

APPENDIX A

Air Quality/GHG Emissions Calculations

**Air Quality and
Greenhouse Gas Emissions
Technical Report**

1830 & 1849 Blue Heights Drive
Los Angeles, CA 90069

Prepared for:

City of Los Angeles
Department of City Planning

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PURPOSE

This Air Quality and Greenhouse Gas Technical Report was prepared to support the CEQA evaluation of a proposed residence. The Project Site is within the Hollywood Community Plan area and the Bel Air – Beverly Crest neighborhood of the City of Los Angeles.

The Proposed Project would involve the construction of a new residence within 1830 Blue Heights Drive and improvements to Blue Heights Drive that would include grading and installation of a soil nail wall within 1849 Blue Heights Drive. The proposed residence would be a 2-story, 11,478-square-foot single-family residence with attached 1,114-square-foot garage and 9,463 square feet of basement space. The proposed improvements to Blue Heights Drive would consist of retaining walls used to support the roadway and grading and installation of a slough wall and a soil nail wall to stabilize the slope above the roadway. These improvements would occur both within the private street easement and within 1849 Blue Heights Drive. While the total Project area, including 1830 and 1849 Blue Heights Drive as well as the private street easement, is approximately 2.65 acres, the area that would be disturbed and graded for the Project is approximately 1 acre.

This report describes the existing framework and methodology used to estimate emissions associated with the Project and includes the model data output sheets.

FRAMEWORK

Air Quality Pollutants

Title I of the federal Clean Air Act (CAA) identifies attainment, nonattainment, and unclassifiable areas with regard to the criteria pollutants, and sets deadlines for all areas to reach attainment for criteria pollutants. The USEPA has set National Ambient Air Quality Standards (NAAQS) and also designates air basins as achieving “attainment” or suffering from “nonattainment” of the standards.

The California Clean Air Act requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practicable date. The California Air Resources Board (CARB) sets the CAAQS for each of the criteria pollutants. In general, the CAAQS are more restrictive than the NAAQS.

California is divided into air districts which are the regional governing authorities with primary responsibility for controlling air pollution from stationary sources. Los Angeles is within the South Coast Air Quality Management District (SCAQMD). SCAQMD has established thresholds and methodology for evaluating the significance of emissions of criteria pollutants.

The criteria pollutants are described below.

Ozone

Ozone (O₃) is a gas formed when volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), both byproducts of internal combustion engine exhaust and other sources, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months, when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

Respirable Particulate Matter (PM₁₀)

Respirable particulate matter (PM₁₀) consists of extremely small, suspended particles or droplets 10 micrometers (µm) or smaller in diameter. Some sources of PM₁₀, like pollen and windstorms, are naturally occurring. However, in populated areas, most PM₁₀ is caused by road dust, diesel soot, combustion products, the abrasion of tires and brakes, and construction activities.

Fine Particulate Matter (PM_{2.5})

PM_{2.5} refers to fine particulate matter that is 2.5 µm or smaller in size. The sources of PM_{2.5} include fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel-powered vehicles such as buses and trucks. These fine particles are also formed in the atmosphere when gases such as SO₂, NO_x, and VOCs are transformed in the air by chemical reactions.

Carbon Monoxide (CO)

Carbon monoxide (CO) is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, and because motor vehicles operating at slow speeds are the primary source of CO in the basin, the highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

Nitrogen Dioxide (NO₂)

Nitrogen dioxide (NO₂) is a reddish-brown, highly reactive gas that is formed in the ambient air through the oxidation of nitric oxide (NO). NO₂ is also a byproduct of fuel combustion. The principle form of NO₂ produced by combustion is NO, but NO reacts quickly to form NO₂, creating the mixture of NO and NO₂ referred to as oxides of nitrogen (NO_x). NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_x is only potentially irritating. NO₂ absorbs blue light, the result of which is a brownish-red cast to the atmosphere and reduced visibility.

Sulfur Dioxide (SO₂)

Sulfur Dioxide (SO₂) is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of the burning of high-sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO₂ oxidizes in the atmosphere, it forms sulfates (SO₄).

Greenhouse Gases

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere in a way that is analogous to how a greenhouse functions. Common GHGs include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Both natural processes and human activities emit GHGs. Emissions from human activities, such as electricity production and vehicle use, have elevated concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. The presence of these GHGs in the atmosphere affects the earth's temperature by retaining heat.

In September 2006, Governor Schwarzenegger signed California's Global Warming Solutions Act of 2006 (AB32) that requires CARB to establish statewide GHG emissions cap for 2020 based on 1990 emissions. As such, evaluating GHG emissions has become part of the CEQA process. The SCAQMD has provided guidance to determining significance of GHG emissions.

EMISSIONS MODELING

Emissions of air pollutants and GHGs were estimated for construction and operation of the Project using the California Emission Estimator Model (CalEEMod). CalEEMod is a computer model developed by the California Air Pollution Control Officer's Association (CAPCOA) in collaboration with the California Air Districts and is the recommended methodology by SCAQMD. CalEEMod relies on project-specific information pertaining to geographic setting, utility service, construction scheduling, equipment inventory, and operational design features to generate estimates of air pollutants and GHG emissions. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

The resulting calculations of maximum daily emissions are shown in the attached model output pages. Within the CalEEMod terminology, "Mitigated Construction" refers to compliance with SCAQMD rules. It is assumed that Project construction would abide by these rules.

For construction emissions, the highest value from mitigated onsite construction output tables for each phases of construction for each season (Winter, Summer) is used. For operational values, the highest

values from each seasonal output are used. Predicted GHG emissions are derived from the Annual project output. The current accepted method for accounting for construction GHG emissions within the SCAQMD service area is to annualize these emissions over a project's operational lifetime, generally defined as 30 years for analysis purposes.

APPENDIX A

Annual

Blue Heights Residence - South Coast Air Basin, Annual

**Blue Heights Residence
South Coast Air Basin, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1.00	Dwelling Unit	0.85	12,000.00	3
Other Non-Asphalt Surfaces	1.80	Acre	1.80	78,408.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	11			Operational Year	2020
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total site area = 2.65 acres

Construction Phase - Based on assumed construction schedule

Grading - Disturbed/graded area: 46,229 square feet

Trips and VMT - Export taken to Scholl Canyon Landfill, 40 miles roundtrip

Woodstoves - No woodstoves

Construction Off-road Equipment Mitigation - Per CARB Title 13 CCR Section 2520-2427, equipment required to be Tier 4 Final for new equipment. For conservative analysis, equipment set to Tier 2.

Area Mitigation -

tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	220.00	100.00
tblConstructionPhase	NumDays	6.00	80.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	8/12/2019	5/24/2019
tblConstructionPhase	PhaseEndDate	7/15/2019	5/10/2019
tblConstructionPhase	PhaseEndDate	9/10/2018	12/21/2018
tblConstructionPhase	PhaseEndDate	7/29/2019	5/17/2019
tblConstructionPhase	PhaseStartDate	7/30/2019	5/18/2019
tblConstructionPhase	PhaseStartDate	9/11/2018	12/22/2018
tblConstructionPhase	PhaseStartDate	7/16/2019	5/11/2019
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	0.05	0.00
tblGrading	AcresOfGrading	40.00	1.06
tblGrading	MaterialExported	0.00	9,599.00
tblLandUse	LandUseSquareFeet	1,800.00	12,000.00
tblLandUse	LotAcreage	0.32	0.85
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblWoodstoves	NumberCatalytic	0.05	0.00
tblWoodstoves	NumberNoncatalytic	0.05	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction Unmitigated Construction

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

2018	0.1103	1.4062	0.5731	1.9000e-003	0.2708	0.0534	0.3243	0.1400	0.0494	0.1894	0.0000	178.7402	178.7402	0.0318	0.0000	179.5359
2019	0.1826	1.0025	0.8365	1.5600e-003	0.0215	0.0540	0.0755	5.7900e-003	0.0517	0.0575	0.0000	134.6127	134.6127	0.0234	0.0000	135.1968
Maximum	0.1826	1.4062	0.8365	1.9000e-003	0.2708	0.0540	0.3243	0.1400	0.0517	0.1894	0.0000	178.7402	178.7402	0.0318	0.0000	179.5359

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					
2018	0.0415	1.1514	0.6441	1.9000e-003	0.1218	0.0241	0.1459	0.0590	0.0240	0.0831	0.0000	178.7401	178.7401	0.0318	0.0000	179.5358
2019	0.1052	1.0648	0.8465	1.5600e-003	0.0215	0.0407	0.0622	5.7900e-003	0.0406	0.0464	0.0000	134.6126	134.6126	0.0234	0.0000	135.1966
Maximum	0.1052	1.1514	0.8465	1.9000e-003	0.1218	0.0407	0.1459	0.0590	0.0406	0.0831	0.0000	178.7401	178.7401	0.0318	0.0000	179.5358

	ROG	NOx	CO	SO2	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	49.89	7.99	-5.75	0.00	51.00	39.69	47.96	55.56	35.99	47.55	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	8-1-2018	10-31-2018	0.7853	0.6122
2	11-1-2018	1-31-2019	0.9850	0.8300
3	2-1-2019	4-30-2019	0.7407	0.7256
4	5-1-2019	7-31-2019	0.1718	0.1774
		Highest	0.9850	0.8300

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	0.0536	3.0000e-004	0.0105	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.2210	0.2210	2.0000e-005	0.0000	0.2226
Energy	1.5000e-004	1.2700e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	5.9095	5.9095	1.3000e-004	5.0000e-005	5.9273
Mobile	3.2300e-003	0.0176	0.0447	1.5000e-004	0.0123	1.6000e-004	0.0124	3.2900e-003	1.5000e-004	3.4300e-003	0.0000	14.0376	14.0376	7.2000e-004	0.0000	14.0555
Waste						0.0000	0.0000		0.0000	0.0000	0.2497	0.0000	0.2497	0.0148	0.0000	0.6186
Water						0.0000	0.0000		0.0000	0.0000	0.0207	0.7267	0.7474	2.1400e-003	5.0000e-005	0.8169
Total	0.0570	0.0191	0.0556	1.6000e-004	0.0123	3.3000e-004	0.0126	3.2900e-003	3.2000e-004	3.6000e-003	0.2704	20.8947	21.1651	0.0178	1.0000e-004	21.6408

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	0.0536	3.0000e-004	0.0105	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.2210	0.2210	2.0000e-005	0.0000	0.2226
Energy	1.5000e-004	1.2700e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	5.9095	5.9095	1.3000e-004	5.0000e-005	5.9273
Mobile	3.2300e-003	0.0176	0.0447	1.5000e-004	0.0123	1.6000e-004	0.0124	3.2900e-003	1.5000e-004	3.4300e-003	0.0000	14.0376	14.0376	7.2000e-004	0.0000	14.0555
Waste						0.0000	0.0000		0.0000	0.0000	0.0749	0.0000	0.0749	4.4300e-003	0.0000	0.1856
Water						0.0000	0.0000		0.0000	0.0000	0.0165	0.6167	0.6332	1.7100e-003	4.0000e-005	0.6889
Total	0.0570	0.0191	0.0556	1.6000e-004	0.0123	3.3000e-004	0.0126	3.2900e-003	3.2000e-004	3.6000e-003	0.0914	20.7847	20.8762	7.0100e-003	9.0000e-005	21.0798

	ROG	NOx	CO	SO2	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	66.18	0.53	1.37	60.55	10.00	2.59

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/29/2018	8/31/2018	5	3	
2	Grading	Grading	9/1/2018	12/21/2018	5	80	
3	Building Construction	Building Construction	12/22/2018	5/10/2019	5	100	
4	Paving	Paving	5/11/2019	5/17/2019	5	5	
5	Architectural Coating	Architectural Coating	5/18/2019	5/24/2019	5	5	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 1.06

Acres of Paving: 1.8

Residential Indoor: 24,300; Residential Outdoor: 8,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41

Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	40	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,200.00	14.70	6.90	40.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	33.00	13.00	0.00	14.70	6.90	20.00	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	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8500e-003	0.0354	0.0191	4.0000e-005		1.4300e-003	1.4300e-003		1.3200e-003	1.3200e-003	0.0000	3.3590	3.3590	1.0500e-003	0.0000	3.3851
Total	2.8500e-003	0.0354	0.0191	4.0000e-005	2.3900e-003	1.4300e-003	3.8200e-003	2.6000e-004	1.3200e-003	1.5800e-003	0.0000	3.3590	3.3590	1.0500e-003	0.0000	3.3851

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	6.0000e-005	5.0000e-005	5.6000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1264	0.1264	0.0000	0.0000	0.1265
Total	6.0000e-005	5.0000e-005	5.6000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1264	0.1264	0.0000	0.0000	0.1265

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					9.3000e-004	0.0000	9.3000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.9000e-004	0.0300	0.0205	4.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	3.3590	3.3590	1.0500e-003	0.0000	3.3851
Total	9.9000e-004	0.0300	0.0205	4.0000e-005	9.3000e-004	7.5000e-004	1.6800e-003	1.0000e-004	7.5000e-004	8.5000e-004	0.0000	3.3590	3.3590	1.0500e-003	0.0000	3.3851

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	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	0.0000
Worker	6.0000e-005	5.0000e-005	5.6000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1264	0.1264	0.0000	0.0000	0.1265	
Total	6.0000e-005	5.0000e-005	5.6000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1264	0.1264	0.0000	0.0000	0.1265	

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2420	0.0000	0.2420	0.1326	0.0000	0.1326	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0861	0.9716	0.4152	8.3000e-004		0.0467	0.0467		0.0430	0.0430	0.0000	75.3858	75.3858	0.0235	0.0000	75.9726
Total	0.0861	0.9716	0.4152	8.3000e-004	0.2420	0.0467	0.2887	0.1326	0.0430	0.1755	0.0000	75.3858	75.3858	0.0235	0.0000	75.9726

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	9.7800e-003	0.3300	0.0664	8.9000e-004	0.0206	1.4200e-003	0.0220	5.6600e-003	1.3600e-003	7.0200e-003	0.0000	87.3023	87.3023	5.6900e-003	0.0000	87.4447
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1200e-003	1.7400e-003	0.0187	5.0000e-005	4.3900e-003	4.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.2000e-003	0.0000	4.2140	4.2140	1.4000e-004	0.0000	4.2176
Total	0.0119	0.3317	0.0851	9.4000e-004	0.0250	1.4600e-003	0.0265	6.8300e-003	1.3900e-003	8.2200e-003	0.0000	91.5163	91.5163	5.8300e-003	0.0000	91.6623

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					0.0944	0.0000	0.0944	0.0517	0.0000	0.0517	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0251	0.7242	0.4858	8.3000e-004		0.0194	0.0194		0.0194	0.0194	0.0000	75.3858	75.3858	0.0235	0.0000	75.9725
Total	0.0251	0.7242	0.4858	8.3000e-004	0.0944	0.0194	0.1138	0.0517	0.0194	0.0711	0.0000	75.3858	75.3858	0.0235	0.0000	75.9725

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	9.7800e-003	0.3300	0.0664	8.9000e-004	0.0206	1.4200e-003	0.0220	5.6600e-003	1.3600e-003	7.0200e-003	0.0000	87.3023	87.3023	5.6900e-003	0.0000	87.4447
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1200e-003	1.7400e-003	0.0187	5.0000e-005	4.3900e-003	4.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.2000e-003	0.0000	4.2140	4.2140	1.4000e-004	0.0000	4.2176
Total	0.0119	0.3317	0.0851	9.4000e-004	0.0250	1.4600e-003	0.0265	6.8300e-003	1.3900e-003	8.2200e-003	0.0000	91.5163	91.5163	5.8300e-003	0.0000	91.6623

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr									MT/yr						
Off-Road	8.7400e-003	0.0621	0.0472	8.0000e-005		3.7700e-003	3.7700e-003		3.6200e-003	3.6200e-003	0.0000	6.3406	6.3406	1.3700e-003	0.0000	6.3748
Total	8.7400e-003	0.0621	0.0472	8.0000e-005		3.7700e-003	3.7700e-003		3.6200e-003	3.6200e-003	0.0000	6.3406	6.3406	1.3700e-003	0.0000	6.3748

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	1.7000e-004	4.8400e-003	1.2700e-003	1.0000e-005	2.5000e-004	3.0000e-005	2.8000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	0.9691	0.9691	7.0000e-005	0.0000	0.9709
Worker	5.2000e-004	4.3000e-004	4.6300e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0430	1.0430	4.0000e-005	0.0000	1.0439
Total	6.9000e-004	5.2700e-003	5.9000e-003	2.0000e-005	1.3400e-003	4.0000e-005	1.3800e-003	3.6000e-004	4.0000e-005	4.0000e-004	0.0000	2.0121	2.0121	1.1000e-004	0.0000	2.0147

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	2.8400e-003	0.0601	0.0462	8.0000e-005		2.4500e-003	2.4500e-003		2.4500e-003	2.4500e-003	0.0000	6.3406	6.3406	1.3700e-003	0.0000	6.3748
Total	2.8400e-003	0.0601	0.0462	8.0000e-005		2.4500e-003	2.4500e-003		2.4500e-003	2.4500e-003	0.0000	6.3406	6.3406	1.3700e-003	0.0000	6.3748

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	1.7000e-004	4.8400e-003	1.2700e-003	1.0000e-005	2.5000e-004	3.0000e-005	2.8000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	0.9691	0.9691	7.0000e-005	0.0000	0.9709
Worker	5.2000e-004	4.3000e-004	4.6300e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0430	1.0430	4.0000e-005	0.0000	1.0439
Total	6.9000e-004	5.2700e-003	5.9000e-003	2.0000e-005	1.3400e-003	4.0000e-005	1.3800e-003	3.6000e-004	4.0000e-005	4.0000e-004	0.0000	2.0121	2.0121	1.1000e-004	0.0000	2.0147

3.4 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	0.1202	0.8888	0.7170	1.1800e-003		0.0512	0.0512		0.0491	0.0491	0.0000	98.5845	98.5845	0.0205	0.0000	99.0972
Total	0.1202	0.8888	0.7170	1.1800e-003		0.0512	0.0512		0.0491	0.0491	0.0000	98.5845	98.5845	0.0205	0.0000	99.0972

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
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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	0.0000
Vendor	2.4300e-003	0.0716	0.0182	1.6000e-004	3.8500e-003	4.7000e-004	4.3200e-003	1.1100e-003	4.5000e-004	1.5600e-003	0.0000	15.0443	15.0443	1.0600e-003	0.0000	15.0707	
Worker	7.4700e-003	5.9600e-003	0.0648	1.8000e-004	0.0170	1.4000e-004	0.0172	4.5200e-003	1.3000e-004	4.6400e-003	0.0000	15.8241	15.8241	5.0000e-004	0.0000	15.8365	
Total	9.9000e-003	0.0775	0.0830	3.4000e-004	0.0209	6.1000e-004	0.0215	5.6300e-003	5.8000e-004	6.2000e-003	0.0000	30.8684	30.8684	1.5600e-003	0.0000	30.9072	

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive 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	0.0445	0.9422	0.7242	1.1800e-003		0.0384	0.0384		0.0384	0.0384	0.0000	98.5844	98.5844	0.0205	0.0000	99.0971
Total	0.0445	0.9422	0.7242	1.1800e-003		0.0384	0.0384		0.0384	0.0384	0.0000	98.5844	98.5844	0.0205	0.0000	99.0971

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive 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	2.4300e-003	0.0716	0.0182	1.6000e-004	3.8500e-003	4.7000e-004	4.3200e-003	1.1100e-003	4.5000e-004	1.5600e-003	0.0000	15.0443	15.0443	1.0600e-003	0.0000	15.0707
Worker	7.4700e-003	5.9600e-003	0.0648	1.8000e-004	0.0170	1.4000e-004	0.0172	4.5200e-003	1.3000e-004	4.6400e-003	0.0000	15.8241	15.8241	5.0000e-004	0.0000	15.8365

Total	9.9000e-003	0.0775	0.0830	3.4000e-004	0.0209	6.1000e-004	0.0215	5.6300e-003	5.8000e-004	6.2000e-003	0.0000	30.8684	30.8684	1.5600e-003	0.0000	30.9072
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3.5 Paving - 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	3.1100e-003	0.0314	0.0296	4.0000e-005		1.8300e-003	1.8300e-003		1.6800e-003	1.6800e-003	0.0000	3.9604	3.9604	1.2300e-003	0.0000	3.9911
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.1100e-003	0.0314	0.0296	4.0000e-005		1.8300e-003	1.8300e-003		1.6800e-003	1.6800e-003	0.0000	3.9604	3.9604	1.2300e-003	0.0000	3.9911

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.4000e-004	1.5700e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3826	0.3826	1.0000e-005	0.0000	0.3829
Total	1.8000e-004	1.4000e-004	1.5700e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3826	0.3826	1.0000e-005	0.0000	0.3829

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	1.8400e-003	0.0390	0.0324	4.0000e-005		1.3900e-003	1.3900e-003		1.3900e-003	1.3900e-003	0.0000	3.9604	3.9604	1.2300e-003	0.0000	3.9911
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.8400e-003	0.0390	0.0324	4.0000e-005		1.3900e-003	1.3900e-003		1.3900e-003	1.3900e-003	0.0000	3.9604	3.9604	1.2300e-003	0.0000	3.9911

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.4000e-004	1.5700e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3826	0.3826	1.0000e-005	0.0000	0.3829
Total	1.8000e-004	1.4000e-004	1.5700e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3826	0.3826	1.0000e-005	0.0000	0.3829

3.6 Architectural Coating - 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					
Archit. Coating	0.0485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397

Total	0.0491	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
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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	0.0000	0.0000	0.0000	0.0000	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	8.0000e-005	7.0000e-005	7.3000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1785	0.1785	1.0000e-005	0.0000	0.1787
Total	8.0000e-005	7.0000e-005	7.3000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1785	0.1785	1.0000e-005	0.0000	0.1787

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	0.0485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-004	5.8800e-003	4.5800e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	0.0487	5.8800e-003	4.5800e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397

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	8.0000e-005	7.0000e-005	7.3000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1785	0.1785	1.0000e-005	0.0000	0.1787
Total	8.0000e-005	7.0000e-005	7.3000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1785	0.1785	1.0000e-005	0.0000	0.1787

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.2300e-003	0.0176	0.0447	1.5000e-004	0.0123	1.6000e-004	0.0124	3.2900e-003	1.5000e-004	3.4300e-003	0.0000	14.0376	14.0376	7.2000e-004	0.0000	14.0555
Unmitigated	3.2300e-003	0.0176	0.0447	1.5000e-004	0.0123	1.6000e-004	0.0124	3.2900e-003	1.5000e-004	3.4300e-003	0.0000	14.0376	14.0376	7.2000e-004	0.0000	14.0555

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	9.52	9.91	8.62	32,282	32,282
Total	9.52	9.91	8.62	32,282	32,282

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
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Single Family Housing	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4.4422	4.4422	1.0000e-004	2.0000e-005	4.4513
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4.4422	4.4422	1.0000e-004	2.0000e-005	4.4513
NaturalGas Mitigated	1.5000e-004	1.2700e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4673	1.4673	3.0000e-005	3.0000e-005	1.4760
NaturalGas Unmitigated	1.5000e-004	1.2700e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4673	1.4673	3.0000e-005	3.0000e-005	1.4760

5.2 Energy by Land Use - NaturalGas

Unmitigated

	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					
Other Non-Asphalt Surfaces	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
Single Family Housing	27496.3	1.5000e-004	1.2700e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4673	1.4673	3.0000e-005	3.0000e-005	1.4760
Total		1.5000e-004	1.2700e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4673	1.4673	3.0000e-005	3.0000e-005	1.4760

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					
Other Non-Asphalt Surfaces	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
Single Family Housing	27496.3	1.5000e-004	1.2700e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4673	1.4673	3.0000e-005	3.0000e-005	1.4760
Total		1.5000e-004	1.2700e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4673	1.4673	3.0000e-005	3.0000e-005	1.4760

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7975.71	4.4422	1.0000e-004	2.0000e-005	4.4513
Total		4.4422	1.0000e-004	2.0000e-005	4.4513

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7975.71	4.4422	1.0000e-004	2.0000e-005	4.4513
Total		4.4422	1.0000e-004	2.0000e-005	4.4513

6.0 Area Detail

6.1 Mitigation Measures Area

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior
- Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	0.0536	3.0000e-004	0.0105	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.2210	0.2210	2.0000e-005	0.0000	0.2226
Unmitigated	0.0536	3.0000e-004	0.0105	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.2210	0.2210	2.0000e-005	0.0000	0.2226

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	4.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.0000e-005	1.8000e-004	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2041	0.2041	0.0000	0.0000	0.2053
Landscaping	3.2000e-004	1.2000e-004	0.0104	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0169	0.0169	2.0000e-005	0.0000	0.0173
Total	0.0536	3.0000e-004	0.0104	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.2210	0.2210	2.0000e-005	0.0000	0.2226

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	4.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.0000e-005	1.8000e-004	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2041	0.2041	0.0000	0.0000	0.2053
Landscaping	3.2000e-004	1.2000e-004	0.0104	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0169	0.0169	2.0000e-005	0.0000	0.0173
Total	0.0536	3.0000e-004	0.0104	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.2210	0.2210	2.0000e-005	0.0000	0.2226

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.6332	1.7100e-003	4.0000e-005	0.6889
Unmitigated	0.7474	2.1400e-003	5.0000e-005	0.8169

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.7474	2.1400e-003	5.0000e-005	0.8169
Total		0.7474	2.1400e-003	5.0000e-005	0.8169

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.0521232 /	0.6332	1.7100e-003	4.0000e-005	0.6889
Total		0.6332	1.7100e-003	4.0000e-005	0.6889

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0749	4.4300e-003	0.0000	0.1856
Unmitigated	0.2497	0.0148	0.0000	0.6186

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
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Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.23	0.2497	0.0148	0.0000	0.6186
Total		0.2497	0.0148	0.0000	0.6186

Mitigated

Land Use	Waste Disposed tons	Total CO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.369	0.0749	4.4300e-003	0.0000	0.1856
Total		0.0749	4.4300e-003	0.0000	0.1856

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

APPENDIX A

Summer

Blue Heights Residence - South Coast Air Basin, Summer

Blue Heights Residence
South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1.00	Dwelling Unit	0.85	12,000.00	3
Other Non-Asphalt Surfaces	1.80	Acre	1.80	78,408.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	11			Operational Year	2020
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total site area = 2.65 acres

Construction Phase - Based on assumed construction schedule

Grading - Disturbed/graded area: 46,229 square feet

Trips and VMT - Export taken to Scholl Canyon Landfill, 40 miles roundtrip

Woodstoves - No woodstoves

Construction Off-road Equipment Mitigation - Per CARB Title 13 CCR Section 2520-2427, equipment required to be Tier 4 Final for new equipment. For conservative analysis, equipment set to Tier 2.

Area Mitigation -

tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	220.00	100.00
tblConstructionPhase	NumDays	6.00	80.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	8/12/2019	5/24/2019
tblConstructionPhase	PhaseEndDate	7/15/2019	5/10/2019
tblConstructionPhase	PhaseEndDate	9/10/2018	12/21/2018
tblConstructionPhase	PhaseEndDate	7/29/2019	5/17/2019
tblConstructionPhase	PhaseStartDate	7/30/2019	5/18/2019
tblConstructionPhase	PhaseStartDate	9/11/2018	12/22/2018
tblConstructionPhase	PhaseStartDate	7/16/2019	5/11/2019
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	0.05	0.00
tblGrading	AcresOfGrading	40.00	1.06
tblGrading	MaterialExported	0.00	9,599.00
tblLandUse	LandUseSquareFeet	1,800.00	12,000.00
tblLandUse	LotAcreage	0.32	0.85
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblWoodstoves	NumberCatalytic	0.05	0.00
tblWoodstoves	NumberNoncatalytic	0.05	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

2018	3.1449	32.2360	17.7702	0.0442	6.6852	1.2720	7.8898	3.4869	1.2189	4.5965	0.0000	4,614.207 3	4,614.207 3	0.8062	0.0000	4,634.361 4
2019	19.6784	20.5147	17.1007	0.0323	0.4520	1.1029	1.5550	0.1218	1.0570	1.1788	0.0000	3,058.530 6	3,058.530 6	0.5473	0.0000	3,071.461 1
Maximum	19.6784	32.2360	17.7702	0.0442	6.6852	1.2720	7.8898	3.4869	1.2189	4.5965	0.0000	4,614.207 3	4,614.207 3	0.8062	0.0000	4,634.361 4

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	1.1793	26.0515	17.4600	0.0442	2.9949	0.8323	3.5162	1.4655	0.8315	1.9852	0.0000	4,614.207 3	4,614.207 3	0.8062	0.0000	4,634.361 4
2019	19.5259	21.6508	17.2543	0.0323	0.4520	0.8306	1.2826	0.1218	0.8299	0.9517	0.0000	3,058.530 6	3,058.530 6	0.5473	0.0000	3,071.461 1
Maximum	19.5259	26.0515	17.4600	0.0442	2.9949	0.8323	3.5162	1.4655	0.8315	1.9852	0.0000	4,614.207 3	4,614.207 3	0.8062	0.0000	4,634.361 4

	ROG	NOx	CO	SO2	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	9.28	9.57	0.45	0.00	51.71	29.98	49.19	56.02	27.00	49.15	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596
Energy	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153
Mobile	0.0198	0.0968	0.2694	9.1000e-004	0.0720	9.0000e-004	0.0729	0.0193	8.4000e-004	0.0201		92.7715	92.7715	4.5900e-003		92.8862

Total	0.3168	0.1188	0.3613	1.0400e-003	0.0720	3.0600e-003	0.0750	0.0193	3.0000e-003	0.0223	0.0000	119.7831	119.7831	5.2500e-003	4.9000e-004	120.0610
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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596
Energy	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153
Mobile	0.0198	0.0968	0.2694	9.1000e-004	0.0720	9.0000e-004	0.0729	0.0193	8.4000e-004	0.0201		92.7715	92.7715	4.5900e-003		92.8862
Total	0.3168	0.1188	0.3613	1.0400e-003	0.0720	3.0600e-003	0.0750	0.0193	3.0000e-003	0.0223	0.0000	119.7831	119.7831	5.2500e-003	4.9000e-004	120.0610

	ROG	NOx	CO	SO2	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	0.00	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	Site Preparation	Site Preparation	8/29/2018	8/31/2018	5	3	
2	Grading	Grading	9/1/2018	12/21/2018	5	80	
3	Building Construction	Building Construction	12/22/2018	5/10/2019	5	100	
4	Paving	Paving	5/11/2019	5/17/2019	5	5	
5	Architectural Coating	Architectural Coating	5/18/2019	5/24/2019	5	5	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 1.06

Acres of Paving: 1.8

Residential Indoor: 24,300; Residential Outdoor: 8,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,200.00	14.70	6.90	40.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	33.00	13.00	0.00	14.70	6.90	20.00	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	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.8995	23.6201	12.7461	0.0245		0.9540	0.9540		0.8777	0.8777		2,468.413	2,468.413	0.7685		2,487.624
Total	1.8995	23.6201	12.7461	0.0245	1.5908	0.9540	2.5448	0.1718	0.8777	1.0494		2,468.413	2,468.413	0.7685		2,487.624

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		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
Worker	0.0427	0.0308	0.4002	9.8000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.4976	97.4976	3.3300e-003		97.5809
Total	0.0427	0.0308	0.4002	9.8000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.4976	97.4976	3.3300e-003		97.5809

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	0.6625	20.0179	13.6431	0.0245		0.4988	0.4988		0.4988	0.4988	0.0000	2,468.413 1	2,468.413 1	0.7685		2,487.624 4
Total	0.6625	20.0179	13.6431	0.0245	0.6204	0.4988	1.1191	0.0670	0.4988	0.5657	0.0000	2,468.413 1	2,468.413 1	0.7685		2,487.624 4

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		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
Worker	0.0427	0.0308	0.4002	9.8000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.4976	97.4976	3.3300e-003		97.5809
Total	0.0427	0.0308	0.4002	9.8000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.4976	97.4976	3.3300e-003		97.5809

3.3 Grading - 2018

Unmitigated Construction On-Site

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

Fugitive Dust					6.0497	0.0000	6.0497	3.3138	0.0000	3.3138			0.0000			0.0000
Off-Road	2.1515	24.2895	10.3804	0.0206		1.1683	1.1683		1.0748	1.0748		2,077.4666	2,077.4666	0.6467		2,093.6352
Total	2.1515	24.2895	10.3804	0.0206	6.0497	1.1683	7.2180	3.3138	1.0748	4.3886		2,077.4666	2,077.4666	0.6467		2,093.6352

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2429	7.9080	1.6331	0.0223	0.5237	0.0354	0.5591	0.1435	0.0339	0.1774		2,414.8687	2,414.8687	0.1553		2,418.7500
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
Worker	0.0534	0.0385	0.5003	1.2200e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		121.8720	121.8720	4.1700e-003		121.9761
Total	0.2964	7.9465	2.1334	0.0235	0.6355	0.0363	0.6718	0.1731	0.0347	0.2078		2,536.7407	2,536.7407	0.1594		2,540.7262

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	lb/day										lb/day					
Fugitive Dust					2.3594	0.0000	2.3594	1.2924	0.0000	1.2924			0.0000			0.0000
Off-Road	0.6262	18.1050	12.1450	0.0206		0.4850	0.4850		0.4850	0.4850	0.0000	2,077.4666	2,077.4666	0.6467		2,093.6352
Total	0.6262	18.1050	12.1450	0.0206	2.3594	0.4850	2.8444	1.2924	0.4850	1.7774	0.0000	2,077.4666	2,077.4666	0.6467		2,093.6352

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2429	7.9080	1.6331	0.0223	0.5237	0.0354	0.5591	0.1435	0.0339	0.1774		2,414.8687	2,414.8687	0.1553		2,418.7500
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
Worker	0.0534	0.0385	0.5003	1.2200e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		121.8720	121.8720	4.1700e-003		121.9761
Total	0.2964	7.9465	2.1334	0.0235	0.6355	0.0363	0.6718	0.1731	0.0347	0.2078		2,536.7407	2,536.7407	0.1594		2,540.7262

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9127	20.7077	15.7183	0.0250		1.2575	1.2575		1.2051	1.2051		2,329.7759	2,329.7759	0.5019		2,342.3232
Total	2.9127	20.7077	15.7183	0.0250		1.2575	1.2575		1.2051	1.2051		2,329.7759	2,329.7759	0.5019		2,342.3232

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0559	1.5794	0.4009	3.3800e-003	0.0832	0.0115	0.0947	0.0240	0.0110	0.0350		360.1120	360.1120	0.0249		360.7338
Worker	0.1763	0.1271	1.6510	4.0400e-003	0.3689	2.9600e-003	0.3718	0.0978	2.7300e-003	0.1006		402.1776	402.1776	0.0138		402.5213
Total	0.2322	1.7065	2.0519	7.4200e-003	0.4521	0.0145	0.4666	0.1218	0.0138	0.1355		762.2896	762.2896	0.0386		763.2551

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,329.7759	2,329.7759	0.5019		2,342.3232
Total	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,329.7759	2,329.7759	0.5019		2,342.3232

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0559	1.5794	0.4009	3.3800e-003	0.0832	0.0115	0.0947	0.0240	0.0110	0.0350		360.1120	360.1120	0.0249		360.7338
Worker	0.1763	0.1271	1.6510	4.0400e-003	0.3689	2.9600e-003	0.3718	0.0978	2.7300e-003	0.1006		402.1776	402.1776	0.0138		402.5213
Total	0.2322	1.7065	2.0519	7.4200e-003	0.4521	0.0145	0.4666	0.1218	0.0138	0.1355		762.2896	762.2896	0.0386		763.2551

3.4 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	lb/day										lb/day					
Off-Road	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0507	1.4923	0.3680	3.3400e-003	0.0832	9.8900e-003	0.0931	0.0240	9.4600e-003	0.0334		356.8658	356.8658	0.0240		357.4661
Worker	0.1602	0.1121	1.4782	3.9100e-003	0.3689	2.8900e-003	0.3718	0.0978	2.6600e-003	0.1005		389.5193	389.5193	0.0122		389.8245
Total	0.2109	1.6044	1.8462	7.2500e-003	0.4520	0.0128	0.4648	0.1218	0.0121	0.1339		746.3851	746.3851	0.0362		747.2906

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
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Category	lb/day										lb/day					
Off-Road	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0507	1.4923	0.3680	3.3400e-003	0.0832	9.8900e-003	0.0931	0.0240	9.4600e-003	0.0334		356.8658	356.8658	0.0240		357.4661
Worker	0.1602	0.1121	1.4782	3.9100e-003	0.3689	2.8900e-003	0.3718	0.0978	2.6600e-003	0.1005		389.5193	389.5193	0.0122		389.8245
Total	0.2109	1.6044	1.8462	7.2500e-003	0.4520	0.0128	0.4648	0.1218	0.0121	0.1339		746.3851	746.3851	0.0362		747.2906

3.5 Paving - 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	lb/day										lb/day					
Off-Road	1.2453	12.5685	11.8507	0.0178		0.7301	0.7301		0.6728	0.6728		1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2453	12.5685	11.8507	0.0178		0.7301	0.7301		0.6728	0.6728		1,746.2432	1,746.2432	0.5418		1,759.7870

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		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
Worker	0.0728	0.0510	0.6719	1.7800e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		177.0542	177.0542	5.5500e-003		177.1930
Total	0.0728	0.0510	0.6719	1.7800e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		177.0542	177.0542	5.5500e-003		177.1930

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7344	15.6108	12.9737	0.0178		0.5580	0.5580		0.5580	0.5580	0.0000	1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7344	15.6108	12.9737	0.0178		0.5580	0.5580		0.5580	0.5580	0.0000	1,746.2432	1,746.2432	0.5418		1,759.7870

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
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Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0728	0.0510	0.6719	1.7800e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		177.0542	177.0542	5.5500e-003		177.1930
Total	0.0728	0.0510	0.6719	1.7800e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		177.0542	177.0542	5.5500e-003		177.1930

3.6 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	19.3780					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	19.6445	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		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
Worker	0.0340	0.0238	0.3136	8.3000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		82.6253	82.6253	2.5900e-003		82.6900

Total	0.0340	0.0238	0.3136	8.3000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		82.6253	82.6253	2.5900e-003		82.6900
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.3780					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0238		282.0423
Total	19.4919	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0238		282.0423

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		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
Worker	0.0340	0.0238	0.3136	8.3000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		82.6253	82.6253	2.5900e-003		82.6900
Total	0.0340	0.0238	0.3136	8.3000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		82.6253	82.6253	2.5900e-003		82.6900

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0198	0.0968	0.2694	9.1000e-004	0.0720	9.0000e-004	0.0729	0.0193	8.4000e-004	0.0201		92.7715	92.7715	4.5900e-003		92.8862
Unmitigated	0.0198	0.0968	0.2694	9.1000e-004	0.0720	9.0000e-004	0.0729	0.0193	8.4000e-004	0.0201		92.7715	92.7715	4.5900e-003		92.8862

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	9.52	9.91	8.62	32,282	32,282
Total	9.52	9.91	8.62	32,282	32,282

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
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Single Family Housing	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955

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	lb/day										lb/day					
NaturalGas Mitigated	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153
NaturalGas Unmitigated	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	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
Single Family Housing	75.3322	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153
Total		8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

Other Non-Asphalt Surfaces	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
Single Family Housing	0.0753322	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153
Total		8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596
Unmitigated	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596

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
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SubCategory	lb/day								lb/day							
Architectural Coating	0.0266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500e-003	0.0141	6.0000e-003	9.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	18.0000	18.0000	3.4000e-004	3.3000e-004	18.1070
Landscaping	2.5400e-003	9.6000e-004	0.0830	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1490	0.1490	1.5000e-004		0.1526
Total	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day								lb/day							
Architectural Coating	0.0266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500e-003	0.0141	6.0000e-003	9.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	18.0000	18.0000	3.4000e-004	3.3000e-004	18.1070
Landscaping	2.5400e-003	9.6000e-004	0.0830	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1490	0.1490	1.5000e-004		0.1526
Total	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

APPENDIX A

Winter

Blue Heights Residence - South Coast Air Basin, Winter

**Blue Heights Residence
South Coast Air Basin, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1.00	Dwelling Unit	0.85	12,000.00	3
Other Non-Asphalt Surfaces	1.80	Acre	1.80	78,408.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	11			Operational Year	2020
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total site area = 2.65 acres

Construction Phase - Based on assumed construction schedule

Grading - Disturbed/graded area: 46,229 square feet

Trips and VMT - Export taken to Scholl Canyon Landfill, 40 miles roundtrip

Woodstoves - No woodstoves

Construction Off-road Equipment Mitigation - Per CARB Title 13 CCR Section 2520-2427, equipment required to be Tier 4 Final for new equipment. For conservative analysis, equipment set to Tier 2.

Area Mitigation -

tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	220.00	100.00
tblConstructionPhase	NumDays	6.00	80.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	8/12/2019	5/24/2019
tblConstructionPhase	PhaseEndDate	7/15/2019	5/10/2019
tblConstructionPhase	PhaseEndDate	9/10/2018	12/21/2018
tblConstructionPhase	PhaseEndDate	7/29/2019	5/17/2019
tblConstructionPhase	PhaseStartDate	7/30/2019	5/18/2019
tblConstructionPhase	PhaseStartDate	9/11/2018	12/22/2018
tblConstructionPhase	PhaseStartDate	7/16/2019	5/11/2019
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	0.05	0.00
tblGrading	AcresOfGrading	40.00	1.06
tblGrading	MaterialExported	0.00	9,599.00
tblLandUse	LandUseSquareFeet	1,800.00	12,000.00
tblLandUse	LotAcreage	0.32	0.85
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblWoodstoves	NumberCatalytic	0.05	0.00
tblWoodstoves	NumberNoncatalytic	0.05	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

2018	3.1643	32.4337	17.6655	0.0439	6.6852	1.2722	7.8902	3.4869	1.2190	4.5968	0.0000	4,585.2088	4,585.2088	0.8097	0.0000	4,605.4512
2019	19.6818	20.5276	17.0050	0.0319	0.4520	1.1031	1.5551	0.1218	1.0572	1.1790	0.0000	3,024.7913	3,024.7913	0.5470	0.0000	3,037.7447
Maximum	19.6818	32.4337	17.6655	0.0439	6.6852	1.2722	7.8902	3.4869	1.2190	4.5968	0.0000	4,585.2088	4,585.2088	0.8097	0.0000	4,605.4512

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	1.1987	26.2493	17.3554	0.0439	2.9949	0.8325	3.5166	1.4655	0.8317	1.9856	0.0000	4,585.2088	4,585.2088	0.8097	0.0000	4,605.4512
2019	19.5292	21.6637	17.1587	0.0319	0.4520	0.8307	1.2828	0.1218	0.8300	0.9518	0.0000	3,024.7913	3,024.7913	0.5470	0.0000	3,037.7447
Maximum	19.5292	26.2493	17.3554	0.0439	2.9949	0.8325	3.5166	1.4655	0.8317	1.9856	0.0000	4,585.2088	4,585.2088	0.8097	0.0000	4,605.4512

	ROG	NOx	CO	SO2	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	9.27	9.53	0.45	0.00	51.71	29.98	49.19	56.02	27.00	49.14	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596
Energy	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153
Mobile	0.0191	0.0993	0.2536	8.7000e-004	0.0720	9.0000e-004	0.0729	0.0193	8.5000e-004	0.0201		88.0144	88.0144	4.5700e-003		88.1286

Total	0.3160	0.1213	0.3455	1.0000e-003	0.0720	3.0600e-003	0.0750	0.0193	3.0100e-003	0.0223	0.0000	115.0260	115.0260	5.2300e-003	4.9000e-004	115.3034
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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596
Energy	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153
Mobile	0.0191	0.0993	0.2536	8.7000e-004	0.0720	9.0000e-004	0.0729	0.0193	8.5000e-004	0.0201		88.0144	88.0144	4.5700e-003		88.1286
Total	0.3160	0.1213	0.3455	1.0000e-003	0.0720	3.0600e-003	0.0750	0.0193	3.0100e-003	0.0223	0.0000	115.0260	115.0260	5.2300e-003	4.9000e-004	115.3034

	ROG	NOx	CO	SO2	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	0.00	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	Site Preparation	Site Preparation	8/29/2018	8/31/2018	5	3	
2	Grading	Grading	9/1/2018	12/21/2018	5	80	
3	Building Construction	Building Construction	12/22/2018	5/10/2019	5	100	
4	Paving	Paving	5/11/2019	5/17/2019	5	5	
5	Architectural Coating	Architectural Coating	5/18/2019	5/24/2019	5	5	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 1.06

Acres of Paving: 1.8

Residential Indoor: 24,300; Residential Outdoor: 8,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,200.00	14.70	6.90	40.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	33.00	13.00	0.00	14.70	6.90	20.00	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	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000				0.0000
Off-Road	1.8995	23.6201	12.7461	0.0245		0.9540	0.9540		0.8777	0.8777		2,468.413	2,468.413	0.7685			2,487.624
Total	1.8995	23.6201	12.7461	0.0245	1.5908	0.9540	2.5448	0.1718	0.8777	1.0494		2,468.413	2,468.413	0.7685			2,487.624

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		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
Worker	0.0469	0.0339	0.3647	9.2000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.4602	91.4602	3.1300e-003			91.5385
Total	0.0469	0.0339	0.3647	9.2000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.4602	91.4602	3.1300e-003			91.5385

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	0.6625	20.0179	13.6431	0.0245		0.4988	0.4988		0.4988	0.4988	0.0000	2,468.413 1	2,468.413 1	0.7685		2,487.624 4
Total	0.6625	20.0179	13.6431	0.0245	0.6204	0.4988	1.1191	0.0670	0.4988	0.5657	0.0000	2,468.413 1	2,468.413 1	0.7685		2,487.624 4

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		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
Worker	0.0469	0.0339	0.3647	9.2000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.4602	91.4602	3.1300e-003		91.5385
Total	0.0469	0.0339	0.3647	9.2000e-004	0.0894	7.2000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.4602	91.4602	3.1300e-003		91.5385

3.3 Grading - 2018

Unmitigated Construction On-Site

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

Fugitive Dust					6.0497	0.0000	6.0497	3.3138	0.0000	3.3138			0.0000			0.0000
Off-Road	2.1515	24.2895	10.3804	0.0206		1.1683	1.1683		1.0748	1.0748		2,077.4666	2,077.4666	0.6467		2,093.6352
Total	2.1515	24.2895	10.3804	0.0206	6.0497	1.1683	7.2180	3.3138	1.0748	4.3886		2,077.4666	2,077.4666	0.6467		2,093.6352

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2466	8.1019	1.6979	0.0221	0.5237	0.0358	0.5595	0.1435	0.0342	0.1777		2,393.4170	2,393.4170	0.1590		2,397.3929
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
Worker	0.0586	0.0423	0.4559	1.1500e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		114.3253	114.3253	3.9200e-003		114.4231
Total	0.3052	8.1443	2.1539	0.0233	0.6355	0.0367	0.6721	0.1731	0.0351	0.2082		2,507.7422	2,507.7422	0.1630		2,511.8160

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3594	0.0000	2.3594	1.2924	0.0000	1.2924			0.0000			0.0000
Off-Road	0.6262	18.1050	12.1450	0.0206		0.4850	0.4850		0.4850	0.4850	0.0000	2,077.4666	2,077.4666	0.6467		2,093.6352
Total	0.6262	18.1050	12.1450	0.0206	2.3594	0.4850	2.8444	1.2924	0.4850	1.7774	0.0000	2,077.4666	2,077.4666	0.6467		2,093.6352

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2466	8.1019	1.6979	0.0221	0.5237	0.0358	0.5595	0.1435	0.0342	0.1777		2,393.4170	2,393.4170	0.1590		2,397.3929
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
Worker	0.0586	0.0423	0.4559	1.1500e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		114.3253	114.3253	3.9200e-003		114.4231
Total	0.3052	8.1443	2.1539	0.0233	0.6355	0.0367	0.6721	0.1731	0.0351	0.2082		2,507.7422	2,507.7422	0.1630		2,511.8160

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9127	20.7077	15.7183	0.0250		1.2575	1.2575		1.2051	1.2051		2,329.7759	2,329.7759	0.5019		2,342.3232
Total	2.9127	20.7077	15.7183	0.0250		1.2575	1.2575		1.2051	1.2051		2,329.7759	2,329.7759	0.5019		2,342.3232

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0583	1.5828	0.4427	3.2900e-003	0.0832	0.0117	0.0949	0.0240	0.0112	0.0352		350.5337	350.5337	0.0266		351.1987
Worker	0.1933	0.1397	1.5045	3.7900e-003	0.3689	2.9600e-003	0.3718	0.0978	2.7300e-003	0.1006		377.2733	377.2733	0.0129		377.5963
Total	0.2516	1.7224	1.9472	7.0800e-003	0.4521	0.0147	0.4667	0.1218	0.0140	0.1357		727.8070	727.8070	0.0395		728.7951

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,329.7759	2,329.7759	0.5019		2,342.3232
Total	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,329.7759	2,329.7759	0.5019		2,342.3232

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0583	1.5828	0.4427	3.2900e-003	0.0832	0.0117	0.0949	0.0240	0.0112	0.0352		350.5337	350.5337	0.0266		351.1987
Worker	0.1933	0.1397	1.5045	3.7900e-003	0.3689	2.9600e-003	0.3718	0.0978	2.7300e-003	0.1006		377.2733	377.2733	0.0129		377.5963
Total	0.2516	1.7224	1.9472	7.0800e-003	0.4521	0.0147	0.4667	0.1218	0.0140	0.1357		727.8070	727.8070	0.0395		728.7951

3.4 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	lb/day										lb/day					
Off-Road	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0529	1.4941	0.4075	3.2500e-003	0.0832	0.0101	0.0932	0.0240	9.6100e-003	0.0336		347.2806	347.2806	0.0257		347.9226
Worker	0.1760	0.1232	1.3430	3.6700e-003	0.3689	2.8900e-003	0.3718	0.0978	2.6600e-003	0.1005		365.3652	365.3652	0.0115		365.6516
Total	0.2288	1.6173	1.7506	6.9200e-003	0.4520	0.0129	0.4650	0.1218	0.0123	0.1340		712.6458	712.6458	0.0371		713.5742

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
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Category	lb/day										lb/day					
Off-Road	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0529	1.4941	0.4075	3.2500e-003	0.0832	0.0101	0.0932	0.0240	9.6100e-003	0.0336		347.2806	347.2806	0.0257		347.9226
Worker	0.1760	0.1232	1.3430	3.6700e-003	0.3689	2.8900e-003	0.3718	0.0978	2.6600e-003	0.1005		365.3652	365.3652	0.0115		365.6516
Total	0.2288	1.6173	1.7506	6.9200e-003	0.4520	0.0129	0.4650	0.1218	0.0123	0.1340		712.6458	712.6458	0.0371		713.5742

3.5 Paving - 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	lb/day										lb/day					
Off-Road	1.2453	12.5685	11.8507	0.0178		0.7301	0.7301		0.6728	0.6728		1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2453	12.5685	11.8507	0.0178		0.7301	0.7301		0.6728	0.6728		1,746.2432	1,746.2432	0.5418		1,759.7870

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		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
Worker	0.0800	0.0560	0.6105	1.6700e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		166.0751	166.0751	5.2100e-003		166.2053
Total	0.0800	0.0560	0.6105	1.6700e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		166.0751	166.0751	5.2100e-003		166.2053

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7344	15.6108	12.9737	0.0178		0.5580	0.5580		0.5580	0.5580	0.0000	1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7344	15.6108	12.9737	0.0178		0.5580	0.5580		0.5580	0.5580	0.0000	1,746.2432	1,746.2432	0.5418		1,759.7870

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
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Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0800	0.0560	0.6105	1.6700e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		166.0751	166.0751	5.2100e-003		166.2053
Total	0.0800	0.0560	0.6105	1.6700e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		166.0751	166.0751	5.2100e-003		166.2053

3.6 Architectural Coating - 2019 Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	19.3780					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	19.6445	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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
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
Worker	0.0373	0.0261	0.2849	7.8000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		77.5017	77.5017	2.4300e-003		77.5625

Total	0.0373	0.0261	0.2849	7.8000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		77.5017	77.5017	2.4300e-003		77.5625
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.3780					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0238		282.0423
Total	19.4919	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0238		282.0423

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		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
Worker	0.0373	0.0261	0.2849	7.8000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		77.5017	77.5017	2.4300e-003		77.5625
Total	0.0373	0.0261	0.2849	7.8000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		77.5017	77.5017	2.4300e-003		77.5625

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0191	0.0993	0.2536	8.7000e-004	0.0720	9.0000e-004	0.0729	0.0193	8.5000e-004	0.0201		88.0144	88.0144	4.5700e-003		88.1286
Unmitigated	0.0191	0.0993	0.2536	8.7000e-004	0.0720	9.0000e-004	0.0729	0.0193	8.5000e-004	0.0201		88.0144	88.0144	4.5700e-003		88.1286

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	9.52	9.91	8.62	32,282	32,282
Total	9.52	9.91	8.62	32,282	32,282

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
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Single Family Housing	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955

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	lb/day										lb/day					
NaturalGas Mitigated	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153
NaturalGas Unmitigated	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	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
Single Family Housing	75.3322	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153
Total		8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

Other Non-Asphalt Surfaces	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
Single Family Housing	0.0753322	8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153
Total		8.1000e-004	6.9400e-003	2.9500e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8626	8.8626	1.7000e-004	1.6000e-004	8.9153

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596
Unmitigated	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596

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
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SubCategory	lb/day										lb/day					
Architectural Coating	0.0266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500e-003	0.0141	6.0000e-003	9.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	18.0000	18.0000	3.4000e-004	3.3000e-004	18.1070
Landscaping	2.5400e-003	9.6000e-004	0.0830	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1490	0.1490	1.5000e-004		0.1526
Total	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0266						0.0000	0.0000		0.0000			0.0000			0.0000
Consumer Products	0.2654						0.0000	0.0000		0.0000			0.0000			0.0000
Hearth	1.6500e-003	0.0141	6.0000e-003	9.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	18.0000	18.0000	3.4000e-004	3.3000e-004	18.1070
Landscaping	2.5400e-003	9.6000e-004	0.0830	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1490	0.1490	1.5000e-004		0.1526
Total	0.2961	0.0151	0.0890	9.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	18.1490	18.1490	4.9000e-004	3.3000e-004	18.2596

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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