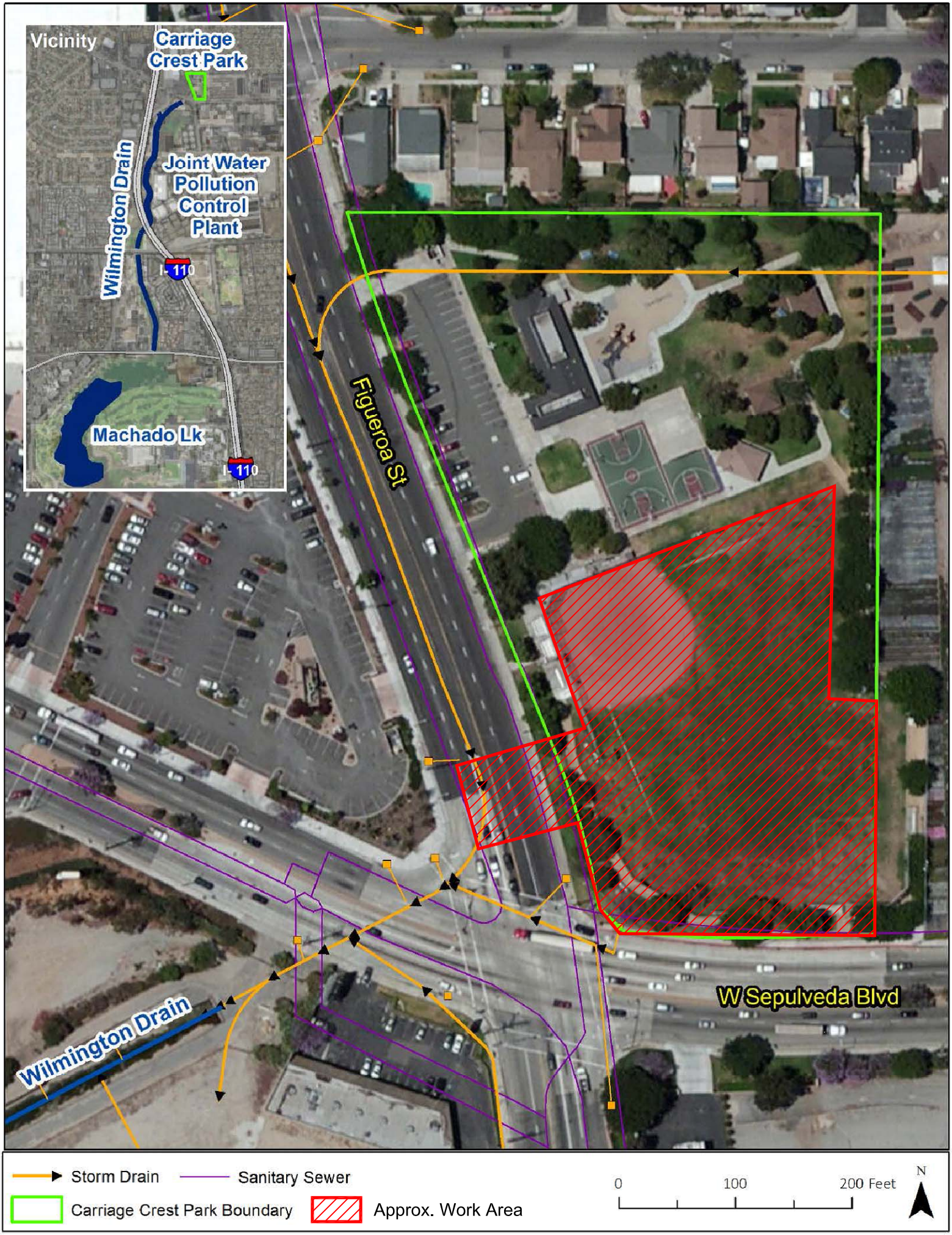
The proposed project is located in the City of Carson, in Los Angeles County, California. Carriage Crest Park is located at the intersection of West Sepulveda Boulevard and South Figueroa Street, east of Scott Park and 2 miles north of Los Angeles Harbor College. The park is currently open to the public, hosting many softball and baseball tournaments. There is a basketball court and a decomposed granite trail that many joggers use for laps. The park size is approximately 4.8 acres. The estimated project area will be approximately 1.8 acres. Figure 1 shows the proposed project location and boundaries.

2.3 PROJECT DESCRIPTION

The LACSD is in charge of hiring, directing, and overseeing the work of consultants for the design of the storm drain diversion.

There are five principal components to the building of the reservoir:

- Preparing and organizing workers and clearing the land of all vegetation prior to excavation
- Precast underground storage installation
- Pump station, drop inlet structure or rubber dam, pretreatment devices, diversion modifications, and valves construction
- Mass Site Grading
- Fine grading, including paving, reconstruction the baseball field, landscape, and irrigation.


Vicinity
Carriage Crest Park
Joint Water Pollution Control Plant
Wilmington Drain
I-110
Machado Lk
I-110
Figueroa St
W Sepulveda Blvd
Wilmington Drain
Storm Drain
Sanitary Sewer
Carriage Crest Park Boundary
Approx. Work Area
0
100
200 Feet
N

2.4 EXISTING AIR QUALITY

2.4.1 Air Pollutants

Air pollutant emissions within the South Coast Air Basin (SCAB) are generated from stationary, mobile, and natural sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at an identified location and are usually associated with manufacturing and industry. Examples are boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and produce many small emissions. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, agricultural fields, landfills, and consumer products such as barbeque lighter fluid and hair spray. Construction activities that create fugitive dust such as excavation and grading also contribute to area source emissions. Mobile sources refer to emissions from on- and off-road motor vehicles, including tailpipe and evaporative emissions. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, trains, and construction equipment. Mobile sources account for majority of the air pollutant emissions within the air basin. Air pollutants can also be generated by the natural environment such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

To protect the public health and welfare, the federal and State governments have identified five criteria air pollutants and a host of air toxics, and have established ambient air quality standards through the Federal Clean Air Act and the California Clean Air Act. The air pollutants for which federal and State standards have been promulgated and which are most relevant to air quality planning and regulation in the air basins include ozone, carbon monoxide, suspended particulate matter, sulfur dioxide, and lead.

Air pollutants are typically classified as primary or secondary pollutants. Carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter (PM), Sulfur Dioxide (SO_2), and Lead (Pb) are considered primary pollutants because they are emitted directly into the atmosphere. Ozone (O_3), a secondary pollutant, is formed through a photochemical reaction in the atmosphere with reactive organic compounds (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight.

Both the federal and State governments have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect public health, as shown in Table 1. The national and State ambient air quality standards have been set at levels whose concentrations could be generally harmful to human health and welfare and to protect the most sensitive persons from illness or discomfort with a margin of safety. While ambient air quality standards have been developed specifically for O_3 and NO_X, there is no State or federal ambient air quality standard for ROGs. ROGs include many compounds of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, methane, among others. While the State and federal entities have not established ambient attainment levels for ROGs, they have for O_3. Because ROGs react with NO_X through photochemical reactions to form ozone, air districts, including SCAQMD, have provided ROG

significance thresholds for project-level analysis in order to further limit the levels of ROGs available in the atmosphere that can be converted to ozone.

Table 1. State and Federal Air Quality Standards

Pollutant	Averaging Time	California Standards [a]		Federal Standards [b]		
		Concentration [c]	Method [d]	Primary [c,e]	Secondary [c,f]	Method [g]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9 ppm (10mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.03 ppm (56 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemi-luminescence
	1 Hour	0.18 ppm (339 µg/m^3)		0.10 ppm	None	
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 µg/m^3)	Ultraviolet Fluorescence	0.14 ppm (365 µg/m^3)	—	Ultraviolet Fluorescence; Spectrophoto-metry (Pararosaniline Method)[9]
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		0.075 ppm (196 µg/m^3)	—	
Lead (Pb) [h]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary	High Volume

Pollutant	Averaging Time	California Standards [a]		Federal Standards [b]		
		Concentration [c]	Method [d]	Primary[c,e]	Secondary[c,f]	Method [g]
	Rolling 3-Month Average	—		0.15 µg/m^3	Standard	Sampler and Atomic Absorption
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates (SO_4)	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride [h]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

[a] *California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter (PM_{10}, and $PM_{2.5}$) and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.*

[b] *National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.*

[c] *Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.*

[d] *Any equivalent procedure which can be shown to the satisfaction of the California Air Resources Board (CARB) to give equivalent results at or near the level of the air quality standard may be used.*

[e] *National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.*

[f] *National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.*

[g] *Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.*

[h] *CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*

Source: California Air Resources Board (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, updated 05/04/16)

2.4.2 Air Pollutant Constituents and Attainment Status

A state or region is given the status of "attainment" or "unclassified" if ambient air quality standards have not been exceeded. A status of "nonattainment" for particular criteria pollutants is assigned if the ambient air quality standard for that pollutant has been exceeded. Once designated as nonattainment, attainment status may be achieved after three years of data showing non-exceedance of the standard. When an area is reclassified from nonattainment to attainment, it is designated as a maintenance area, indicating the requirement to establish and enforce a plan

to maintain attainment with the standard. Following is a short description of the regulated air pollutants and their effect on human health.

Ozone

Ozone (O_3) is a colorless toxic gas that irritates the lungs and damages materials and vegetation. During the summer's long daylight hours, plentiful sunshine provides the energy needed to fuel photochemical reactions between NO_2 and ROGs which result in the formation of O_3. Conditions that lead to high levels of O_3 are adequate sunshine, early morning stagnation in source areas, high surface temperatures, strong and low morning inversions, greatly restricted vertical mixing during the day, and daytime subsidence that strengthens the inversion layer (all of which are characteristic of Southern California). Short-term exposures (lasting for a few hours) to ozone at levels typically observed in Southern California can result in changes in breathing patterns, reductions in lung capacity, and increased susceptibility to respiratory illnesses. O_3 is a problematic air contaminant in the SCAB. Maximum ozone concentrations in the SCAB usually are recorded during summer months.

Nitrogen Dioxides

The forms of nitrogen oxide that are important in air pollution are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed by a combination of nitrogen and oxygen when combustion takes place under high temperatures and pressures. NO_2 is a reddish-brown gas formed by the combination of NO with oxygen. Combustion in motor vehicle engines, power plants, refineries and other industrial operations, as well as ships, railroads and aircraft, are the primary sources of NO. NO_2 at atmospheric concentrations is a potential irritant and can cause coughing in healthy persons, due to increased resistance to air flow and airway contraction. Larger decreases in lung functions are observed in individuals with preexisting respiratory illness. Long-term exposure to NO_2 can potentially lead to increased levels of respiratory illness in children. NOx is one of the main ingredients involved in the formation of ground-level ozone, which can trigger serious respiratory problems.

Carbon Monoxide

Carbon monoxide (CO) is a product of inefficient combustion, principally from automobiles and other mobile sources of pollution. In many areas of California, CO emissions from sources such as wood-burning stoves and fireplaces also can be measurable contributors during cold-weather months. Industrial sources of pollution generally contribute less than 10 percent of ambient CO levels. Peak CO levels occur typically during winter months because of a combination of seasonal contributions from home heating devices and stagnant weather conditions. CO reduces the oxygen-carrying capacity of the blood and in high concentrations can cause death. At lower concentrations, people exposed experience dizziness and headaches.

Sulfur Dioxide

Sulfur dioxide (SO_2) is produced when any sulfur-containing fuel is burned. Chemical plants that treat or refine sulfur or sulfur-containing chemicals also emit SO_2. Because of the complexity of the chemical reactions that convert SO_2 to other compounds (such as sulfates), peak concentrations of SO_2 occur at different times of the year in different parts of the State, depending on local fuel characteristics, weather, and topography. SO_2 can cause bronchia constriction and may aggravate respiratory diseases. In moist environments, SO_2 may combine with water to form sulfuric acid, a component of acid deposition.

Fine Particulates (PM_{10}, $PM_{2.5}$)

Particulate matter in the air is composed of windblown fugitive dust; particles emitted from combustion sources (usually carbon particles); and organic, sulfate, and nitrate aerosols formed in the air from emitted hydrocarbons, sulfur oxides, and oxides of nitrogen. In 1984, the California Air Resources Board (CARB) adopted standards for fine particulate (PM_{10} - particulate matter of less than 10 microns), and phased out the total suspended particulate (TSP) standards used up to that time. PM_{10} standards were substituted for TSP standards because PM_{10} corresponds to the size range of inhalable particulate related to human health. In 1987, EPA also replaced national TSP standards with PM_{10} standards. In July 1997, the Environmental Protection Agency (EPA) adopted new standards for fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$).

Particulates are a public health and welfare concern for several reasons. Particulates may be intrinsically toxic because of their inherent chemical and/or physical characteristics. Particulate matter may interfere with one or more of the mechanisms that normally clear the respiratory tract. Finally, fine particulates, which are easily carried deep into the lungs, may act as carriers of absorbed toxic substances. Thus, elevated particulate concentrations may exacerbate pre-existing respiratory diseases such as bronchitis. Particulate matter, especially fine particulate, also interferes with visibility.

The SCAB currently exceeds both the federal and State $PM_{2.5}$ standards. It is classified as attainment for the federal PM_{10} standard and non-attainment for the State PM_{10} standard.

Lead

Lead is found in old paints and coatings, plumbing, and various other materials. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are a diverse group of air pollutants that can affect human health, but have not had ambient air quality standards established for them. This is not because they are fundamentally different from the pollutants discussed above, but because their effects tend to be local rather than regional. CARB has designated nearly 200 compounds as TACs. Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds, the most important being particulate matter from diesel-fueled engines. Inhaling TACs may increase the chances of experiencing various health problems, such as cancer, respiratory tract irritation, birth defects, etc. .

2.5 EXISTING REGIONAL AIR QUALITY EMISSIONS

Measurements of ambient concentrations of criteria pollutants are used by the United States EPA and the ARB to assess and classify the air quality of each air basin, county, or, in some cases, a specific developed area. The classification is determined by comparing monitoring data with national and California air quality standards. If a pollutant concentration in an area is lower than the standard, the area is classified as being in "attainment." If the pollutant exceeds the standard, the area is in marginal, moderate, serious, severe, or extreme "nonattainment," depending on the magnitude of the air quality standard exceedance. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified."

South Coast Air Basin

The SCAB is surrounded by mountains trapping the air and its pollutants in the valleys or basins below. This area, also known as the Basin, includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. Bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, the SCAB is an area of high air pollution potential. The regional climate within the Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. Air quality within the Basin is influenced by a wide range of emissions sources, such as dense population centers, heavy vehicular traffic, and industry.

The annual average temperature varies throughout the Basin. Annual temperature in Carson ranges from the low 50°F to over 100°F during the summer. The project is located in the Los Angeles County. Typically the hottest months are July and August, and the coldest months are December and January.

The majority of annual rainfall in the Basin occurs between December and March. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions. The annual average total of rainfall in the SCAB area of the Los Angeles County is 15 inches. The Basin experiences a persistent temperature inversion, which is characterized by increasing temperature with increasing altitude. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. Aside from a persistent temperature inversion, the vertical dispersion of air contaminants in the Basin is also affected by wind conditions. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. Conversely, on days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas in the Basin are transported eastward, predominantly into Riverside and San Bernardino Counties. Santa Ana winds, which are strong and dry north or northeasterly winds that occur during the fall and winter months, disperse air contaminants differently through the Basin, generally resulting in worse air conditions in the western parts of the Basin. Santa Ana conditions tend to last for several days at a time.

SCAB has very low average wind speeds; the dominant daily wind pattern is an onshore 8 to 12 mph during the day and offshore 3 to 5 mph winds during the night. These wind patterns are disrupted occasionally by winter storms or strong northeasterly Santa Ana winds from the mountains and deserts northeast of the SCAB. Table 2 lists criteria air pollutants and their attainment status in the SCAB.

Table 2. Criteria Pollutants Attainment Status in the South Coast Air Basin

Air Pollutants	State	Federal
Ozone (1-Hour)	Nonattainment	-
Ozone (8-Hour)	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
NO_2	Attainment	Unclassified/Attainment
CO	Attainment	Unclassified/Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Unclassified/Attainment (Orange County) Nonattainment (portion of Los Angeles County)
Sulfates	Attainment	-
Hydrogen Sulfide	Unclassified	-
Visibility Reducing Particles	Unclassified	-

Source: California Air Resources Board 2016.

SECTION 3

AIR QUALITY THRESHOLDS OF SIGNIFICANCE

This section discusses the applicable significance thresholds for air quality assessment. The air quality guidance recommended by the SCAQMD is used to assess air quality impacts from the proposed project.

3.1. CRITERIA POLLUTANTS

SCAQMD has published thresholds of significance for air quality. A project has a significant air quality impact if it does one of the following:

- Generates total emissions that exceed the thresholds shown in Table 3; and/or
- Maximum daily localized emissions are greater than the Localized Significance Thresholds (LST), resulting in predicted ambient concentrations in the vicinity of the project site greater than the most stringent ambient air quality standards for CO and NO_2; and/or
- Maximum localized PM_{10} or $PM_{2.5}$ emissions during construction are greater than the applicable LSTs, resulting in predicted ambient concentrations in the vicinity of the site to exceed 50 $\mu g/m^3$ over five hours (SCAQMD Rule 403 control requirement); and/or
- The project would not be compatible with SCAQMD and Southern California Association of Governments (SCAG) air quality policies. The project is not compatible with SCAQMD and SCAG air quality policies if it:
  - Causes an increase in the frequency or severity of existing air quality violations;
  - Causes or contributes to new air quality violations;
  - Delays timely attainment of air quality standards or the interim emission reductions specified in the SCAQMD's Air Quality Management Plan (AQMP); or
  - Exceeds the assumptions utilized in the SCAQMD's AQMP.

Table 3. Significant Emission Thresholds

Mass Daily Thresholds[a]		
Pollutant	Construction[b]	Operation[c]
Nitrogen Oxide (NOx)	100 lbs/day	55 lbs/day
Reactive Organic Gas (ROG)	75 lbs/day	55 lbs/day
Particle Pollution (PM_{10})	150 lbs/day	150 lbs/day
Particle Pollution ($PM_{2.5}$)	55 lbs/day	55 lbs/day
Sulfur Oxides (SOx)	150 lbs/day	150 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and Greenhouse Gas (GHG) Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk> 10 in 1 million Chronic and Acute Hazard Index > 1.0 (project increment) Cancer Burden > 0.5 excess cancer cases (in areas > 1 in 1 million)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000MT/yr Carbon Dioxide (CO_2) eq for industrial facilities	
Ambient Air Quality for Criteria Pollutants[d]		
NOx1-hour average annual average	In attainment; significant if project causes or contributes to an exceedance of any standard: 0.18 ppm (State) 0.03 ppm (State) and 0.0534 ppm (federal)	
PM_{10},24-hour annual average	10.4 µg/m^3(construction) and 2.5 µg/m^3(operation) 1.0 µg/m^3	
$PM_{2.5}$,24-hour average	10.4 µg/m^3 (construction) and 2.5 µg/m^3 (operation)	
SO_2,1 -hour average 24-hour average	0.255 ppm (State) and 0.075 ppm federal - 99th percentile) 0.04 ppm (State)	
Sulfate 24-hour average	25 µg/m^3 (State)	
CO,1-hour average 8-hour average	In attainment; significant if project causes or contributes to an exceedance of any standard: 20 ppm (State) and 35 ppm (federal) 9.0 ppm (State/federal)	
Lead 30-day average Rolling3-month average	1.5 µg/m^3 (State) 0.15 µg/m^3 (federal) 1.5 µg/m^3 (federal)	

a) Source: SCAQMD CEQA Handbook
b) Construction thresholds apply to both the South Coast Air Basin (SCAB) and Coachella Valley (Salton Sea and Mojave Desert Air Basin).
c) For Coachella Valley; the mass daily thresholds for operation are the same as the construction thresholds.
d) SCAQMD Rule 1303 Table A-2 unless otherwise stated.
KEY: ppm = parts per million;µg/m^3 = microgram per cubic meter; lbs/day = pounds per day; MT/yr C02eq = metric tons per year of CO_2 equivalents.

3.2 GREENHOUSE GASES AND STATE STANDARDS

Global climate change refers to changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation and storms. Historical records indicate that global climate changes have occurred in the past due to natural phenomena; however, data indicate that current global conditions differ from past climate changes in rate and magnitude. According to the Intergovernmental Panel on Climate Change (IPCC), the increase in atmospheric GHGs is largely the result of human activities, namely fossil fuel combustion, land use changes and agriculture (IPCC 2007). GHGs are those compounds in the Earth's atmosphere that play a critical role in determining the Earth's surface temperature. Specifically, these gases allow high-frequency solar radiation to enter the Earth's atmosphere, but retain the low frequency energy which is radiated back from the Earth towards space, resulting in a warming of the atmosphere. Increased concentrations of GHGs in the Earth's atmosphere have been linked to global climate change and such conditions as rising surface temperatures, melting icebergs and snowpack, rising sea levels, and the increased frequency and magnitude of severe weather conditions.

GHGs include carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Carbon dioxide is the most abundant GHG in the atmosphere. GHGs are the result of both natural and anthropogenic activities. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions.

In September 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act of 2006, also known as AB 32, into law. AB 32 commits the State to achieving the following:

- 2000 GHG emission levels by 2010 (which represents an approximately 11 percent reduction from business as usual)
- 1990 levels by 2020 (approximately 25 percent below business as usual)

To achieve these goals, AB 32 mandates that CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce Statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved

The CEQA Guidelines, Section 15064.7, define a threshold of significance as an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the

agency and compliance with which means the effect normally will be determined to be less than significant. CEQA gives wide latitude to lead agencies in determining what impacts are significant and does not prescribe thresholds of significance, analytical methodologies, or specific mitigation measures. CEQA leaves the determination of significance to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects.

The SCAQMD released a draft guidance document regarding interim CEQA GHG significance thresholds in October 2008. SCAQMD proposed a tiered approach, whereby the level of detail and refinement needed to determine significance increases with a project's total GHG emissions. In December 2008, SCAQMD adopted interim CEQA GHG significance thresholds for use only when SCAQMD is the lead agency on projects. These thresholds apply to industrial projects only, and include a 10,000 metric ton CO_2e screening level. For purposes of this analysis, the 10,000 metric ton CO_2e threshold for industrial projects is applied to this project.

While it is difficult to predict the specific impact of one project's incremental contribution to the global effects of GHG emissions due to a variety of factors, including the complex and long term nature of such effects and the global scale of climate change, it is possible to determine whether a project is implementing design strategies consistent with the guidance that is available. Thus, if a project implements design strategies consistent with the goals of AB 32, the project will not be considered to have a significant impact with respect to global climate change, either on a project-specific basis or with respect to its contribution to a cumulative impact on global climate change.

SECTION 4

AIR QUALITY IMPACT ASSESSMENT

4.1 OVERVIEW OF THE ANALYSIS METHODOLOGY

To determine whether or not air quality impacts from the proposed project are significant, air quality impact analyses are performed and compared to the significance criteria in Table 3. If impacts equal or exceed any of the criteria in Table 3, they will be considered significant. Significance determinations for construction impacts are based on the maximum or peak daily emissions during the construction period, which provides a "worst-case" analysis of the construction emissions. Similarly, significance determinations for operational emissions are based on the maximum or peak daily allowable emissions during the operational phase.

Regional and localized emissions were calculated using the SCAQMD-approved California Emissions Estimator Model (CalEEMod). The model was developed by the SCAQMD in collaboration with other air districts in California to estimate criteria air pollutant and greenhouse gas emissions from a variety of land use development projects. It can be used in air quality analysis to estimate impacts for compliance with regulations, such as CEQA, and local air quality rules and regulations. The CalEEMod model files can be found in Appendix A.

In addition to the CalEEMod model, the SCAQMD's localized significance threshold (LST) methodology is used to analyze localized construction emissions (SCAQMD LST Methodology). The LST methodology uses look-up thresholds for projects which disturb five acres or less per day. Since site will disturb approximately one acre or less per day, the look-up thresholds were used.

4.2 AIR QUALITY IMPACTS FROM CONSTRUCTION

4.2.1 Regional Impacts

Impacts on regional air quality from project construction activities are evaluated in this section. Construction emissions are expected from the following equipment and processes:

- On-site Fugitive Dust Associated with Site Construction Activities;
- On-site Construction Equipment (dump trucks, backhoes, graders, etc.); and
- On-site and Off-site Vehicle Emissions, including Delivery Trucks and Worker Vehicles.

The CalEEMod model divides the construction processes into phases, including demolition, mass site grading, fine site grading, trenching, building construction, architectural coating and paving. These model settings can be modified to fit applicable features of a specific project.

Construction of this project is estimated to occur over the course of 19 months.. The following construction phases are assumed:

Phase 1: Demolition;
Phase 2: Precast Underground Concrete Storage Installation;
Phase 3: Pump Station and Storm Drain Construction;
Phase 4: Mass Site Grading; and
Phase 5: Aboveground Improvements.

Table 4 shows the construction schedules. Each construction phase could generate the following emissions:

(1) Fugitive dust emissions resulting from soil disturbance activity.

Construction activities at the site including grading, trenching, and truck filling/dumping, generates dust emissions. Vehicles and trucks traveling on paved and unpaved roads are also a source of fugitive emissions during the construction period. Table 4 shows the anticipated soil acreage disturbed for each phase.

During construction, the proposed project would be subject to SCAQMD Rules 403 (Fugitive Dust). The purpose of Rule 403 is to reduce man-made fugitive dust. Rule 403 requires implementing control measures to prevent, reduce, or mitigate fugitive dust emissions and includes a performance standard that prohibits visible emissions from crossing any property line (SCAQMD Rule 403). Dust control measures, such as water application on dry soil and reduced vehicles travelling on unpaved roads, are standard mitigation techniques. Project construction will be required to comply with Rule 403. Implementing the dust suppression techniques specified in Rule 403 can reduce the fugitive dust generation (and thus the PM_{10} component) by 50 percent or more. Estimation of fugitive dust emissions during project construction assumes Rule 403 compliance.

(2) Emissions of air pollutants from fuel combustion in construction equipment.

On-site construction equipment will be a source of combustion emissions. Construction equipment is expected to include water truck, dump truck, graders, excavators, loader, compactor, and rubber tired dozer. The equipment is assumed to be operational eight hours per day. Table 5 shows the typical construction equipment mix used at the project site.

(3) Emissions of air pollutants from fuel combustion in vehicles and trucks.

Vehicles used for worker commute and delivery trucks for material delivery to the site, and haul trucks used for construction debris disposal will be a source of combustion emissions. Primary emissions generated will include combustion emissions from engines during idling and while operating. Emissions are based on the estimated number of trips per day and the round trip travel distances. Table 4 provides the worker commute and haul truck information.

Data presented in Tables 4 and 5 were input into the CalEEMod model. Construction activities result in emissions of CO, ROGs, NOx, SOx, PM_{10}, and $PM_{2.5}$. and GHGs.

Construction emissions are summarized in Table 6. Table 7 compares the project element emissions with the SCAQMD's regional and localized construction significance threshold levels. As Table 7 shows, construction-related daily (short-term) emissions would not exceed SCAQMD regional significance thresholds for ROGs, NOx, CO, SO_2, and PM. Thus, project construction emissions would result in a less than significant regional impact.

Construction emissions can vary from day to day, depending on the level of activity, the specific type of operation, and the prevailing weather conditions. The number and types of construction equipment, vendor trips (e.g., transport of building materials), and worker trips were based on relatively conservative assumptions for a project of this type and scale as provided in the CalEEMod model. A complete listing of the construction equipment by phase and construction phase duration assumptions used in this analysis is included within the CalEEMod printout sheets that are provided in Appendix A.

4.2.2 Localized Impacts

In addition to the SCAQMD's regional significance threshold, the SCAQMD has also developed localized significance thresholds (LSTs) that identify daily emissions levels at a project construction site that could cause or contribute to adverse localized air quality impacts to the nearest sensitive receptors.

For projects with a daily construction footprint larger than five acres, SCAQMD recommends that the localized air quality impact analysis be performed using an appropriate air dispersion model. For projects with a daily construction footprint of five acres or less, the SCAQMD has developed the LST methodology to determine localized impacts. This LST Methodology consists of mass emission rate look-up tables. If the calculated emissions for the construction activity are below the emission level found in the LST lookup tables, the construction activity is not considered significant. The screening tables were developed using conservat3ive assumptions, including the worst meteorological conditions. If localized emissions exceed the values in the lookup tables, dispersion modeling, which is more precise, may be performed.

Since the maximum daily construction footprint for the project site would be less than five acres, the LST Methodology would be applicable. LSTs apply only to the following criteria pollutants: NOx, CO, PM_{10}, and $PM_{2.5}$, and apply only to emissions generated on site. LSTs represent the maximum on-site emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or State ambient air quality standards and are developed based on the ambient concentrations of that pollutant in that area.

Table 7 summarizes the localized impacts from the construction activities, together with the SCAQMD's daily construction LST significance threshold levels.

As Table 7 shows, construction-related daily (short-term) emissions would not exceed SCAQMD localized significance thresholds for NOx, CO, and PM. Thus, project construction emissions would result in a less than significant localized impact.

Table 4. Construction Schedule, Worker Commute and Haul Truck Data

Phase (Note 1)	Description	Start Date	End Date	Duration (days)	Excavation Volume of Soil (CY)	Haul Trucks Trips	Truck Distance Round Trip (Miles)	Number of Workers/ day
Mobilization & Demolition	includes mobilization, clear & grub, excavation	9/20/2017	5/19/2018	173	35,000	5,000	15	10
Precast Underground Concrete Storage Installation		5/20/2018	7/15/2018	40	0	0	0	10
Pump Station and Storm Drain Construction	includes pump station, drop-inlet structure or rubber dam, pretreatment devices, diversion modifications, valves	7/16/2018	9/13/2018	44	0	0	0	10
Mass Site Grading		9/14/2018	11/20/2018	38	0	0	0	10
Aboveground Improvements	includes fine grading, paving, baseball field, landscape & irrigation	11/21/2018	4/17/2019	106	0	0	0	10

Notes:
1. Phases can be added/subtracted/combined

Table 5. Construction Equipment

Quantity	Equipment	Hours of operation
Mobilization & Demolition		
Dozer	1	8
Concrete Saw	1	8
Pavement Breaker	1	8
Backhoe Loader	3	8
Dumper	8	6
Core Drill	1	4
Industrial Saw	1	8
Precast Underground Concrete Storage Installation		
Crane	1	8
Loader	1	8
Soil Compactor	1	8
Pump Station and Storm Drain Construction		
Trench Digger	2	8
Air Compressor	1	8
Loader	1	8
Soil Compactor	1	8
Crane	1	8
Pump	1	8
Mass Site Grading		
Compact Track Loader	1	8
Soil Compactor/Roller	1	8
Aboveground Improvements		
Dumper	1	6
Asphalt Paver	1	8
Cement Mixer	1	8
Concrete Paver	1	8

Table 6. Construction Emissions

2018 - 2019	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$	GHG
Emission Unit	**lbs/day**						**MT/yr**
Total	4.16	40.23	34.25	0.05	12.13	3.31	996.73
Threshold	75	100	550	150	150	55	10,000
Over (Under)	(71)	(60)	(516)	(150)	(138)	(52)	(9,003)
Exceed Threshold (Yes or No)	No	No	No	No	No	No	No

Table 7. Construction Emissions vs. SCAQMD Regional and Localized Emissions Thresholds

2018 - 2019	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$	GHG
Emission Unit	**lbs/day**						**MT/yr**
Total Emissions	4.16	40.23	34.25	0.05	12.13	3.31	996.73
Regional Construction Emissions Threshold	75	100	550	150	150	55	10,000.00
Over (Under)	(71)	(60)	(516)	(150)	(138)	(52)	(9,003)
Exceed Threshold (Yes or No)	No	No	No	No	No	No	No
Localized Construction Emissions Thresholds		87	1,611		37	13	
Over (Under)		(47)	(1,577)		(25)	(10)	
Exceed Threshold (Yes or No)		No	No		No	No	

4.2.4 Greenhouse Gas Emissions

Emissions of GHGs were calculated from CalEEMod runs. Results are presented in Table 6. Comparison with the SCAQMD's GHG emissions thresholds is shown in Table 7. As shown, the highest net increase in temporary GHG emissions from on-road mobile source emissions and on-site construction equipment relative to the threshold would be below 10,000 metric tons per year. The GHG emissions from the project construction phase are less than significant.

4.3 AIR QUALITY IMPACTS FROM OPERATION

After the construction of proposed project elements, there would not be permanent activities or operation at the sites. Therefore, no project emissions during the operational phase would be generated.

4.4 CONSTRUCTION-RELATED ODORS

Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents, and diesel powered on- and off-road equipment. SCAQMD Rule 1113 limits the amount of volatile organic compounds from architectural coatings and solvents, which lowers the emissions of odorous compounds. Due to the nature of the construction activities and the relatively small footprint of the construction site, few pieces of diesel powered equipment will be operating simultaneously. Therefore, construction activities are predicted to create a less than significant impact with respect to odors. As such, project-related odor impacts during construction would be less than significant.

4.5 CONSISTENCY WITH REGIONAL AIR QUALITY PLAN

The SCAQMD is required, pursuant to the Clean Air Act, to reduce emissions of certain pollutants for which the Basin is in non-attainment (i.e., ozone and PM_{10}). The project would be subject to the SCAQMD's AQMP. The AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by SCAG.

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties, and serves as a forum for regional issues relating to transportation, the economy, community development and the environment. SCAG serves as the federally-designated metropolitan planning organization (MPO) for the southern California region. With regard to air quality planning, SCAG has prepared the Regional Comprehensive

Plan and Guide (RCPG), which includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation control portions of the AQMP, and are utilized in the preparation of air quality forecasts and consistency analysis included in the AQMP. Both the RCPG and AQMP strategy incorporate projections from local planning documents.

The determination of AQMP consistency is primarily concerned with the long-term influence of the project on air quality in the Basin. Neither the development of the project nor its operation would result in short-term regional impacts. The project would comply with SCAQMD Rule 403 and would implement all feasible mitigation measures for control of PM_{10} and $PM_{2.5}$; the project would be consistent with the goals and policies of the AQMP for control of fugitive dust. Because the proposed project would not result in a change in dwelling units or occupants or activities, it is not in conflict with the AQMP. The project's long-term influence would also be consistent with the goals and policies of the AQMP and is, therefore, considered consistent with the SCAQMD's AQMP.

4.6 CUMULATIVE IMPACTS

With respect to the project's construction-period air quality emissions and cumulative Basin-wide conditions, the SCAQMD has developed strategies to reduce regional-impact pollutant emissions, as outlined in the AQMP pursuant to federal Clean Air Act mandates. As such, the proposed project would comply with SCAQMD Rule 403 requirements, and implement all feasible mitigation measures. In addition, the proposed project would comply with adopted AQMP emissions control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects Basin-wide.

The project's construction activities would have insignificant short-term impacts as noted in the technical analysis contained in Section 4.1. Therefore, no cumulatively significant effects from short-term construction activities are anticipated for the proposed project. Long term operation and maintenance of the project improvements to be implemented would result in minimal air quality impacts and would not contribute to cumulatively significant air quality impacts in the project vicinity. Therefore, no cumulatively significant effects from long-term operation are anticipated from implementation of the proposed project.

Within the context of CEQA, it is generally accepted that a single project does not typically generate enough GHG emissions to significantly influence global climate change. For the proposed project, a minimal amount of greenhouse gas emissions, as compared to Statewide totals, would be emitted temporarily during the project's construction activities; however, little or no long-term greenhouse gas emission increases would result from the project operational phase. No cumulatively significant GHG impacts will be experienced.

SECTION 5

MITIGATION MEASURES

The project will be required to comply with regional rules that assist in reducing air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 402 requires implementing dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Implementing these dust suppression techniques will reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules will reduce impacts on nearby sensitive receptors. Standard requirements and Best Management Practices include the following:

AIR QUALITY STANDARD REQUIREMENTS/BEST MANAGEMENT PRACTICES:

During construction. Operation of all off-road and on-road diesel vehicles/equipment shall comply with the ARB Diesel Exhaust Control Measures, and SCAQMD Rules 402 and 403, including but not limited to:

- Equipment/vehicles shall not be left idling for periods in excess of five minutes.
- Engines shall be maintained in good working order to reduce emissions.
- Onsite electrical power connections shall be made available where feasible.
- Low-sulfur diesel fuel shall be utilized.
- Electric and gasoline powered equipment shall be substituted for diesel powered equipment where feasible.
- Exposed soils and haul roads shall be watered up to three (3) times per day to reduce fugitive dust during grading/construction activities, if necessary.
- Street sweeping shall be conducted when visible soil accumulations occur along site access roadways to remove dirt dropped by construction vehicles.
- Site access driveways and adjacent streets shall be washed daily, if there are visible signs of any dirt track-out at the conclusion of any workday.
- Construction vehicle tires shall be cleaned prior to leaving the project site.
- All trucks hauling dirt away from the site shall be covered, and speeds on unpaved roads shall be reduced below 15 miles per hour.

- During high wind conditions (i.e., sustained wind speeds exceeding 20 mph), areas with disturbed soil shall be watered hourly and activities on unpaved surfaces shall cease until wind speeds no longer exceed 20 mph.
- Storage piles that are to be left in place for more than three working days shall either be sprayed with a non-toxic soil binder, covered with plastic or revegetated.

Implementing these best management practices will reduce emissions below SCAQMD thresholds.

In summary, the air quality and GHG analysis concludes that emissions during short-term construction and during long-term operation of the project do not exceed the significance thresholds established by the SCAQMD. The HRA concludes that the construction activities would result in a less-than-significant impact. The project does not pose any significant adverse impacts on local air quality or global climate change.

REFERENCES

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APPENDIXA

CALEEMOD OUTPUT FILES

Carriage Crest Park

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.80	Acre	1.80	78,408.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2018
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Carriage Crest is building a 3.6 MG underground reservoir

Construction Phase - Demo-09/20 to 05/19 (173days)
Site Prep- 05/20 to 7/15 (40days)
Construction- 07/16 to 09/13 (44days)
Grading- 09/14 to 11/20 (48days)
Paving- 11/2 to 04/17 (106days)

Mobilization & Demolition - includes mobilization, clear & grub, excavation

Off-road Equipment - 1 Dumper, 2 Paver, 1 Cement Mixer

Off-road Equipment - 1 Bore/Drill Rigs (Core Drill), 1 Concrete Saw , 8 Dumper, 1 Crushing Equip (Pavement Breaker), 1 Rubber Tired Dozers, 3 Tractors/Loaders/Backhoes

Off-road Equipment - 1 Tractors/Loaders/Backhoe, 1 Roller

Off-road Equipment - 1 Crane, 1 Compactors, 1 Tractors/Loaders/Backhoes

Off-road Equipment - 1 Air Compressors, 1 Crane, 1 Soil Compactors, 1 Pump 1 Tractors/Loaders/Backhoes, 2 Trenchers

Trips and VMT - 10 workers/ day x 2 trips/day
Demo 2500 trip x 2 per day
Precast- 1 vendor/day x 2 trips/day
Pump- 3 vendor/day x 2 trips/day

On-road Fugitive Dust - 99% paved

Demolition - Demolition 57,050 sq.ft.

Grading - 2.8 total disturbed

Vehicle Trips - No operational phase

Road Dust -

Consumer Products - No operational phase

Area Coating - No operational phase

Construction Off-road Equipment Mitigation - 1 water truck

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0

tblConstructionPhase	NumDays	200.00	44.00
tblConstructionPhase	NumDays	20.00	173.00
tblConstructionPhase	NumDays	4.00	48.00
tblConstructionPhase	NumDays	10.00	106.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	PhaseEndDate	5/18/2018	5/19/2018
tblConstructionPhase	PhaseEndDate	7/13/2018	7/15/2018
tblConsumerProducts	ROG_EF	1.98E-05	1.98E-22
tblOffRoadEquipment	LoadFactor	0.43	0.40
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	VendorPercentPave	100.00	99.00
tblOnRoadDust	VendorPercentPave	100.00	99.00
tblOnRoadDust	VendorPercentPave	100.00	99.00
tblOnRoadDust	VendorPercentPave	100.00	99.00
tblOnRoadDust	VendorPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00

tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	15.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripNumber	259.00	5,000.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	13.00	6.00
tblTripsAndVMT	WorkerTripNumber	38.00	20.00
tblTripsAndVMT	WorkerTripNumber	13.00	20.00
tblTripsAndVMT	WorkerTripNumber	33.00	20.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00
tblTripsAndVMT	WorkerTripNumber	18.00	20.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	WD_TR	1.59	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.2609	2.6167	2.0747	3.2600e-003	0.6928	0.1396	0.8323	0.0754	0.1304	0.2059	0.0000	295.8548	295.8548	0.0640	0.0000	297.1985
2018	0.5342	5.0569	4.3413	6.8700e-003	1.3397	0.2730	1.6126	0.2405	0.2555	0.4959	0.0000	608.2946	608.2946	0.1375	0.0000	611.1815
2019	0.0602	0.5946	0.6220	1.0100e-003	0.1599	0.0319	0.1918	0.0173	0.0294	0.0467	0.0000	87.8132	87.8132	0.0255	0.0000	88.3480
Total	**0.8554**	**8.2681**	**7.0380**	**0.0111**	**2.1923**	**0.4444**	**2.6367**	**0.3332**	**0.4153**	**0.7485**	**0.0000**	**991.9627**	**991.9627**	**0.2269**	**0.0000**	**996.7279**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.2609	2.6166	2.0747	3.2600e-003	0.6863	0.1396	0.8258	0.0744	0.1304	0.2049	0.0000	295.8545	295.8545	0.0640	0.0000	297.1983
2018	0.5342	5.0569	4.3413	6.8700e-003	1.2021	0.2730	1.4750	0.1733	0.2555	0.4287	0.0000	608.2940	608.2940	0.1375	0.0000	611.1809
2019	0.0602	0.5946	0.6220	1.0100e-003	0.1599	0.0319	0.1918	0.0173	0.0294	0.0467	0.0000	87.8131	87.8131	0.0255	0.0000	88.3479
Total	**0.8554**	**8.2681**	**7.0380**	**0.0111**	**2.0482**	**0.4444**	**2.4926**	**0.2651**	**0.4153**	**0.6803**	**0.0000**	**991.9617**	**991.9617**	**0.2269**	**0.0000**	**996.7270**

	ROG	NOx	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**	**6.57**	**0.00**	**5.47**	**20.46**	**0.00**	**9.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0305	0.0000	0.0305	1.8000e-003	0.0000	0.0682
Water						0.0000	0.0000		0.0000	0.0000	0.0000	13.2709	13.2709	3.1000e-004	6.0000e-005	13.2975
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0305**	**13.2709**	**13.3014**	**2.1100e-003**	**6.0000e-005**	**13.3658**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0305	0.0000	0.0305	1.8000e-003	0.0000	0.0682
Water						0.0000	0.0000		0.0000	0.0000	0.0000	13.2709	13.2709	3.1000e-004	6.0000e-005	13.2975
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0305**	**13.2709**	**13.3014**	**2.1100e-003**	**6.0000e-005**	**13.3658**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/20/2017	5/19/2018	5	173	
2	Precast Underground Concrete Storage Installation	Site Preparation	5/20/2018	7/15/2018	5	40	
3	Pump Station and Storm Drain Construction	Building Construction	7/16/2018	9/13/2018	5	44	
4	Mass Site Grading	Grading	9/14/2018	11/20/2018	5	48	
5	Aboveground Improvements	Paving	11/21/2018	4/17/2019	5	106	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Bore/Drill Rigs	1	4.00	205	0.50
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Crushing/Proc. Equipment	1	8.00	85	0.78
Demolition	Other Material Handling Equipment	8	6.00	167	0.40
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Precast Underground Concrete Storage Installation	Cranes	1	8.00	226	0.29
Pump Station and Storm Drain Construction	Forklifts	1	6.00	89	0.20
Precast Underground Concrete Storage Installation	Plate Compactors	1	8.00	8	0.40
Pump Station and Storm Drain Construction	Generator Sets	1	8.00	84	0.74
Precast Underground Concrete Storage Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Pump Station and Storm Drain Construction	Air Compressors	1	8.00	78	0.48
Pump Station and Storm Drain Construction	Cranes	1	8.00	226	0.29
Mass Site Grading	Graders	1	6.00	174	0.41
Precast Underground Concrete Storage Installation	Graders	1	8.00	174	0.41
Pump Station and Storm Drain Construction	Plate Compactors	1	8.00	8	0.43
Pump Station and Storm Drain Construction	Pumps	1	8.00	84	0.74
Pump Station and Storm Drain Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pump Station and Storm Drain Construction	Trenchers	2	8.00	80	0.50
Aboveground Improvements	Paving Equipment	1	8.00	130	0.36
Aboveground Improvements	Rollers	1	7.00	80	0.38
Mass Site Grading	Rollers	1	8.00	80	0.38
Mass Site Grading	Rubber Tired Dozers	1	6.00	255	0.40
Mass Site Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Aboveground Improvements	Cement and Mortar Mixers	1	8.00	9	0.56
Aboveground Improvements	Other Material Handling Equipment	1	6.00	167	0.40
Aboveground Improvements	Pavers	2	8.00	125	0.42
Precast Underground Concrete Storage Installation	Rubber Tired Dozers	1	7.00	255	0.40
Aboveground Improvements	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pump Station and Storm Drain Construction	Welders	3	8.00	46	0.45

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	15	20.00	0.00	5,000.00	14.70	6.90	15.00	LD_Mix	HDT_Mix	HHDT
Precast Underground Concrete Storage Instal	5	20.00	2.00	0.00	14.70	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Pump Station and Storm Drain Constructi	12	20.00	6.00	0.00	14.70	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Mass Site Grading	4	20.00	0.00	0.00	14.70	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Aboveground Improvements	7	20.00	0.00	0.00	14.70	6.90	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0119	0.0000	0.0119	1.7900e-003	0.0000	1.7900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2428	2.3927	1.8246	2.5700e-003		0.1365	0.1365		0.1276	0.1276	0.0000	234.8376	234.8376	0.0632	0.0000	236.1642
Total	**0.2428**	**2.3927**	**1.8246**	**2.5700e-003**	**0.0119**	**0.1365**	**0.1483**	**1.7900e-003**	**0.1276**	**0.1294**	**0.0000**	**234.8376**	**234.8376**	**0.0632**	**0.0000**	**236.1642**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0153	0.2197	0.2062	6.0000e-004	0.5293	3.0100e-003	0.5324	0.0572	2.7700e-003	0.0600	0.0000	53.5040	53.5040	4.1000e-004	0.0000	53.5125
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8600e-003	4.2100e-003	0.0439	1.0000e-004	0.1516	7.0000e-005	0.1517	0.0164	7.0000e-005	0.0165	0.0000	7.5132	7.5132	4.1000e-004	0.0000	7.5218
Total	**0.0181**	**0.2240**	**0.2500**	**7.0000e-004**	**0.6809**	**3.0800e-003**	**0.6840**	**0.0736**	**2.8400e-003**	**0.0765**	**0.0000**	**61.0172**	**61.0172**	**8.2000e-004**	**0.0000**	**61.0344**

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					5.3300e-003	0.0000	5.3300e-003	8.1000e-004	0.0000	8.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2428	2.3927	1.8246	2.5700e-003		0.1365	0.1365		0.1276	0.1276	0.0000	234.8373	234.8373	0.0632	0.0000	236.1639
Total	**0.2428**	**2.3927**	**1.8246**	**2.5700e-003**	**5.3300e-003**	**0.1365**	**0.1418**	**8.1000e-004**	**0.1276**	**0.1284**	**0.0000**	**234.8373**	**234.8373**	**0.0632**	**0.0000**	**236.1639**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0153	0.2197	0.2062	6.0000e-004	0.5293	3.0100e-003	0.5324	0.0572	2.7700e-003	0.0600	0.0000	53.5040	53.5040	4.1000e-004	0.0000	53.5125
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8600e-003	4.2100e-003	0.0439	1.0000e-004	0.1516	7.0000e-005	0.1517	0.0164	7.0000e-005	0.0165	0.0000	7.5132	7.5132	4.1000e-004	0.0000	7.5218
Total	**0.0181**	**0.2240**	**0.2500**	**7.0000e-004**	**0.6809**	**3.0800e-003**	**0.6840**	**0.0736**	**2.8400e-003**	**0.0765**	**0.0000**	**61.0172**	**61.0172**	**8.2000e-004**	**0.0000**	**61.0344**

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0162	0.0000	0.0162	2.4600e-003	0.0000	2.4600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2760	2.6770	2.3908	3.5200e-003		0.1486	0.1486		0.1391	0.1391	0.0000	317.4069	317.4069	0.0859	0.0000	319.2108
Total	**0.2760**	**2.6770**	**2.3908**	**3.5200e-003**	**0.0162**	**0.1486**	**0.1649**	**2.4600e-003**	**0.1391**	**0.1416**	**0.0000**	**317.4069**	**317.4069**	**0.0859**	**0.0000**	**319.2108**

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0204	0.2799	0.2768	8.1000e-004	0.5306	4.1300e-003	0.5347	0.0576	3.8000e-003	0.0614	0.0000	72.0885	72.0885	5.7000e-004	0.0000	72.1004
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5100e-003	5.2400e-003	0.0544	1.4000e-004	0.2077	1.0000e-004	0.2078	0.0225	9.0000e-005	0.0226	0.0000	9.9149	9.9149	5.2000e-004	0.0000	9.9258
Total	**0.0239**	**0.2852**	**0.3312**	**9.5000e-004**	**0.7382**	**4.2300e-003**	**0.7424**	**0.0802**	**3.8900e-003**	**0.0840**	**0.0000**	**82.0034**	**82.0034**	**1.0900e-003**	**0.0000**	**82.0262**

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					7.3000e-003	0.0000	7.3000e-003	1.1100e-003	0.0000	1.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2760	2.6770	2.3908	3.5200e-003		0.1486	0.1486		0.1391	0.1391	0.0000	317.4065	317.4065	0.0859	0.0000	319.2104
Total	**0.2760**	**2.6770**	**2.3908**	**3.5200e-003**	**7.3000e-003**	**0.1486**	**0.1559**	**1.1100e-003**	**0.1391**	**0.1403**	**0.0000**	**317.4065**	**317.4065**	**0.0859**	**0.0000**	**319.2104**

3.2 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0204	0.2799	0.2768	8.1000e-004	0.5306	4.1300e-003	0.5347	0.0576	3.8000e-003	0.0614	0.0000	72.0885	72.0885	5.7000e-004	0.0000	72.1004
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5100e-003	5.2400e-003	0.0544	1.4000e-004	0.2077	1.0000e-004	0.2078	0.0225	9.0000e-005	0.0226	0.0000	9.9149	9.9149	5.2000e-004	0.0000	9.9258
Total	**0.0239**	**0.2852**	**0.3312**	**9.5000e-004**	**0.7382**	**4.2300e-003**	**0.7424**	**0.0802**	**3.8900e-003**	**0.0840**	**0.0000**	**82.0034**	**82.0034**	**1.0900e-003**	**0.0000**	**82.0262**

3.3 Precast Underground Concrete Storage Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1160	0.0000	0.1160	0.0591	0.0000	0.0591	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0527	0.5616	0.3502	4.6000e-004		0.0285	0.0285		0.0262	0.0262	0.0000	42.1457	42.1457	0.0130	0.0000	42.4187
Total	**0.0527**	**0.5616**	**0.3502**	**4.6000e-004**	**0.1160**	**0.0285**	**0.1445**	**0.0591**	**0.0262**	**0.0853**	**0.0000**	**42.1457**	**42.1457**	**0.0130**	**0.0000**	**42.4187**

3.3 Precast Underground Concrete Storage Installation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1000e-004	3.0600e-003	4.3200e-003	1.0000e-005	3.9400e-003	5.0000e-005	3.9800e-003	4.4000e-004	4.0000e-005	4.8000e-004	0.0000	0.7707	0.7707	1.0000e-005	0.0000	0.7708
Worker	1.4000e-003	2.1000e-003	0.0218	6.0000e-005	0.0831	4.0000e-005	0.0831	9.0100e-003	4.0000e-005	9.0500e-003	0.0000	3.9660	3.9660	2.1000e-004	0.0000	3.9703
Total	**1.7100e-003**	**5.1600e-003**	**0.0261**	**7.0000e-005**	**0.0870**	**9.0000e-005**	**0.0871**	**9.4500e-003**	**8.0000e-005**	**9.5300e-003**	**0.0000**	**4.7366**	**4.7366**	**2.2000e-004**	**0.0000**	**4.7411**

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					0.0522	0.0000	0.0522	0.0266	0.0000	0.0266	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0527	0.5616	0.3502	4.6000e-004		0.0285	0.0285		0.0262	0.0262	0.0000	42.1457	42.1457	0.0130	0.0000	42.4187
Total	**0.0527**	**0.5616**	**0.3502**	**4.6000e-004**	**0.0522**	**0.0285**	**0.0807**	**0.0266**	**0.0262**	**0.0528**	**0.0000**	**42.1457**	**42.1457**	**0.0130**	**0.0000**	**42.4187**

3.3 Precast Underground Concrete Storage Installation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1000e-004	3.0600e-003	4.3200e-003	1.0000e-005	3.9400e-003	5.0000e-005	3.9800e-003	4.4000e-004	4.0000e-005	4.8000e-004	0.0000	0.7707	0.7707	1.0000e-005	0.0000	0.7708
Worker	1.4000e-003	2.1000e-003	0.0218	6.0000e-005	0.0831	4.0000e-005	0.0831	9.0100e-003	4.0000e-005	9.0500e-003	0.0000	3.9660	3.9660	2.1000e-004	0.0000	3.9703
Total	**1.7100e-003**	**5.1600e-003**	**0.0261**	**7.0000e-005**	**0.0870**	**9.0000e-005**	**0.0871**	**9.4500e-003**	**8.0000e-005**	**9.5300e-003**	**0.0000**	**4.7366**	**4.7366**	**2.2000e-004**	**0.0000**	**4.7411**

3.4 Pump Station and Storm Drain Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1031	0.7720	0.5932	9.3000e-004		0.0505	0.0505		0.0483	0.0483	0.0000	79.2536	79.2536	0.0155	0.0000	79.5795
Total	**0.1031**	**0.7720**	**0.5932**	**9.3000e-004**		**0.0505**	**0.0505**		**0.0483**	**0.0483**	**0.0000**	**79.2536**	**79.2536**	**0.0155**	**0.0000**	**79.5795**

3.4 Pump Station and Storm Drain Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0200e-003	0.0101	0.0143	3.0000e-005	0.0130	1.5000e-004	0.0132	1.4500e-003	1.4000e-004	1.5900e-003	0.0000	2.5432	2.5432	2.0000e-005	0.0000	2.5436
Worker	1.5400e-003	2.3100e-003	0.0239	6.0000e-005	0.0914	4.0000e-005	0.0914	9.9100e-003	4.0000e-005	9.9500e-003	0.0000	4.3626	4.3626	2.3000e-004	0.0000	4.3674
Total	**2.5600e-003**	**0.0124**	**0.0382**	**9.0000e-005**	**0.1044**	**1.9000e-004**	**0.1046**	**0.0114**	**1.8000e-004**	**0.0115**	**0.0000**	**6.9058**	**6.9058**	**2.5000e-004**	**0.0000**	**6.9110**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1031	0.7720	0.5932	9.3000e-004		0.0505	0.0505		0.0483	0.0483	0.0000	79.2535	79.2535	0.0155	0.0000	79.5794
Total	**0.1031**	**0.7720**	**0.5932**	**9.3000e-004**		**0.0505**	**0.0505**		**0.0483**	**0.0483**	**0.0000**	**79.2535**	**79.2535**	**0.0155**	**0.0000**	**79.5794**

3.4 Pump Station and Storm Drain Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0200e-003	0.0101	0.0143	3.0000e-005	0.0130	1.5000e-004	0.0132	1.4500e-003	1.4000e-004	1.5900e-003	0.0000	2.5432	2.5432	2.0000e-005	0.0000	2.5436
Worker	1.5400e-003	2.3100e-003	0.0239	6.0000e-005	0.0914	4.0000e-005	0.0914	9.9100e-003	4.0000e-005	9.9500e-003	0.0000	4.3626	4.3626	2.3000e-004	0.0000	4.3674
Total	**2.5600e-003**	**0.0124**	**0.0382**	**9.0000e-005**	**0.1044**	**1.9000e-004**	**0.1046**	**0.0114**	**1.8000e-004**	**0.0115**	**0.0000**	**6.9058**	**6.9058**	**2.5000e-004**	**0.0000**	**6.9110**

3.5 Mass Site Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1179	0.0000	0.1179	0.0606	0.0000	0.0606	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0469	0.4831	0.3479	4.1000e-004		0.0267	0.0267		0.0246	0.0246	0.0000	37.4096	37.4096	0.0117	0.0000	37.6541
Total	**0.0469**	**0.4831**	**0.3479**	**4.1000e-004**	**0.1179**	**0.0267**	**0.1447**	**0.0606**	**0.0246**	**0.0852**	**0.0000**	**37.4096**	**37.4096**	**0.0117**	**0.0000**	**37.6541**

3.5 Mass Site Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6800e-003	2.5100e-003	0.0261	7.0000e-005	0.0997	5.0000e-005	0.0997	0.0108	4.0000e-005	0.0109	0.0000	4.7592	4.7592	2.5000e-004	0.0000	4.7644
Total	**1.6800e-003**	**2.5100e-003**	**0.0261**	**7.0000e-005**	**0.0997**	**5.0000e-005**	**0.0997**	**0.0108**	**4.0000e-005**	**0.0109**	**0.0000**	**4.7592**	**4.7592**	**2.5000e-004**	**0.0000**	**4.7644**

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					0.0531	0.0000	0.0531	0.0273	0.0000	0.0273	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0469	0.4831	0.3479	4.1000e-004		0.0267	0.0267		0.0246	0.0246	0.0000	37.4095	37.4095	0.0117	0.0000	37.6541
Total	**0.0469**	**0.4831**	**0.3479**	**4.1000e-004**	**0.0531**	**0.0267**	**0.0798**	**0.0273**	**0.0246**	**0.0519**	**0.0000**	**37.4095**	**37.4095**	**0.0117**	**0.0000**	**37.6541**

3.5 Mass Site Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6800e-003	2.5100e-003	0.0261	7.0000e-005	0.0997	5.0000e-005	0.0997	0.0108	4.0000e-005	0.0109	0.0000	4.7592	4.7592	2.5000e-004	0.0000	4.7644
Total	**1.6800e-003**	**2.5100e-003**	**0.0261**	**7.0000e-005**	**0.0997**	**5.0000e-005**	**0.0997**	**0.0108**	**4.0000e-005**	**0.0109**	**0.0000**	**4.7592**	**4.7592**	**2.5000e-004**	**0.0000**	**4.7644**

3.6 Aboveground Improvements - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0247	0.2564	0.2220	3.4000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	30.7987	30.7987	9.4500e-003	0.0000	30.9971
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0247**	**0.2564**	**0.2220**	**3.4000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**30.7987**	**30.7987**	**9.4500e-003**	**0.0000**	**30.9971**

3.6 Aboveground Improvements - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	1.5200e-003	0.0158	4.0000e-005	0.0602	3.0000e-005	0.0603	6.5300e-003	3.0000e-005	6.5600e-003	0.0000	2.8753	2.8753	1.5000e-004	0.0000	2.8785
Total	**1.0200e-003**	**1.5200e-003**	**0.0158**	**4.0000e-005**	**0.0602**	**3.0000e-005**	**0.0603**	**6.5300e-003**	**3.0000e-005**	**6.5600e-003**	**0.0000**	**2.8753**	**2.8753**	**1.5000e-004**	**0.0000**	**2.8785**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0247	0.2564	0.2220	3.4000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	30.7986	30.7986	9.4500e-003	0.0000	30.9971
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0247**	**0.2564**	**0.2220**	**3.4000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**30.7986**	**30.7986**	**9.4500e-003**	**0.0000**	**30.9971**

3.6 Aboveground Improvements - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	1.5200e-003	0.0158	4.0000e-005	0.0602	3.0000e-005	0.0603	6.5300e-003	3.0000e-005	6.5600e-003	0.0000	2.8753	2.8753	1.5000e-004	0.0000	2.8785
Total	**1.0200e-003**	**1.5200e-003**	**0.0158**	**4.0000e-005**	**0.0602**	**3.0000e-005**	**0.0603**	**6.5300e-003**	**3.0000e-005**	**6.5600e-003**	**0.0000**	**2.8753**	**2.8753**	**1.5000e-004**	**0.0000**	**2.8785**

3.6 Aboveground Improvements - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0578	0.5909	0.5837	9.0000e-004		0.0318	0.0318		0.0293	0.0293	0.0000	80.4783	80.4783	0.0251	0.0000	81.0051
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0578**	**0.5909**	**0.5837**	**9.0000e-004**		**0.0318**	**0.0318**		**0.0293**	**0.0293**	**0.0000**	**80.4783**	**80.4783**	**0.0251**	**0.0000**	**81.0051**

3.6 Aboveground Improvements - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4800e-003	3.7000e-003	0.0384	1.1000e-004	0.1599	7.0000e-005	0.1600	0.0173	7.0000e-005	0.0174	0.0000	7.3350	7.3350	3.7000e-004	0.0000	7.3429
Total	**2.4800e-003**	**3.7000e-003**	**0.0384**	**1.1000e-004**	**0.1599**	**7.0000e-005**	**0.1600**	**0.0173**	**7.0000e-005**	**0.0174**	**0.0000**	**7.3350**	**7.3350**	**3.7000e-004**	**0.0000**	**7.3429**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0578	0.5909	0.5837	9.0000e-004		0.0318	0.0318		0.0293	0.0293	0.0000	80.4782	80.4782	0.0251	0.0000	81.0050
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0578**	**0.5909**	**0.5837**	**9.0000e-004**		**0.0318**	**0.0318**		**0.0293**	**0.0293**	**0.0000**	**80.4782**	**80.4782**	**0.0251**	**0.0000**	**81.0050**

3.6 Aboveground Improvements - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4800e-003	3.7000e-003	0.0384	1.1000e-004	0.1599	7.0000e-005	0.1600	0.0173	7.0000e-005	0.0174	0.0000	7.3350	7.3350	3.7000e-004	0.0000	7.3429
Total	**2.4800e-003**	**3.7000e-003**	**0.0384**	**1.1000e-004**	**0.1599**	**7.0000e-005**	**0.1600**	**0.0173**	**7.0000e-005**	**0.0174**	**0.0000**	**7.3350**	**7.3350**	**3.7000e-004**	**0.0000**	**7.3429**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.531767	0.058060	0.178534	0.124864	0.038964	0.006284	0.016861	0.033134	0.002486	0.003151	0.003685	0.000540	0.001671

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005
Unmitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005

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	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**5.0000e-005**

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	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**5.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	13.2709	3.1000e-004	6.0000e-005	13.2975
Unmitigated	13.2709	3.1000e-004	6.0000e-005	13.2975

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 2.14467	13.2709	3.1000e-004	6.0000e-005	13.2975
Total		**13.2709**	**3.1000e-004**	**6.0000e-005**	**13.2975**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 2.14467	13.2709	3.1000e-004	6.0000e-005	13.2975
Total		**13.2709**	**3.1000e-004**	**6.0000e-005**	**13.2975**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0305	1.8000e-003	0.0000	0.0682
Unmitigated	0.0305	1.8000e-003	0.0000	0.0682

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.15	0.0305	1.8000e-003	0.0000	0.0682
Total		**0.0305**	**1.8000e-003**	**0.0000**	**0.0682**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.15	0.0305	1.8000e-003	0.0000	0.0682
Total		**0.0305**	**1.8000e-003**	**0.0000**	**0.0682**

9.0 Operational Offroad

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

10.0 Vegetation