Greenhouse Gas Assessment for the Lower Curtis Park Expansion, City of Mission Viejo

Report #19-045
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TABLE OF CONTENTS

LIST OF TABLES

LIST OF EXHIBITS

1.0 EXISTING ENVIRONMENT

1.1 Project Description

The City of Mission Viejo proposes to import approximately 760,000 cubic yards of dirt from freeway improvements that are currently underway by the California Department of Transportation (Caltrans) to Interstate 5 (I-5). The I-5 freeway improvement project extends from El Toro Road on the north to the San Joaquin Hills Toll Road (SR-73) on the south. Excess dirt from the freeway improvement project would be hauled by trucks to the 42.9-gross acre Lower Curtis Park site that is located approximately three miles east of I-5 (**Error! Reference source not found.**). The imported dirt would be graded into a pad that could be used for recreational use in the future (Exhibit 2).

The existing 42.9-gross acre vacant site would require approximately 177,600 cubic yards of cut and remedial grading to prepare a pad site and provide access roads to the site to allow the approximately 760,000 cubic yards of dirt to be imported to the site. The 177,600 cubic yards of remedial cut would remain on the site and be incorporated into the grading for the future building pad. The 760,000 cubic yards of dirt would be hauled to the site over a period of three (3) years starting in the first quarter of 2020 and ending in 2022.

1.2 Greenhouse Gases and Climate Change

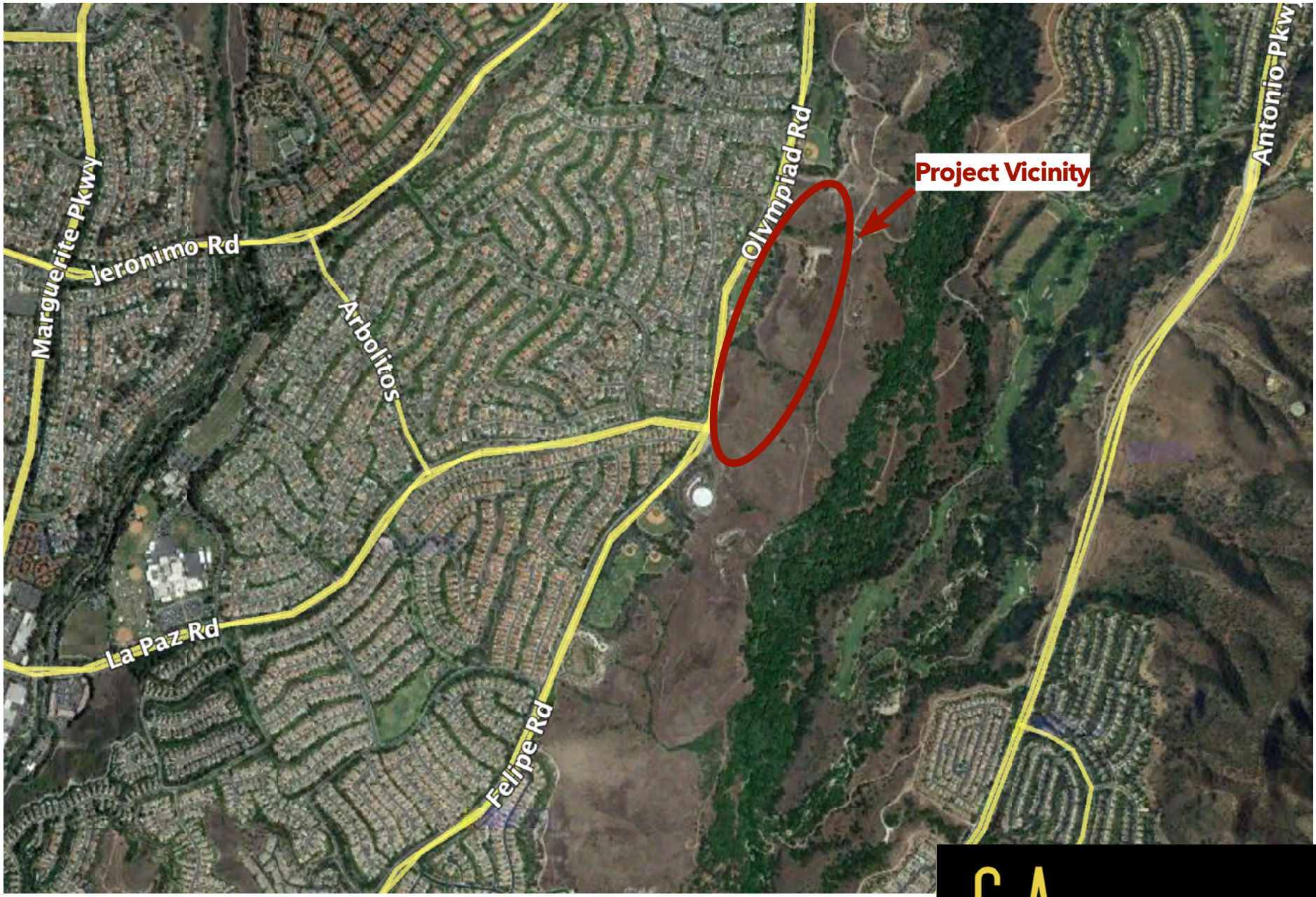
1.2.1 Impact of Climate Change

The Earth's climate has always been in the process of changing, due to many different natural factors. These factors have included changes in the Earth's orbit, volcanic eruptions, and varying amounts of energy released from the sun. Differences such as these have caused fluctuations in the temperature of the climate, ranging from ice ages to long periods of warmth. However, since the late 18th century, humans have had an increasing impact of the rate of climate change, beginning with the Industrial Revolution.

The International Panel on Climate Change's (IPCC) Fifth Assessment Report (AR5) affirms that the planet is warming and that human beings are "extremely likely" (indicating a 95 percent certainty) to be the primary cause. Since global warming and climate change emerged publicly as an environmental issue in the 1980s, the scientific evidence has grown even stronger that the climate is changing, that the impacts are widespread, and are occurring now. This evidence includes rising temperatures, shifting snow and rainfall patterns, and increased incidents of extreme weather events.

This process of heating is often referred to as 'global warming,' although the National Academy of Sciences prefers the terms 'climate change' as an umbrella phrase which includes global warming as well as other environmental changes, in addition to the increasing temperatures. Some of these effects include changes to rainfall, wind, and current weather patterns, as well as snow and ice cover, and sea level.

Exhibit 1 - Vicinity Map



G&A

Exhibit 2 - Grading Plan

G&A

Climate models generally predict that the average temperature at the Earth's surface could increase from 2.0°F to 4.7°F (1.1 °C to 2.6°C) above 1990 levels by the end of this century (for RCP4.5 per AR5). The change in global temperature has many significant consequences. There will be more frequent hot spells and fewer cold spells. Heat waves will occur with a higher frequency and longer duration. Significant changes in precipitation patterns with some areas getting much more rain with other areas getting substantially less precipitation. The oceans will become more acidic. The Arctic Ocean will become nearly ice-free during the summer season. The volume of glaciers is projected to decrease anywhere from 15 to 85%. Sea level rise is projected to be 0.8 to 2.7 feet (0.26 to 0.82 m) by the end of the century. A large fraction of species faces increased extinction risk. Many plant species, most small mammals, freshwater mollusks, and coral reefs, to name a few, cannot adapt quick enough to survive the climate change. Food security in many parts of the world will be threaten. Fisheries, wheat, rice, and maize production will be reduced in many areas. Renewable surface waters (e.g., lakes and streams) and groundwater resources will be diminished in many critical areas. In rural areas hit by climate change, the reduction in water and food resources will lead to poorer health. In urban areas climate change is projected to increase risks for people, assets, economies and ecosystems, including risks from heat stress, storms and extreme precipitation, inland and coastal flooding, landslides, air pollution, drought, water scarcity, sea level rise and storm surges.

Global GHG emissions are measured in million metric tons of carbon dioxide equivalent ("MMTCO2EQ") units. A metric ton is approximately 2,205 lbs. Some GHGs emitted into the atmosphere are naturally occurring, while others are caused solely by human activities. The principal GHGs that enter the atmosphere because of human activities are:

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), agriculture, irrigation, and deforestation, as well as the manufacturing of cement.

- **Methane (CH_4)** is emitted through the production and transportation of coal, natural gas, and oil, as well as from livestock. Other agricultural activities influence methane emissions as well as the decay of waste in landfills.

- **Nitrous oxide (N_2O)** is released most often during the burning of fuel at high temperatures. This greenhouse gas is caused mostly by motor vehicles, which also include non-road vehicles, such as those used for agriculture.

- **Fluorinated Gases** are emitted primarily from industrial sources, which often include hydrofluorocarbons (HRC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). Though they are often released in smaller

quantities, they are referred to as High Global Warming Potential Gases because of their ability to cause global warming. Fluorinated gases are often used as substitutes for ozone depleting substances.

These gases have different potentials for trapping heat in the atmosphere, called global warming potential ("GWP"). For example, one pound of methane has 21 times more heat capturing potential than one pound of carbon dioxide. When dealing with an array of emissions, the gases are converted to carbon dioxide equivalents (CO2EQ) for comparison purposes. The GWPs for common greenhouse gases are shown in Table 1.

Table 1 Global Warming Potentials (GWP)

Gas	Global Warming Potential
Carbon Dioxide	1
Methane	25
Nitrous Oxide	198

Source: IPCC, "Fourth Assessment Report, Climate Change 2007, AR4".

1.2.2 Adaptation Impact

Adaptation refers to efforts necessary to avoid the worst effects of climate change. California is one of the leading governments in the world in reducing greenhouse gas emissions, it realizes that the adaptation will still be necessary to avoid the effects of climate change. The main climate impacts facing California have been identified by the California Natural Resources Agency ("Safeguarding California Plan: 2018 Update, California's Climate Adaptation Strategy," January 2018) as follows;

- Acceleration of warming across the state
- Accelerating sea level rise
- More severe storms and extreme weather events
- More intense and frequent heat waves
- More intense and frequent drought
- Ocean acidification, hypoxia, and warming
- Shrinking snowpack and less overall precipitation
- More severe and frequent wildfires

The Natural Resources report presents a roadmap showing how California's state government is taking action to respond to climate change. Over 1,000 ongoing actions and next steps within 76 policy recommendations were developed to response to climate change.

1.2.3 Emission Inventories

In 2014, the top CO_2 emitters were China, the United States, the European Union, India and the Russian Federation. The estimate for CO_2 contribution by country is presented in Table 2.

Table 2 Top Ten CO2 Producing Nations in 2014

Country	Percent of Global
1. China	30%
2. United States	15%
3. European Union	9%
4. India	7%
5. Russia Federation	5%
6. Japan	4%
Remaining Countries	*30%*
Total Global	**100%**

Source: USEPA webpage 04/20/17
https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data

1.2.4 Sources of Greenhouse Gases in California

The California Air Resources Board categorizes GHG generation by source into seven broad categories. The categories are:

- **Transportation** includes the combustion of gasoline and diesel in automobiles and trucks. Transportation also includes jet fuel consumption and bunker fuel for ships.
- **Industrial** GHG emissions are produced from many industrial activities. Major contributors include oil and natural gas extraction; crude oil refining; food processing; stone, clay, glass, and cement manufacturing; chemical manufacturing; and cement production. Wastewater treatment plants are also significant contributors to this category.
- **Electric generation** includes both emissions from power plants in California as well as power plants located outside of the state that supply electricity to the state.
- **Commercial and residential** uses generate GHG emissions primarily from the combustion of natural gas for space and water heating.

- **Agriculture** GHG emissions are composed mostly of nitrous oxide from agricultural soil management, methane from enteric fermentation, and methane and nitrous oxide from manure management.
- **High (GWP)** emissions consist of ozone depleting substance substitutes and electricity grid SF6 losses.
- **Recycling and waste** include primarily landfills.

The relative amount of GHGs released from each of these categories in California in 2014 is shown in Exhibit 3 (source: "California Greenhouse Gas Inventory for 2000-2014," California Air Resources Board, June 17, 2016).

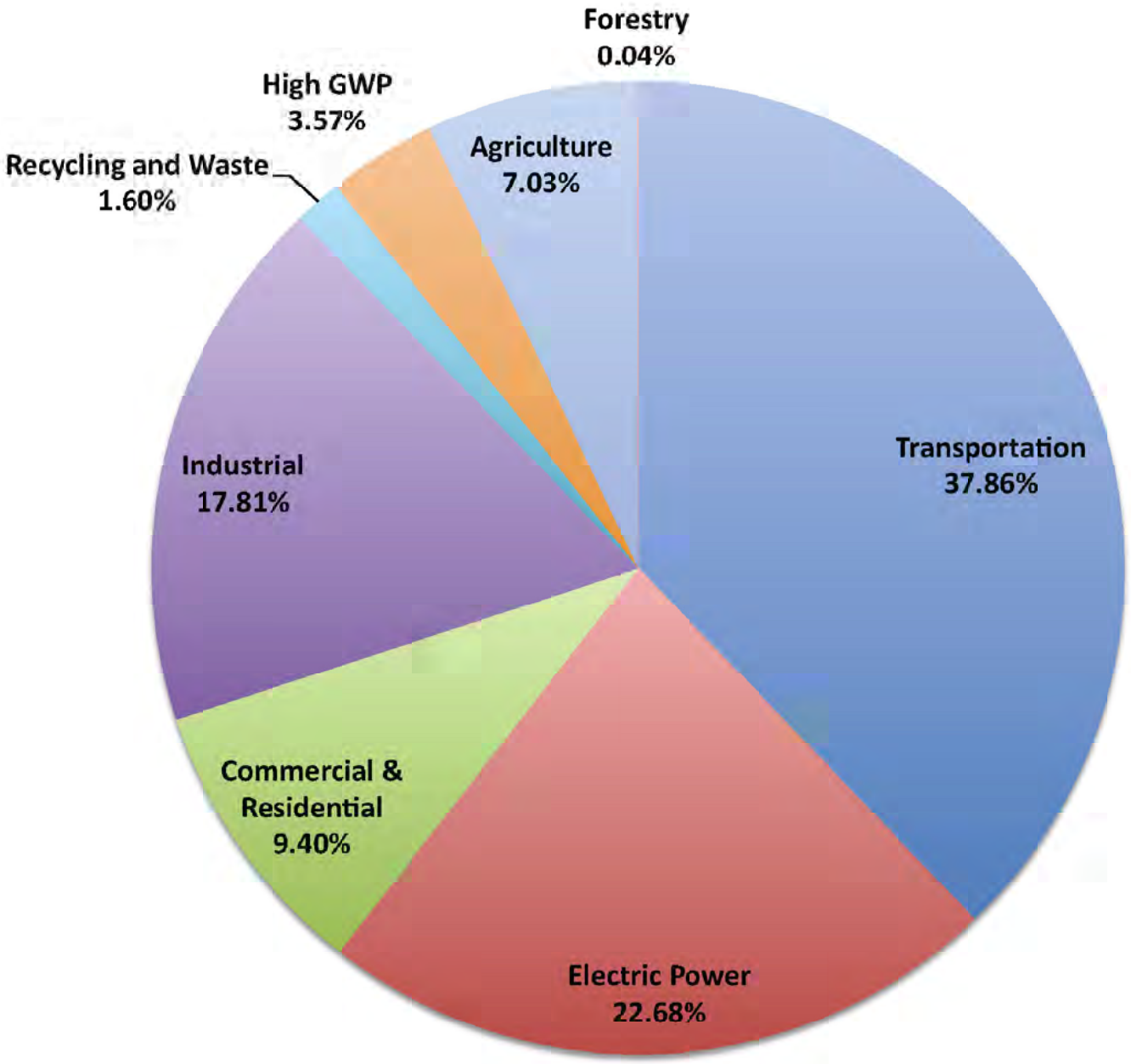
Examination of Exhibit 3 indicates that most of California's GHGs are emitted by transportation sources, such as automobiles, trucks, and airplanes. Combustion of fossil fuels in the transportation sector contributed approximately 36% of the California GHG. This category was followed by the industrial sector (21%), and electric power sector (including both in-state and out-of-state sources) (20%). Residential and commercial activity accounted for approximately 9% of the emissions.

1.3 Regulatory Framework

1.3.5 Federal Plans, Policies, Regulations, and Laws

The federal government began studying the phenomenon of global warming as early as 1978 with the National Climate Protection Act, 92 Stat. 601, which required the President to establish a program to "assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications." The 1987 Global Climate Protection Act, Title XI of Pub. L. 100-204, directed the U.S. EPA to propose a "coordinated national policy on global climate change," and ordered the Secretary of State to work "through the channels of multilateral diplomacy" to coordinate efforts to address global warming. Many of the programs and regulations to reduce GHG emissions have been curtailed by the Trump administration.

Exhibit 3 - California GHG Emissions by Sector



1.3.1 California State Plans, Policies, Regulations, and Laws

In the past several years, California has distinguished itself as a national leader in efforts to address global climate change by enacting several major pieces of legislation, engaging in multi-national and multi-state collaborative efforts, and preparing a wealth of information on the impacts associated with global climate change.

The cornerstone of California's actions is Assembly Bill 32, the California Global Warming Solutions Act of 2006 (Health and Safety Code § 38500 et seq.). In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Global Warming Solutions Act of 2006. The law created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California.

Under the first scoping plan, California set in place a range of effective programs to slash greenhouse gases from cars, trucks, fuels, industry and electrical generation, and the State is well on its way to achieving the original goal of AB 32 – to reach 1990 levels of greenhouse gases by 2020.

The Second Scoping Plan draws on the successes and the lessons learned from the first chapter of California's efforts to fight climate change under AB 32. It proposes continuing the major programs. The key programs that the Proposed Plan builds on include the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and much cleaner cars, trucks and freight movement, powering our State off of cleaner renewable energy, and strategies to reduce methane emissions from agricultural and other wastes by using it to meet our energy needs. It also comprehensively addresses for the first time the greenhouse gas emissions from natural and working lands of California – including the agriculture and forestry sectors.

Executive Order B-30-15. Governor Edmund G. Brown Jr. on April 29, 2015 issued an executive order to establish a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030. This is the most aggressive benchmark enacted by any government in North America to reduce dangerous carbon emissions over the next decade and a half. "With this order, California sets a very high bar for itself and other states and nations, but it's one that must be reached - for this generation and generations to come," said Governor Brown.

California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent under 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius - the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels.

California Air Resource Board Cap-and-Trade Regulation. The California Air Resource Board has implemented a cap-and-trade type program, pursuant to the AB-32 directed Scoping Plan, applicable to specific industries that emit more than 25,000 MTCO2e. The AB 32 Scoping Plan identifies a Cap-and-Trade program as one of the strategies California will employ to reduce the greenhouse gas (GHG) emissions that cause climate change. Under Cap-and-Trade, an overall limit on GHG emissions from capped sectors will be established by the Cap-and-Trade program and facilities subject to the cap will be able to trade permits (allowances) to emit GHGs. The program started on January 1, 2012, with an enforceable compliance obligation beginning with the 2013 GHG emissions for GHG emissions from stationary sources. The petroleum and natural gas systems sector is covered starting in 2013 for stationary and related combustion, process vents and flare emissions if the total emissions from these sources exceed 25,000 MTCO2e per year. Suppliers of natural gas and transportation fuels are covered beginning in 2015 for combustion emissions from the total volume of natural gas delivered to non-covered entity or for transportation fuels.

Cap-and-Trade is designed to reduce the emissions from a substantial percentage of GHG sources (about 80% of GHG emissions will come under the program) within California through a market trading system. The system would reduce GHG emissions by reducing the available GHG "allowances" over time up until the year 2020.

1.3.2 SCAQMD Plans, Policies, Regulations and Laws

The SCAQMD has promoted a number of programs to combat climate change over the past 20 years. For instance, SCAQMD has promoted energy conservation, low-carbon fuel technologies (natural gas vehicles; electric-hybrids, hydraulic-hybrids, and battery-electric vehicles), renewable energy, vehicle miles traveled (VMT) reduction programs, and market incentive programs.

1.3.3 City of Mission Viejo Plans, Policies, Regulations, and Laws

The City has adopted the "Mission Viejo Sustainability Action Plan (SAP)," (March 2013). The SAP, also known as a Climate Action Plan or GHG Reduction Plan) is a tool that cities throughout California use to help reduce dependency on fossil fuels and nonrenewable energy and to decrease GHG emissions. In Mission Viejo, most GHG emissions come from gasoline burned in motor vehicles. Energy used in buildings, energy used for water supply and treatment, and solid waste related emissions also contribute to the City's GHG emissions. The SAP offers strategies to provide local residents and businesses tools to help them move toward a lower-carbon future.

The SAP identifies only voluntary GHG reduction measures that would apply to different types of future projects. To use GHG reduction measures to enable CEQA streamlining for GHG environmental assessment, the City must incorporate them as mitigation measures on future discretionary projects found to be consistent with the General Plan. If the City elects to facilitate this process, the City may develop a checklist of potential mitigation measures based on

voluntary SAP measures. At this time the City has not developed a checklist and projects need to show that the GHG emissions generated will be less than significant.

1.4 Existing Emissions

Currently there are no activities on the site, and therefore, there are no GHG emissions are generated on-site.

2.0 POTENTIAL CLIMATE CHANGE IMPACTS

2.1 Significance Thresholds

The Significance Threshold that will be used for this project is based on SCAQMD's suggested tiered approach, which is consistent with CARB's recommendations. The project is not specifically exempted in SB97, and there are no GHG reduction plans that are consistent with the AB32 GHG reduction goals that with a certified final CEQA document that are applicable to the proposed project. Therefore, the project is not compliant with Tiers 1 or 2. The significance of the project will be determined based on compliance with the Tier 3 and 4 requirements. The project will be considered to have a significant impact if total annual GHG emissions exceed 3,000 MT CO_2EQ. If the 3,000 threshold is exceeded then the annual emissions per service population (the number of residents for residential projects and persons employed for commercial projects) should not exceed 4.6 MT CO_2EQ/yr/person, or a significant impact will be determined. Note that the methodology recommends that total construction emissions be amortized over a 30-year period or the project's expected lifetime if it is less than 30 years.

1.1 Construction Emissions

Temporary impacts will result from construction activities including haul trucks. The primary source of GHG emissions generated by construction activities is from the use of diesel-powered construction equipment. Typical emission rates for construction equipment were obtained from CalEEMod (California Emissions Estimator Model). CalEEMod is a computer program that can be used to estimate emissions from construction and operation. Since the future use of the site is undecided, operational emissions are not included in this analysis. Future environmental assessments will be needed when operational plans become available for the site.

Using CalEEMod, the emissions from construction for the proposed project were calculated and are presented in Table 3. These emissions represent the total level of emissions based on the construction schedule. According to the SCAQMD's CEQA Handbook (Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #5, August 27, 2008), construction emissions are amortized over the life of the project, defined by SCAQMD as 30 years. Thus, the project's annualized construction emissions will be compared to the applicable GHG significance threshold. Worksheets showing the specific data used to calculate the construction emissions are presented in the appendix.

Table 3 Construction GHG Emissions (Metric Tons Per Year)

	CO2	CH4	N2O	CO2EQ
Total Construction Emissions (Metric Tons)	1663.5	0.3	0.0	1671.0
Averaged Over 30 Years (Metric Tons Per Year)	55.5	0.0	0.0	55.7

MTCO2EQ = metric tons equivalent carbon dioxide (CO2).

Error! Reference source not found. shows that the GHG emissions for the project will be about 55.7 MTCO2EQ per year. This is substantially lower than the SCAQMD Tier 3 screening threshold of 3,000 MTCO2EQ per year. The project emissions are below the SCAQMD threshold of 3,000 MTCO2EQ per year, and therefore, no significant climate change impacts are anticipated.

3.0 MITIGATION MEASURES

Since climate change impacts will be less than significant, mitigation measures will not be needed.

4.0 REFERENCES

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U.S. Environmental Protection Agency, "AP 42, Fifth Edition Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources," http://www.epa.gov/ttn/chief/ap42/.

U.S. Environmental Protection Agency, "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2005," April 15, 2007.

APPENDIX

Curtis Park Expansion - South Coast AQMD Air District, Annual

Curtis Park Expansion

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	42.90	Acre	42.90	1,868,724.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Modified to match data from City

Off-road Equipment - No painting

Off-road Equipment - No demolition necessary

Off-road Equipment - Based on data provided by City.

Off-road Equipment - Data provided by City.

Off-road Equipment - Paving will not occur

Off-road Equipment - Data provided by City.

Trips and VMT - Estimate of haul length

Grading - Based on site acreage.

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
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tblConstructionPhase	PhaseEndDate	4/21/2020	1/15/2020
tblConstructionPhase	PhaseEndDate	8/4/2020	1/5/2021
tblConstructionPhase	PhaseEndDate	2/2/2021	11/17/2020
tblConstructionPhase	PhaseEndDate	4/20/2021	2/2/2021
tblConstructionPhase	PhaseEndDate	11/17/2020	1/19/2021
tblConstructionPhase	PhaseStartDate	3/11/2020	1/2/2020
tblConstructionPhase	PhaseStartDate	4/22/2020	1/16/2020
tblConstructionPhase	PhaseStartDate	8/5/2020	1/6/2021
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tblGrading	MaterialImported	0.00	760,000.00
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Off-Highway Tractors
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tblOffRoadEquipment	OffRoadEquipmentType	Graders	Off-Highway Tractors
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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					
2020	0.5573	10.4737	3.2642	0.0172	1.1186	0.1856	1.3042	0.5268	0.1711	0.6979	0.0000	1,621.3108	1,621.3108	0.2867	0.0000	1,628.4780

2021	0.0226	0.2763	0.1325	4.7000e-004	0.2466	8.6100e-003	0.2552	0.0622	7.9300e-003	0.0702	0.0000	42.2360	42.2360	0.0105	0.0000	42.4975
Maximum	**0.5573**	**10.4737**	**3.2642**	**0.0172**	**1.1186**	**0.1856**	**1.3042**	**0.5268**	**0.1711**	**0.6979**	**0.0000**	**1,621.3108**	**1,621.3108**	**0.2867**	**0.0000**	**1,628.4780**

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					
2020	0.5573	8.4605	3.2642	0.0172	0.5485	0.1856	0.7341	0.2361	0.1711	0.4072	0.0000	1,621.3102	1,621.3102	0.2867	0.0000	1,628.4774
2021	0.0226	0.2038	0.1325	4.7000e-004	0.1687	8.6100e-003	0.1773	0.0421	7.9300e-003	0.0501	0.0000	42.2360	42.2360	0.0105	0.0000	42.4975
Maximum	**0.5573**	**8.4605**	**3.2642**	**0.0172**	**0.5485**	**0.1856**	**0.7341**	**0.2361**	**0.1711**	**0.4072**	**0.0000**	**1,621.3102**	**1,621.3102**	**0.2867**	**0.0000**	**1,628.4774**

	ROG	NOx	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**	**19.40**	**0.00**	**0.00**	**47.46**	**0.00**	**41.55**	**52.76**	**0.00**	**40.46**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	2.5014	2.0055
2	**4-1-2020**	**6-30-2020**	2.8041	2.3028
3	**7-1-2020**	**9-30-2020**	2.8350	2.3281
4	**10-1-2020**	**12-31-2020**	2.8078	2.3010
5	**1-1-2021**	**3-31-2021**	0.3838	0.2887
		Highest	2.8350	2.3281

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	0.0176	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0600e-003	1.0600e-003	0.0000	0.0000	1.1300e-003
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	0.0822	0.4591	1.0486	3.9500e-003	0.3280	3.1400e-003	0.3311	0.0879	2.9300e-003	0.0908	0.0000	365.1431	365.1431	0.0178	0.0000	365.5878
Waste						0.0000	0.0000		0.0000	0.0000	0.7490	0.0000	0.7490	0.0443	0.0000	1.8557
Water						0.0000	0.0000		0.0000	0.0000	0.0000	180.9396	180.9396	7.4700e-003	1.5500e-003	181.5869
Total	**0.0999**	**0.4591**	**1.0492**	**3.9500e-003**	**0.3280**	**3.1400e-003**	**0.3311**	**0.0879**	**2.9300e-003**	**0.0908**	**0.7490**	**546.0837**	**546.8328**	**0.0695**	**1.5500e-003**	**549.0316**

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	0.0176	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0600e-003	1.0600e-003	0.0000	0.0000	1.1300e-003
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	0.0822	0.4591	1.0486	3.9500e-003	0.3280	3.1400e-003	0.3311	0.0879	2.9300e-003	0.0908	0.0000	365.1431	365.1431	0.0178	0.0000	365.5878
Waste						0.0000	0.0000		0.0000	0.0000	0.7490	0.0000	0.7490	0.0443	0.0000	1.8557
Water						0.0000	0.0000		0.0000	0.0000	0.0000	180.9396	180.9396	7.4700e-003	1.5500e-003	181.5869
Total	**0.0999**	**0.4591**	**1.0492**	**3.9500e-003**	**0.3280**	**3.1400e-003**	**0.3311**	**0.0879**	**2.9300e-003**	**0.0908**	**0.7490**	**546.0837**	**546.8328**	**0.0695**	**1.5500e-003**	**549.0316**

	ROG	NOx	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	1/1/2020	12/31/2019	5	0	
2	Site Preparation	Site Preparation	1/2/2020	1/15/2020	5	10	
3	Grading	Grading	1/16/2020	1/5/2021	5	254	
4	Paving	Paving	11/18/2020	11/17/2020	5	0	
5	Final Grading	Grading	1/6/2021	1/19/2021	5	10	
6	Architectural Coating	Architectural Coating	2/3/2021	2/2/2021	5	0	

Acres of Grading (Site Preparation Phase): 42.9

Acres of Grading (Grading Phase): 42.9

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Off-Highway Trucks	2	8.00	402	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Off-Highway Tractors	1	8.00	124	0.44
Final Grading	Scrapers	1	8.00	367	0.48
Final Grading	Rubber Tired Dozers	1	8.00	247	0.40
Final Grading	Off-Highway Trucks	2	8.00	402	0.38
Final Grading	Scrapers	0	8.00	367	0.48
Final Grading	Scrapers	0	8.00	367	0.48
Final Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Grading	Graders	1	8.00	187	0.41
Grading	Off-Highway Tractors	1	8.00	124	0.44
Grading	Off-Highway Trucks	2	8.00	402	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Final Grading	10	25.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	95,000.00	14.70	6.90	3.80	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	157.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

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

Fugitive Dust					0.1131	0.0000	0.1131	0.0521	0.0000	0.0521	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0157	0.1654	0.0833	2.3000e-004		6.7600e-003	6.7600e-003		6.2200e-003	6.2200e-003	0.0000	20.3317	20.3317	6.5800e-003	0.0000	20.4961
Total	**0.0157**	**0.1654**	**0.0833**	**2.3000e-004**	**0.1131**	**6.7600e-003**	**0.1198**	**0.0521**	**6.2200e-003**	**0.0583**	**0.0000**	**20.3317**	**20.3317**	**6.5800e-003**	**0.0000**	**20.4961**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	3.1000e-004	3.4100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8889	0.8889	3.0000e-005	0.0000	0.8895
Total	**4.0000e-004**	**3.1000e-004**	**3.4100e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**1.0000e-003**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8889**	**0.8889**	**3.0000e-005**	**0.0000**	**0.8895**

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					0.0441	0.0000	0.0441	0.0203	0.0000	0.0203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0157	0.0883	0.0833	2.3000e-004		6.7600e-003	6.7600e-003		6.2200e-003	6.2200e-003	0.0000	20.3317	20.3317	6.5800e-003	0.0000	20.4961
Total	**0.0157**	**0.0883**	**0.0833**	**2.3000e-004**	**0.0441**	**6.7600e-003**	**0.0509**	**0.0203**	**6.2200e-003**	**0.0265**	**0.0000**	**20.3317**	**20.3317**	**6.5800e-003**	**0.0000**	**20.4961**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	3.1000e-004	3.4100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8889	0.8889	3.0000e-005	0.0000	0.8895
Total	**4.0000e-004**	**3.1000e-004**	**3.4100e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**1.0000e-003**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8889**	**0.8889**	**3.0000e-005**	**0.0000**	**0.8895**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.8215	0.0000	0.8215	0.4244	0.0000	0.4244	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3928	4.1354	2.0848	5.8000e-003		0.1690	0.1690		0.1555	0.1555	0.0000	509.2198	509.2198	0.1647	0.0000	513.3371
Total	**0.3928**	**4.1354**	**2.0848**	**5.8000e-003**	**0.8215**	**0.1690**	**0.9905**	**0.4244**	**0.1555**	**0.5799**	**0.0000**	**509.2198**	**509.2198**	**0.1647**	**0.0000**	**513.3371**

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	0.1373	6.1640	0.9977	0.0109	0.1555	9.6500e-003	0.1652	0.0427	9.2300e-003	0.0520	0.0000	1,066.0800	1,066.0800	0.1147	0.0000	1,068.9470
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0112	8.5900e-003	0.0951	2.7000e-004	0.0275	2.1000e-004	0.0278	7.3100e-003	2.0000e-004	7.5100e-003	0.0000	24.7904	24.7904	7.1000e-004	0.0000	24.8082
Total	**0.1485**	**6.1726**	**1.0927**	**0.0112**	**0.1831**	**9.8600e-003**	**0.1929**	**0.0500**	**9.4300e-003**	**0.0595**	**0.0000**	**1,090.8704**	**1,090.8704**	**0.1154**	**0.0000**	**1,093.7552**

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					0.3204	0.0000	0.3204	0.1655	0.0000	0.1655	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3928	2.1993	2.0848	5.8000e-003		0.1690	0.1690		0.1555	0.1555	0.0000	509.2192	509.2192	0.1647	0.0000	513.3365
Total	**0.3928**	**2.1993**	**2.0848**	**5.8000e-003**	**0.3204**	**0.1690**	**0.4893**	**0.1655**	**0.1555**	**0.3210**	**0.0000**	**509.2192**	**509.2192**	**0.1647**	**0.0000**	**513.3365**

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	0.1373	6.1640	0.9977	0.0109	0.1555	9.6500e-003	0.1652	0.0427	9.2300e-003	0.0520	0.0000	1,066.0800	1,066.0800	0.1147	0.0000	1,068.9470
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0112	8.5900e-003	0.0951	2.7000e-004	0.0275	2.1000e-004	0.0278	7.3100e-003	2.0000e-004	7.5100e-003	0.0000	24.7904	24.7904	7.1000e-004	0.0000	24.8082
Total	**0.1485**	**6.1726**	**1.0927**	**0.0112**	**0.1831**	**9.8600e-003**	**0.1929**	**0.0500**	**9.4300e-003**	**0.0595**	**0.0000**	**1,090.8704**	**1,090.8704**	**0.1154**	**0.0000**	**1,093.7552**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0748	0.0000	0.0748	0.0139	0.0000	0.0139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4200e-003	0.0448	0.0241	7.0000e-005		1.8400e-003	1.8400e-003		1.6900e-003	1.6900e-003	0.0000	6.0846	6.0846	1.9700e-003	0.0000	6.1338
Total	**4.4200e-003**	**0.0448**	**0.0241**	**7.0000e-005**	**0.0748**	**1.8400e-003**	**0.0766**	**0.0139**	**1.6900e-003**	**0.0156**	**0.0000**	**6.0846**	**6.0846**	**1.9700e-003**	**0.0000**	**6.1338**

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	1.5500e-003	0.0702	0.0116	1.3000e-004	0.1173	1.0000e-004	0.1174	0.0288	1.0000e-004	0.0289	0.0000	12.6132	12.6132	1.3200e-003	0.0000	12.6462
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	1.3000e-004	9.0000e-005	1.0500e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2867	0.2867	1.0000e-005	0.0000	0.2869
Total	**1.6800e-003**	**0.0703**	**0.0126**	**1.3000e-004**	**0.1176**	**1.0000e-004**	**0.1177**	**0.0289**	**1.0000e-004**	**0.0290**	**0.0000**	**12.8999**	**12.8999**	**1.3300e-003**	**0.0000**	**12.9331**

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					0.0292	0.0000	0.0292	5.4300e-003	0.0000	5.4300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4200e-003	0.0252	0.0241	7.0000e-005		1.8400e-003	1.8400e-003		1.6900e-003	1.6900e-003	0.0000	6.0846	6.0846	1.9700e-003	0.0000	6.1338
Total	**4.4200e-003**	**0.0252**	**0.0241**	**7.0000e-005**	**0.0292**	**1.8400e-003**	**0.0310**	**5.4300e-003**	**1.6900e-003**	**7.1200e-003**	**0.0000**	**6.0846**	**6.0846**	**1.9700e-003**	**0.0000**	**6.1338**

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	1.5500e-003	0.0702	0.0116	1.3000e-004	0.1173	1.0000e-004	0.1174	0.0288	1.0000e-004	0.0289	0.0000	12.6132	12.6132	1.3200e-003	0.0000	12.6462
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	1.3000e-004	9.0000e-005	1.0500e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2867	0.2867	1.0000e-005	0.0000	0.2869
Total	**1.6800e-003**	**0.0703**	**0.0126**	**1.3000e-004**	**0.1176**	**1.0000e-004**	**0.1177**	**0.0289**	**1.0000e-004**	**0.0290**	**0.0000**	**12.8999**	**12.8999**	**1.3300e-003**	**0.0000**	**12.9331**

3.5 Paving - 2020

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**

3.6 Final Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0529	0.0000	0.0529	0.0190	0.0000	0.0190	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1609	0.0914	2.5000e-004		6.6600e-003	6.6600e-003		6.1300e-003	6.1300e-003	0.0000	22.0569	22.0569	7.1300e-003	0.0000	22.2352
Total	**0.0159**	**0.1609**	**0.0914**	**2.5000e-004**	**0.0529**	**6.6600e-003**	**0.0595**	**0.0190**	**6.1300e-003**	**0.0251**	**0.0000**	**22.0569**	**22.0569**	**7.1300e-003**	**0.0000**	**22.2352**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.9000e-004	4.3600e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1946	1.1946	3.0000e-005	0.0000	1.1954

Total	**5.2000e-004**	**3.9000e-004**	**4.3600e-003**	**1.0000e-005**	**1.3700e-003**	**1.0000e-005**	**1.3800e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.1946**	**1.1946**	**3.0000e-005**	**0.0000**	**1.1954**

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					0.0206	0.0000	0.0206	7.4100e-003	0.0000	7.4100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1080	0.0914	2.5000e-004		6.6600e-003	6.6600e-003		6.1300e-003	6.1300e-003	0.0000	22.0569	22.0569	7.1300e-003	0.0000	22.2352
Total	**0.0159**	**0.1080**	**0.0914**	**2.5000e-004**	**0.0206**	**6.6600e-003**	**0.0273**	**7.4100e-003**	**6.1300e-003**	**0.0135**	**0.0000**	**22.0569**	**22.0569**	**7.1300e-003**	**0.0000**	**22.2352**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.9000e-004	4.3600e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1946	1.1946	3.0000e-005	0.0000	1.1954
Total	**5.2000e-004**	**3.9000e-004**	**4.3600e-003**	**1.0000e-005**	**1.3700e-003**	**1.0000e-005**	**1.3800e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.1946**	**1.1946**	**3.0000e-005**	**0.0000**	**1.1954**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

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	0.0822	0.4591	1.0486	3.9500e-003	0.3280	3.1400e-003	0.3311	0.0879	2.9300e-003	0.0908	0.0000	365.1431	365.1431	0.0178	0.0000	365.5878
Unmitigated	0.0822	0.4591	1.0486	3.9500e-003	0.3280	3.1400e-003	0.3311	0.0879	2.9300e-003	0.0908	0.0000	365.1431	365.1431	0.0178	0.0000	365.5878

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	81.08	975.98	718.15	863,067	863,067
Total	81.08	975.98	718.15	863,067	863,067

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

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**

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**

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	0.0176	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0600e-003	1.0600e-003	0.0000	0.0000	1.1300e-003
Unmitigated	0.0176	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0600e-003	1.0600e-003	0.0000	0.0000	1.1300e-003

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	0.0176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0600e-003	1.0600e-003	0.0000	0.0000	1.1300e-003
Total	**0.0176**	**1.0000e-005**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0600e-003**	**1.0600e-003**	**0.0000**	**0.0000**	**1.1300e-003**

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	0.0176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0600e-003	1.0600e-003	0.0000	0.0000	1.1300e-003
Total	**0.0176**	**1.0000e-005**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0600e-003**	**1.0600e-003**	**0.0000**	**0.0000**	**1.1300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	180.9396	7.4700e-003	1.5500e-003	181.5869
Unmitigated	180.9396	7.4700e-003	1.5500e-003	181.5869

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 51.1145	180.9396	7.4700e-003	1.5500e-003	181.5869
Total		**180.9396**	**7.4700e-003**	**1.5500e-003**	**181.5869**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

City Park	0 / 51.1145	180.9396	7.4700e-003	1.5500e-003	181.5869
Total		**180.9396**	**7.4700e-003**	**1.5500e-003**	**181.5869**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.7490	0.0443	0.0000	1.8557
Unmitigated	0.7490	0.0443	0.0000	1.8557

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	3.69	0.7490	0.0443	0.0000	1.8557
Total		**0.7490**	**0.0443**	**0.0000**	**1.8557**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	3.69	0.7490	0.0443	0.0000	1.8557
Total		**0.7490**	**0.0443**	**0.0000**	**1.8557**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation