

APPENDIX A

Air Quality

MEMORANDUM

To: Erica Roess, Senior Planner, City of Aliso Viejo
From: Nicholas Lorenzen, Dudek
Subject: Aliso Viejo Ranch Project
Focused Air Quality Analysis
Date: May 7, 2018
cc: Colin Ramsey, Dudek
Attachment A CalEEMod Output

Dudek is pleased to submit this focused air quality emissions assessment to assist in environmental requirements for the Aliso Viejo Ranch Project (project) located within the City of Aliso Viejo (City), California. This memorandum estimates criteria air pollutant emissions from construction and operation of the project and evaluates the project's compliance with general conformity requirements under the federal Clean Air Act. The contents and organization of this memorandum are as follows: brief project description; general methodology and assumptions; air quality assessment, including a general conformity analysis and a summary of conclusions.

1 PROJECT DESCRIPTION

The project site is located in the eastern portion of the City of Aliso Viejo, which is in south Orange County, about four miles northeast of the Pacific Ocean. Regionally, the City is bounded by the city of Laguna Hills to the east, Laguna Niguel to the south, Laguna Beach to the West, Lake Forest to the north-east, and the Laguna Coast Wilderness Park to the west/northwest. Locally, the project site is bounded by Aliso Viejo Middle School to the southwest, Aliso Viejo Community Park to the south, and single-home housing to the north. Additionally, the project site is approximately 0.1 miles north of State Route (SR-) 73 and 2 miles south of Interstate (I-) 5.

The proposed project would designate the entire 7.7 acres as a public park with passive open space. Proposed within the public park, and primarily on the western portion of the property would be a community center, which would include a 2,640-sq. ft. renovated, existing barn; an 8,139-sq. ft. proposed barn; a 1,313-sq. ft. existing bunkhouse; a multi-use gathering area with market lights; and a multi-use gathering area with trees and wood benches. Accessory structures include a 1,500-square foot, 12-foot high attached proposed wood shade structure; and existing 334-sq. ft. and 250-sq. ft. wood sheds.

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There is a total of 100 proposed parking stalls, which meets the minimum requirements per the City's Municipal Code requirements. There are also an additional 92 parking spaces available on both sides of Park Avenue, adjacent to the project.

2 GENERAL METHODOLOGY AND ASSUMPTIONS

2.1 Construction Assumptions

Emissions from the construction of the project were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2.¹. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the City staff, and CalEEMod default values when project specifics were not known. For purposes of estimating project-generated emissions, and based on the expected timeline for project, it is assumed that construction of the project would commence in January 2019² and would last approximately 16 months, ending in mid-May 2020. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Demolition: January 2019 – January 2019 (1 week)
- Site Preparation: January 2019 – January 2019 (2 weeks)
- Grading: February 2019 – March 2019 (1 Month)
- Trenching: March 2019 – April 2019 (1 Month)
- Building Construction: March 2019 – May 2020 (13 Months)
- Architectural Coating: February 2020 – April 2020 (2 months)
- Paving: March 2020 – April 2020 (1 month)

For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. The construction equipment mix and vehicle trips used for estimating the project-generated construction emissions are shown in Table 1.

¹ CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria air pollutant emissions from a variety of land use projects. More information about CalEEMod is available here: <http://www.caleemod.com/>.

² The analysis assumes a construction start date of January 2019, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

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Table 1 Construction Scenario Assumptions

Construction Phase	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment	Quantity	Usage Hours	Start Date	Finish Date
Demolition	16	0	10	Excavators	3	8	01/2019	01/2019
				Concrete/Industrial Saws	1	8		
				Rubber Tired Dozers	2	8		
Site Preparation	18	0	0	Rubber Tired Dozers	4	8	01/2019	01/2019
				Tractors/Loaders/Backhoes	3	8		
Grading	18	0	16	Graders	2	8	02/2019	03/2019
				Excavators	1	8		
				Tractors/Loaders/Backhoes	3	8		
Trenching	12	0	0	Tractor/Loaders/Backhoes	1	8	3/2019	04/2019
				Excavators	1	8		
Building Construction	60	4	0	Crane	1	7	3/2019	05/2020
				Forklift	3	8		
				Generators Sets	1	8		
				Welders	1	8		
				Tractors/loaders/backhoes	3	7		
Paving	20	6	0	Pavers	1	6	03/2020	04/2020
				Rollers	1	6		
				Paving Equipment	1	8		
				Pumps	3	8		
Architectural Coating	12	0	0	Air Compressor	1	8	02/2020	04/2020

Notes: See Attachment A for additional assumption details.

2.2 Operational Assumptions

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment. VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers using during building maintenance. The VOC evaporative emissions from application of nonresidential surface coatings were calculated based on the VOC emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate. The VOC emission factor is based on the VOC content of the surface coatings. For the community center and associated structures, it is assumed that the surface area for painting equals two times

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the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products. Consumer product VOC emissions are estimated in CalEEMod based on the floor area of nonresidential buildings and on the default factor of pounds of VOC per building square foot per day. For parking lot land uses, CalEEMod estimates VOC emissions associated with use of parking surface degreasers based on a square footage of parking surface area and pounds of VOC per square foot per day.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage (non-hearth). Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site. CalEEMod default values for energy consumption for each land use were applied for the project analysis.

Mobile Sources

Mobile sources for the project would primarily be motor vehicles (automobiles and light-duty trucks) traveling to and from the project site. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. Based on the Trip Generation Memorandum prepared for the project by Dudek, the proposed project is anticipated to generate 845 daily trips. CalEEMod default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were conservatively used for the model inputs to estimate annual emissions from proposed vehicular sources. Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for 2020 were used to estimate emissions associated with buildout of the project.

3 AIR QUALITY ASSESSMENT

3.1 Air Quality Overview

The project site is located within the South Coast Air Basin (SCAB), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County, and is within the jurisdictional boundaries of the South Coast Air Quality Management District (SCAQMD).

The SCAQMD administers the Air Quality Management Plan (AQMP) for the SCAB, which is a comprehensive document outlining an air pollution control program for attaining all California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). The most recent adopted AQMP is the 2016 AQMP, which was adopted by the SCAQMD Governing Board in March 2017. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gases (GHGs) and toxic risk, as well as efficiencies in energy use, transportation, and goods movement.

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants that are evaluated include volatile organic compounds (VOCs), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (PM₁₀), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size (PM_{2.5}). VOCs and NO_x are important because they are precursors to ozone (O₃).

3.2 General Conformity Background

Under Section 176(c)(1) of the federal Clean Air Act, federal agencies that “engage in, support in any way or provide financial assistance for, license or permit, or approve any activity”³ must demonstrate that such actions do not interfere with state and local plans to bring an area into attainment with the National Ambient Air Quality Standards (NAAQS). The program by which a federal agency determines that its action would not obstruct or conflict with air quality attainment plans is called “general conformity.” The implementing regulations for general conformity are found in Title 40, Code of Federal Regulations, Part 51, Subpart W. In addition, the SCAQMD

³ Title 40, Code of Federal Regulation, Part 51, Section 51.850.

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has adopted the federal General Conformity regulations as Regulation XIX, Federal Conformity Regulations, Rule 1901 (General Conformity).

Under the general conformity regulations, both the direct and indirect emissions associated with a federal action must be evaluated. Subpart W defines direct emissions as:

[T]hose emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and occur at the same time and place as the action.

Indirect emissions are defined as:

[T]hose emissions of a criteria pollutant or its precursors that:

(1) Are caused by the Federal action, but may occur later in time and/or may be farther removed in distance from the action itself but are still reasonably foreseeable; and

(2) The Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency.

3.3 SCAB Attainment Status and General Conformity Thresholds

A conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a federal nonattainment or maintenance area would equal or exceed specified annual emission rates, referred to as “de minimis” thresholds or would be “regionally significant.”

A project’s direct and indirect emissions are regionally significant if they exceed 10% or more of a nonattainment or maintenance area’s emissions inventory for that pollutant. For O₃ precursors and particulate matter, the de minimis thresholds depend on the severity of the nonattainment classification; for other pollutants, the threshold is set at 100 tons per year. As indicated in Table 2, the SCAB is designated as nonattainment extreme for O₃, and nonattainment serious for PM_{2.5}. The SCAB is in attainment with all remaining NAAQS. The relevant de minimis thresholds for the SCAB are shown in Table 2.

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Table 2
General Conformity De Minimis Thresholds

Pollutant	Attainment Status	Annual Emissions (ton/yr)
VOC	Nonattainment/Extreme (O ₃)	10
NO _x	Nonattainment/Extreme (O ₃)	10
CO	Attainment (Maintenance)	100
PM ₁₀	Attainment (Maintenance)	100
PM _{2.5}	Nonattainment (Serious)	70

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide.

3.4 Construction Emissions

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment and soil disturbance) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). CalEEMod was used to calculate the annual criteria air pollutant emissions based on the construction scenario described in Section 2.1, Construction Assumptions. Table 3 presents the estimated annual construction emissions generated during construction of the project in 2019 and 2020. Details of the emission calculations are provided in Attachment A.

Table 3
Estimated Annual Construction Criteria Air Pollutant Emissions

Year	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	Tons per Year					
2019	0.359	3.14	2.56	0.00	0.33	0.23
2020	0.22	1.33	1.33	0.00	0.11	0.08
<i>De Minimis Threshold</i>	10	10	100	100	100	70
Exceeds threshold?	No	No	No	N/A	No	No

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter; N/A = not applicable.

See Attachment A for complete results.

As shown in Table 3, the annual construction emissions of VOC, NO_x, CO, SO_x, PM₁₀ and PM_{2.5} would not exceed the de minimis thresholds.

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3.5 Operational Emissions

Operation of the project would generate VOC, NO_x, CO, SO_x, PM₁₀, and PM_{2.5} emissions from area and mobile sources, including vehicle trips from employee and park visitor commutes. CalEEMod was used to calculate the annual operational criteria air pollutant emissions based on the assumptions described in Section 2.2, Operational Assumptions. Table 4 presents the maximum Annual source emissions associated with operation (year 2020) of the project. Details of the emissions calculations are provided in Attachment A

Table 4
Estimated Maximum Annual Operational Criteria Air Pollutant Emissions

Year	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	Pounds per Day					
Area	0.06	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.21	1.16	1.21	0.01	0.74	0.21
Total Annual Emissions	0.27	1.16	2.74	0.01	0.74	0.21
<i>De Minimis Threshold</i>	10	10	100	100	100	70
Exceeds threshold?	No	No	No	No	No	No

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter
See Attachment A for complete results.

As shown Table 4, the annual emissions of VOC, NO_x, and CO, SO_x, PM₁₀ and PM_{2.5} would not exceed the de minimis thresholds.

In conclusion the project would not exceed the de minimus thresholds during construction or operation. Therefore, further analysis is not required for VOC, NO_x, CO, SO_x, PM₁₀ or PM_{2.5}. As such, the project would be in compliance with the general conformity requirements and would not conflict with local air quality attainment or maintenance plans to achieve or maintain federal ambient air quality standards.

Aliso Viejo Ranch Project - South Coast AQMD Air District, Annual

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South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	13.59	1000sqft	0.31	13,592.00	0
City Park	7.70	Acre	7.70	335,412.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

- Project Characteristics - Operational start date 2020.
- Land Use - 13,590 SF of community building space.
- Construction Phase - Construction schedule provided by the project applicant.
- Off-road Equipment - Default CalEEMod equipment.
- Off-road Equipment - Default CalEEMod equipment.
- Off-road Equipment - Default CalEEMod equipment.
- Off-road Equipment - Default CalEEMod equipment.
- Off-road Equipment - Default CalEEMod equipment.

Grading - 5.7 Acres to be graded.

Demolition - 2,000 SF of onsite structures to be demolished.

Trips and VMT - Worker/vendor/haul trucks trips based on information provided by the project applicant.

Vehicle Trips - Daily Trips are based on the Trip Generation Memorandum prepared by Dudek.

Construction Off-road Equipment Mitigation - Watering 3x daily and vehicle speed on unpaved roads limited to 15 mph in compliance with SCAQMD Rule 403

Water Mitigation - Reclaimed water and water efficient irrigation systems

Energy Mitigation - None

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	230.00	300.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	PhaseEndDate	4/6/2020	4/1/2020
tblConstructionPhase	PhaseEndDate	2/10/2020	5/12/2020
tblConstructionPhase	PhaseEndDate	2/11/2019	1/21/2019
tblConstructionPhase	PhaseEndDate	3/25/2019	3/19/2019
tblConstructionPhase	PhaseEndDate	3/9/2020	4/15/2020
tblConstructionPhase	PhaseEndDate	2/25/2019	2/4/2019
tblConstructionPhase	PhaseStartDate	3/10/2020	2/15/2020
tblConstructionPhase	PhaseStartDate	3/26/2019	3/20/2019
tblConstructionPhase	PhaseStartDate	2/26/2019	2/6/2019
tblConstructionPhase	PhaseStartDate	2/11/2020	3/2/2020
tblConstructionPhase	PhaseStartDate	2/12/2019	1/22/2019
tblGrading	AcresOfGrading	30.00	5.70
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Pumps

tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripNumber	57.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	145.00	60.00
tblTripsAndVMT	WorkerTripNumber	29.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	12.00
tblVehicleTrips	WD_TR	1.89	50.00
tblVehicleTrips	WD_TR	27.92	33.82

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					
2019	0.3587	3.1419	2.5583	4.5600e-003	0.2610	0.1773	0.4382	0.1201	0.1658	0.2859	0.0000	404.3038	404.3038	0.0878	0.0000	406.4998
2020	0.2199	1.3334	1.3304	2.3600e-003	0.0384	0.0746	0.1130	0.0102	0.0704	0.0806	0.0000	206.5572	206.5572	0.0404	0.0000	207.5679
Maximum	0.3587	3.1419	2.5583	4.5600e-003	0.2610	0.1773	0.4382	0.1201	0.1658	0.2859	0.0000	404.3038	404.3038	0.0878	0.0000	406.4998

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					
2019	0.3587	3.1419	2.5583	4.5600e-003	0.1483	0.1773	0.3256	0.0592	0.1658	0.2250	0.0000	404.3034	404.3034	0.0878	0.0000	406.4994
2020	0.2199	1.3334	1.3304	2.3600e-003	0.0384	0.0746	0.1130	0.0102	0.0704	0.0806	0.0000	206.5570	206.5570	0.0404	0.0000	207.5677
Maximum	0.3587	3.1419	2.5583	4.5600e-003	0.1483	0.1773	0.3256	0.0592	0.1658	0.2250	0.0000	404.3034	404.3034	0.0878	0.0000	406.4994

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	37.64	0.00	20.44	46.70	0.00	16.60	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	1-15-2019	4-14-2019	1.2042	1.2042
2	4-15-2019	7-14-2019	0.8114	0.8114
3	7-15-2019	10-14-2019	0.8023	0.8023
4	10-15-2019	1-14-2020	0.7925	0.7925
5	1-15-2020	4-14-2020	1.2029	1.2029
6	4-15-2020	7-14-2020	0.2305	0.2305
		Highest	1.2042	1.2042

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	0.0586	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004
Energy	6.7000e-004	6.0900e-003	5.1200e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	67.2160	67.2160	2.6300e-003	6.4000e-004	67.4721

Mobile	0.2100	1.1578	2.7382	9.2900e-003	0.7335	9.4700e-003	0.7429	0.1966	8.8900e-003	0.2055	0.0000	856.6930	856.6930	0.0446	0.0000	857.8078
Waste						0.0000	0.0000		0.0000	0.0000	15.8577	0.0000	15.8577	0.9372	0.0000	39.2867
Water						0.0000	0.0000		0.0000	0.0000	0.8565	49.5346	50.3911	0.0900	2.5000e-003	53.3867
Total	0.2693	1.1639	2.7436	9.3300e-003	0.7335	9.9300e-003	0.7434	0.1966	9.3500e-003	0.2059	16.7142	973.4441	990.1582	1.0744	3.1400e-003	1,017.9538

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	0.0586	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004
Energy	6.7000e-004	6.0900e-003	5.1200e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	61.1573	61.1573	2.3800e-003	5.9000e-004	61.3918
Mobile	0.2100	1.1578	2.7382	9.2900e-003	0.7335	9.4700e-003	0.7429	0.1966	8.8900e-003	0.2055	0.0000	856.6930	856.6930	0.0446	0.0000	857.8078
Waste						0.0000	0.0000		0.0000	0.0000	15.8577	0.0000	15.8577	0.9372	0.0000	39.2867
Water						0.0000	0.0000		0.0000	0.0000	0.8565	49.5346	50.3911	0.0900	2.5000e-003	53.3867
Total	0.2693	1.1639	2.7436	9.3300e-003	0.7335	9.9300e-003	0.7434	0.1966	9.3500e-003	0.2059	16.7142	967.3854	984.0996	1.0742	3.0900e-003	1,011.8735

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	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	0.62	0.61	0.02	1.59	0.60

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	1/15/2019	1/21/2019	5	5	

2	Site Preparation	Site Preparation	1/22/2019	2/4/2019	5	10
3	Grading	Grading	2/6/2019	3/19/2019	5	30
4	Building Construction	Building Construction	3/20/2019	5/12/2020	5	300
5	Paving	Paving	3/2/2020	4/15/2020	5	33
6	Architectural Coating	Architectural Coating	2/15/2020	4/1/2020	5	33
7	Trenching	Trenching	3/20/2019	4/23/2019	5	25

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5.7

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 20,388; Non-Residential Outdoor: 6,796; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	2	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Off-Road	8.7800e-003	0.0895	0.0552	1.0000e-004		4.4900e-003	4.4900e-003		4.1700e-003	4.1700e-003	0.0000	8.6566	8.6566	2.4100e-003	0.0000	8.7168
Total	8.7800e-003	0.0895	0.0552	1.0000e-004	9.8000e-004	4.4900e-003	5.4700e-003	1.5000e-004	4.1700e-003	4.3200e-003	0.0000	8.6566	8.6566	2.4100e-003	0.0000	8.7168

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	4.0000e-005	1.3500e-003	2.6000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.3431	0.3431	2.0000e-005	0.0000	0.3437
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	1.8000e-004	1.4000e-004	1.5600e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3822	0.3822	1.0000e-005	0.0000	0.3825
Total	2.2000e-004	1.4900e-003	1.8200e-003	0.0000	4.9000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.7253	0.7253	3.0000e-005	0.0000	0.7262

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					3.8000e-004	0.0000	3.8000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7800e-003	0.0895	0.0552	1.0000e-004		4.4900e-003	4.4900e-003		4.1700e-003	4.1700e-003	0.0000	8.6566	8.6566	2.4100e-003	0.0000	8.7168
Total	8.7800e-003	0.0895	0.0552	1.0000e-004	3.8000e-004	4.4900e-003	4.8700e-003	6.0000e-005	4.1700e-003	4.2300e-003	0.0000	8.6566	8.6566	2.4100e-003	0.0000	8.7168

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	4.0000e-005	1.3500e-003	2.6000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.3431	0.3431	2.0000e-005	0.0000	0.3437
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	1.8000e-004	1.4000e-004	1.5600e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3822	0.3822	1.0000e-005	0.0000	0.3825
Total	2.2000e-004	1.4900e-003	1.8200e-003	0.0000	4.9000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.7253	0.7253	3.0000e-005	0.0000	0.7262

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	0.0217	0.2279	0.1103	1.9000e-004	0.0903	0.0120	0.1023	0.0497	0.0110	0.0607	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195

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	4.3000e-004	3.5000e-004	3.7500e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9174	0.9174	3.0000e-005	0.0000	0.9181
Total	4.3000e-004	3.5000e-004	3.7500e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9174	0.9174	3.0000e-005	0.0000	0.9181

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					0.0352	0.0000	0.0352	0.0194	0.0000	0.0194	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	0.0217	0.2279	0.1103	1.9000e-004	0.0352	0.0120	0.0472	0.0194	0.0110	0.0304	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195

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	4.3000e-004	3.5000e-004	3.7500e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9174	0.9174	3.0000e-005	0.0000	0.9181
Total	4.3000e-004	3.5000e-004	3.7500e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9174	0.9174	3.0000e-005	0.0000	0.9181

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0934	0.0000	0.0934	0.0500	0.0000	0.0500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0460	0.5239	0.2720	5.4000e-004		0.0241	0.0241		0.0222	0.0222	0.0000	48.9122	48.9122	0.0155	0.0000	49.2991
Total	0.0460	0.5239	0.2720	5.4000e-004	0.0934	0.0241	0.1175	0.0500	0.0222	0.0722	0.0000	48.9122	48.9122	0.0155	0.0000	49.2991

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	7.0000e-005	2.4000e-003	4.6000e-004	1.0000e-005	1.4000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.6099	0.6099	4.0000e-005	0.0000	0.6110
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-003	1.0400e-003	0.0113	3.0000e-005	2.9600e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.7521	2.7521	9.0000e-005	0.0000	2.7542
Total	1.3700e-003	3.4400e-003	0.0117	4.0000e-005	3.1000e-003	3.0000e-005	3.1400e-003	8.3000e-004	3.0000e-005	8.6000e-004	0.0000	3.3620	3.3620	1.3000e-004	0.0000	3.3652

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					0.0364	0.0000	0.0364	0.0195	0.0000	0.0195	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0460	0.5239	0.2720	5.4000e-004		0.0241	0.0241		0.0222	0.0222	0.0000	48.9122	48.9122	0.0155	0.0000	49.2991
Total	0.0460	0.5239	0.2720	5.4000e-004	0.0364	0.0241	0.0605	0.0195	0.0222	0.0417	0.0000	48.9122	48.9122	0.0155	0.0000	49.2991

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	7.0000e-005	2.4000e-003	4.6000e-004	1.0000e-005	1.4000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.6099	0.6099	4.0000e-005	0.0000	0.6110
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-003	1.0400e-003	0.0113	3.0000e-005	2.9600e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.7521	2.7521	9.0000e-005	0.0000	2.7542
Total	1.3700e-003	3.4400e-003	0.0117	4.0000e-005	3.1000e-003	3.0000e-005	3.1400e-003	8.3000e-004	3.0000e-005	8.6000e-004	0.0000	3.3620	3.3620	1.3000e-004	0.0000	3.3652

3.5 Building Construction - 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	0.2420	2.1606	1.7593	2.7600e-003		0.1322	0.1322		0.1243	0.1243	0.0000	240.9818	240.9818	0.0587	0.0000	242.4494

Total	0.2420	2.1606	1.7593	2.7600e-003		0.1322	0.1322		0.1243	0.1243	0.0000	240.9818	240.9818	0.0587	0.0000	242.4494
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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	1.6100e-003	0.0478	0.0120	1.1000e-004	2.5800e-003	3.1000e-004	2.9000e-003	7.5000e-004	3.0000e-004	1.0400e-003	0.0000	10.1504	10.1504	7.0000e-004	0.0000	10.1680
Worker	0.0297	0.0236	0.2564	6.9000e-004	0.0675	5.4000e-004	0.0680	0.0179	4.9000e-004	0.0184	0.0000	62.6865	62.6865	1.9600e-003	0.0000	62.7354
Total	0.0313	0.0714	0.2684	8.0000e-004	0.0701	8.5000e-004	0.0709	0.0187	7.9000e-004	0.0195	0.0000	72.8369	72.8369	2.6600e-003	0.0000	72.9034

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	0.2420	2.1606	1.7593	2.7600e-003		0.1322	0.1322		0.1243	0.1243	0.0000	240.9815	240.9815	0.0587	0.0000	242.4492
Total	0.2420	2.1606	1.7593	2.7600e-003		0.1322	0.1322		0.1243	0.1243	0.0000	240.9815	240.9815	0.0587	0.0000	242.4492

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	1.6100e-003	0.0478	0.0120	1.1000e-004	2.5800e-003	3.1000e-004	2.9000e-003	7.5000e-004	3.0000e-004	1.0400e-003	0.0000	10.1504	10.1504	7.0000e-004	0.0000	10.1680
Worker	0.0297	0.0236	0.2564	6.9000e-004	0.0675	5.4000e-004	0.0680	0.0179	4.9000e-004	0.0184	0.0000	62.6865	62.6865	1.9600e-003	0.0000	62.7354
Total	0.0313	0.0714	0.2684	8.0000e-004	0.0701	8.5000e-004	0.0709	0.0187	7.9000e-004	0.0195	0.0000	72.8369	72.8369	2.6600e-003	0.0000	72.9034

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1007	0.9113	0.8003	1.2800e-003		0.0531	0.0531		0.0499	0.0499	0.0000	110.0147	110.0147	0.0268	0.0000	110.6857
Total	0.1007	0.9113	0.8003	1.2800e-003		0.0531	0.0531		0.0499	0.0499	0.0000	110.0147	110.0147	0.0268	0.0000	110.6857

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	6.4000e-004	0.0203	5.0200e-003	5.0000e-005	1.2000e-003	1.0000e-004	1.3000e-003	3.5000e-004	1.0000e-004	4.4000e-004	0.0000	4.6731	4.6731	3.1000e-004	0.0000	4.6808
Worker	0.0127	9.7500e-003	0.1079	3.1000e-004	0.0313	2.4000e-004	0.0315	8.3000e-003	2.2000e-004	8.5300e-003	0.0000	28.1485	28.1485	8.1000e-004	0.0000	28.1687
Total	0.0134	0.0300	0.1130	3.6000e-004	0.0325	3.4000e-004	0.0328	8.6500e-003	3.2000e-004	8.9700e-003	0.0000	32.8216	32.8216	1.1200e-003	0.0000	32.8494

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	0.1007	0.9113	0.8003	1.2800e-003		0.0531	0.0531		0.0499	0.0499	0.0000	110.0146	110.0146	0.0268	0.0000	110.6856
Total	0.1007	0.9113	0.8003	1.2800e-003		0.0531	0.0531		0.0499	0.0499	0.0000	110.0146	110.0146	0.0268	0.0000	110.6856

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	6.4000e-004	0.0203	5.0200e-003	5.0000e-005	1.2000e-003	1.0000e-004	1.3000e-003	3.5000e-004	1.0000e-004	4.4000e-004	0.0000	4.6731	4.6731	3.1000e-004	0.0000	4.6808
Worker	0.0127	9.7500e-003	0.1079	3.1000e-004	0.0313	2.4000e-004	0.0315	8.3000e-003	2.2000e-004	8.5300e-003	0.0000	28.1485	28.1485	8.1000e-004	0.0000	28.1687
Total	0.0134	0.0300	0.1130	3.6000e-004	0.0325	3.4000e-004	0.0328	8.6500e-003	3.2000e-004	8.9700e-003	0.0000	32.8216	32.8216	1.1200e-003	0.0000	32.8494

3.6 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	0.0364	0.3485	0.3659	5.9000e-004		0.0193	0.0193		0.0183	0.0183	0.0000	51.6984	51.6984	0.0118	0.0000	51.9935
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0364	0.3485	0.3659	5.9000e-004		0.0193	0.0193		0.0183	0.0183	0.0000	51.6984	51.6984	0.0118	0.0000	51.9935

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	3.3000e-004	0.0106	2.6200e-003	3.0000e-005	6.2000e-004	5.0000e-005	6.8000e-004	1.8000e-004	5.0000e-005	2.3000e-004	0.0000	2.4349	2.4349	1.6000e-004	0.0000	2.4389
Worker	1.4700e-003	1.1300e-003	0.0125	4.0000e-005	3.6200e-003	3.0000e-005	3.6500e-003	9.6000e-004	3.0000e-005	9.9000e-004	0.0000	3.2593	3.2593	9.0000e-005	0.0000	3.2616
Total	1.8000e-003	0.0117	0.0151	7.0000e-005	4.2400e-003	8.0000e-005	4.3300e-003	1.1400e-003	8.0000e-005	1.2200e-003	0.0000	5.6942	5.6942	2.5000e-004	0.0000	5.7006

Mitigated Construction On-Site

Off-Road	4.0000e-003	0.0278	0.0302	5.0000e-005		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003	0.0000	4.2129	4.2129	3.3000e-004	0.0000	4.2210
Total	0.0670	0.0278	0.0302	5.0000e-005		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003	0.0000	4.2129	4.2129	3.3000e-004	0.0000	4.2210

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	1.1000e-004	3.5200e-003	8.7000e-004	1.0000e-005	2.1000e-004	2.0000e-005	2.3000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	0.8116	0.8116	5.0000e-005	0.0000	0.8130
Worker	5.9000e-004	4.5000e-004	5.0000e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3037	1.3037	4.0000e-005	0.0000	1.3047
Total	7.0000e-004	3.9700e-003	5.8700e-003	2.0000e-005	1.6600e-003	3.0000e-005	1.6900e-003	4.4000e-004	3.0000e-005	4.7000e-004	0.0000	2.1154	2.1154	9.0000e-005	0.0000	2.1176

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	0.0630					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0278	0.0302	5.0000e-005		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003	0.0000	4.2129	4.2129	3.3000e-004	0.0000	4.2210
Total	0.0670	0.0278	0.0302	5.0000e-005		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003	0.0000	4.2129	4.2129	3.3000e-004	0.0000	4.2210

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	1.1000e-004	3.5200e-003	8.7000e-004	1.0000e-005	2.1000e-004	2.0000e-005	2.3000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	0.8116	0.8116	5.0000e-005	0.0000	0.8130
Worker	5.9000e-004	4.5000e-004	5.0000e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3037	1.3037	4.0000e-005	0.0000	1.3047
Total	7.0000e-004	3.9700e-003	5.8700e-003	2.0000e-005	1.6600e-003	3.0000e-005	1.6900e-003	4.4000e-004	3.0000e-005	4.7000e-004	0.0000	2.1154	2.1154	9.0000e-005	0.0000	2.1176

3.8 Trenching - 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	6.1700e-003	0.0628	0.0697	1.0000e-004		3.5700e-003	3.5700e-003		3.2800e-003	3.2800e-003	0.0000	9.2984	9.2984	2.9400e-003	0.0000	9.3719
Total	6.1700e-003	0.0628	0.0697	1.0000e-004		3.5700e-003	3.5700e-003		3.2800e-003	3.2800e-003	0.0000	9.2984	9.2984	2.9400e-003	0.0000	9.3719

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	5.8000e-004	6.2500e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5289	1.5289	5.0000e-005	0.0000	1.5301
Total	7.2000e-004	5.8000e-004	6.2500e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5289	1.5289	5.0000e-005	0.0000	1.5301

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	6.1700e-003	0.0628	0.0697	1.0000e-004		3.5700e-003	3.5700e-003		3.2800e-003	3.2800e-003	0.0000	9.2984	9.2984	2.9400e-003	0.0000	9.3719
Total	6.1700e-003	0.0628	0.0697	1.0000e-004		3.5700e-003	3.5700e-003		3.2800e-003	3.2800e-003	0.0000	9.2984	9.2984	2.9400e-003	0.0000	9.3719

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	5.8000e-004	6.2500e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5289	1.5289	5.0000e-005	0.0000	1.5301
Total	7.2000e-004	5.8000e-004	6.2500e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5289	1.5289	5.0000e-005	0.0000	1.5301

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	0.2100	1.1578	2.7382	9.2900e-003	0.7335	9.4700e-003	0.7429	0.1966	8.8900e-003	0.2055	0.0000	856.6930	856.6930	0.0446	0.0000	857.8078
Unmitigated	0.2100	1.1578	2.7382	9.2900e-003	0.7335	9.4700e-003	0.7429	0.1966	8.8900e-003	0.2055	0.0000	856.6930	856.6930	0.0446	0.0000	857.8078

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	385.00	175.18	128.90	916,321	916,321
Government (Civic Center)	459.68	0.00	0.00	1,013,969	1,013,969
Total	844.68	175.18	128.90	1,930,290	1,930,290

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Government (Civic Center)	16.60	8.40	6.90	75.00	20.00	5.00	50	34	16

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

Government (Civic Center)	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	54.5279	54.5279	2.2500e-003	4.7000e-004	54.7230
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	60.5865	60.5865	2.5000e-003	5.2000e-004	60.8033
NaturalGas Mitigated	6.7000e-004	6.0900e-003	5.1200e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6294	6.6294	1.3000e-004	1.2000e-004	6.6688
NaturalGas Unmitigated	6.7000e-004	6.0900e-003	5.1200e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6294	6.6294	1.3000e-004	1.2000e-004	6.6688

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
Government (Civic Center)	124231	6.7000e-004	6.0900e-003	5.1200e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6294	6.6294	1.3000e-004	1.2000e-004	6.6688

Total		6.7000e-004	6.0900e-003	5.1200e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6294	6.6294	1.3000e-004	1.2000e-004	6.6688
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Mitigated

	Natural Gas 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
Government (Civic Center)	124231	6.7000e-004	6.0900e-003	5.1200e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6294	6.6294	1.3000e-004	1.2000e-004	6.6688
Total		6.7000e-004	6.0900e-003	5.1200e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6294	6.6294	1.3000e-004	1.2000e-004	6.6688

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
Government (Civic Center)	190152	60.5865	2.5000e-003	5.2000e-004	60.8033
Total		60.5865	2.5000e-003	5.2000e-004	60.8033

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
Government (Civic Center)	171137	54.5279	2.2500e-003	4.7000e-004	54.7230
Total		54.5279	2.2500e-003	4.7000e-004	54.7230

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	0.0586	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004
Unmitigated	0.0586	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004

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	6.3000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0523					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004
Total	0.0586	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004

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	6.3000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0523					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004
Total	0.0586	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	50.3911	0.0900	2.5000e-003	53.3867

Unmitigated	50.3911	0.0900	2.5000e-003	53.3867
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7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 9.17441	32.4763	1.3400e-003	2.8000e-004	32.5925
Government (Civic Center)	2.69979 / 1.65471	17.9148	0.0887	2.2200e-003	20.7941
Total		50.3911	0.0900	2.5000e-003	53.3867

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 9.17441	32.4763	1.3400e-003	2.8000e-004	32.5925
Government (Civic Center)	2.69979 / 1.65471	17.9148	0.0887	2.2200e-003	20.7941
Total		50.3911	0.0900	2.5000e-003	53.3867

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	15.8577	0.9372	0.0000	39.2867
Unmitigated	15.8577	0.9372	0.0000	39.2867

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.66	0.1340	7.9200e-003	0.0000	0.3319
Government (Civic Center)	77.46	15.7237	0.9292	0.0000	38.9548
Total		15.8577	0.9372	0.0000	39.2867

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

City Park	0.66	0.1340	7.9200e-003	0.0000	0.3319
Government (Civic Center)	77.46	15.7237	0.9292	0.0000	38.9548
Total		15.8577	0.9372	0.0000	39.2867

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation
