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Greenhouse Gas Emissions Analysis

Nova Wine Warehouse P16-00456-UP
Planning Commission Hearing Date May 1, 2019

FIRSTCARBON SOLUTIONS™

Memo

Date: April 20, 2018

To: Ron Fedrick, Nova Group Inc.

From: Jason Brandman, Vice President, FirstCarbon Solutions, Inc.

Subject: Nova Warehouse Greenhouse Gas Memorandum

Dear Mr. Fedrick:

FirstCarbon Solutions, Inc. is pleased to provide the following Greenhouse Gas Emissions (GHG) impact analysis consistent with the requirements of the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist for the proposed Nova Warehouse project, which is located in City of Napa, County of Napa. A construction and operational GHG impact analysis is provided below which utilizes the latest version of the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 and evaluates the project's construction and operational GHG emissions compared to the current applicable Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines.

Thank you for the opportunity to conduct a general analysis for the aforementioned technical area. Please feel free to contact Jason Brandman (925.200.1656 or jbrandman@fcs-intl.com) should you have any questions.

Sincerely,

Jason Brandman, Vice President
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

PROJECT UNDERSTANDING

The project is located on the west side of Devlin Road, and south side of Soscol Ferry Road, at the northwest corner of the Industrial Area of Napa County Airport Industrial Park. The lot is currently undeveloped. The entire project site would be 22.76 acres. The project as proposed includes a 400,500 square foot (sq ft) warehouse facility, and a 241-space parking lot.

PROJECT ANALYSIS METHODOLOGY

The report will address the following CEQA Guidelines Appendix G Environmental Checklist questions for greenhouse gas emissions.

Would the project:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

BAAQMD CEQA Guidelines

The project is located within the jurisdiction of the BAAQMD. In addressing the CEQA Appendix G Checklist questions, the BAAQMD has developed three screening criteria for determining whether a project would exceed the operational thresholds of significance. Projects that exceed the applicable operational thresholds would result in a cumulatively considerable and cumulatively significant impact with respect to GHG emissions and global climate change. The three criteria for determining the significance of GHG emissions are noted below:[1]

- Compliance with a qualified GHG Reduction Strategy;
- Annual emissions less than 1,100 metric tons per year (MT/yr) of CO_2e; or
- A service population greater than 4.6 MT/yr CO_2e/SP/yr (residents + employees)

The BAAQMD identifies sources of information on potential thresholds of significance and mitigation strategies for operational GHG emissions from land-use development projects in its CEQA Air Quality Guidelines (May 2017). The BAAQMD significance criterion applicable to the project is whether the project would result in annual GHG emissions of less than 1,100 MT/yr.

[1] BAAQMD CEQA Guidance. 2017. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may 2017-pdf.pdf?la=en.

The BAAQMD has not developed a specific construction GHG threshold; however, some agencies, including the Sacramento Metropolitan Air Quality Management District (SMAQMD), have adopted 1,100 MT CO_2e/year as a threshold for construction-related GHG emissions (SMAQMD, 2015).[2] For the purposes of this analysis, the SMAQMD construction threshold is used to evaluate the project's construction-related emissions.

Furthermore, this assessment addresses whether the project would comply with the California Air Resources AB32 Global Warming Solutions Act Scoping Plan. In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)], which created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required the ARB or Board to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020.

CalEEMod

The California Emissions Estimator Model (CalEEMod), developed for the California Air Pollution Officers Association (CAPCOA) in collaboration with several California air districts, is a statewide land use emissions model designed to estimate air quality criteria pollutant and GHG emissions associated with construction and operations of a project. The latest version of CalEEMod, version 2016.3.2, incorporates the updated California Air Resources Board (CARB) OFFROAD and EMFAC 2014 emission factors; and the 2016 update to the Title 24, Part 6 standard (building efficiency percentage reduction). CalEEMod is the model recommended by the BAAQMD to estimate project emissions and is thus utilized in this analysis.

Construction

The project would generate GHG emissions during construction activities, including site preparation, on-site heavy-duty construction vehicle use, vehicles hauling materials to and from the project site, and construction worker trips to and from the site. These emissions are considered temporary or short-term.

This analysis assumes construction would start in April 2019. Construction activities include site preparation, grading, building construction, paving and architectural coating. The project site consists of 241 parking spaces, 400,500 sq ft warehouse, 139,727 sq ft of landscape and 8.15 acres of open area. FCS confirmed with the applicant that 25 percent of the open area would be paved non-asphalt roads, and the remaining 75 percent would be left as undeveloped area. There are no existing buildings or hardscape surfaces on-site. The cut and fill would be balanced on-site. CalEEMod default assumptions were utilized including construction schedule, construction equipment and activities. Table 1 shows the annual GHG emissions during construction.

[2] SMAQMD Thresholds of Significance Table. 2015. Website: http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable5-2015.pdf

Table 1: GHG Emissions during Construction

Construction Phase	Total Emissions MT CO_2e
Site Preparation	18
Grading	86
Building Construction	519
Building Construction-2020	466
Paving	21
Architectural Coating	6
Total Construction Emissions-2019	623
Total Construction Emissions-2020	493
Threshold of Significance	1,100
Exceed Threshold?	No

Notes:
MT CO_2e = metric tons of carbon dioxide equivalent
Source: SMAQMD 2015 ; FCS 2017, CalEEMod Appendix A.

As noted above, the construction GHG emissions would not exceed the SMAQMD's threshold of significance. Therefore, impacts would be less than significant.

Operations

Operational GHG emissions associated with the project would typically result from area, energy, mobile, stationary, waste, and water source emissions. Unless otherwise noted, CalEEMod defaults were utilized in calculating GHG operational emissions.

Area sources are attributed to the landscaping equipment used on-site, periodic painting and consumer product usage.

Energy sources are attributed to the electricity and natural gas combustion activity for space and water heating and cooling. Nova Group provided the estimated average monthly electricity usage, which is 52,000 KWh. The CalEEMod model defaults were used to estimate the project's emissions from natural gas consumption.

Mobile sources are attributed to the mobile vehicles of employees and workers accessing the site. Mobile source information provided by Nova Group shows that the daily trips would be generated by 20 full time employees, 20 part time employees, and 60 trucks for delivery. The fleet mix was a combination of CalEEMod model defaults and project-specific trip generation, as shown in Table 2.

Table 2: Vehicle Fleet Mix

Vehicle Types	Fleet Mix from CalEEMod Default	Adjusted Fleet Mix
LDA	0.569	0.2529
LDT1	0.039	0.0173
LDT2	0.172	0.0763
MDV	0.120	0.0535
LHD1	0.026	0.1833
LHD2	0.007	0.0456
MHD	0.018	0.1244
HHD	0.035	0.2467
OBUS	0.004	—
UBUS	0.002	—
MCY	0.006	—
SBUS	0.001	—
MH	0.001	—
Source: CalEEMod 2016.3.2.		

There would be GHG emissions from the use of electricity to pump water to the project and to treat wastewater. It is estimated that the proposed project would consume 0.5 million gallons of water annually. Greenhouse gas emissions would be generated from the decomposition of solid waste generated by the project. CalEEMod was used to estimate the GHG emissions from this source.

Currently, the project site would not install any stationary sources, such as generators or boilers. Additional GHG emission analysis would be required if tenant decides to install stationary sources in future. Nova Group has an aggressive company-wide solid waste recycle program, therefore, this analysis assumes that the project would recycle a minimum of 20 percent of the solid waste generated on-site by the project.

Project operational emissions are shown in Table 3.

Table 3: Project Greenhouse Gas Emissions

Source	Annual MT CO_2e
Area	<1
Energy	214

Table 3 (cont.): Project Greenhouse Gas Emissions

Source	Annual MT CO_2e
Mobile	608
Waste[1]	151
Water	1
Total	974
BAAQMD Threshold	**1,100**
Exceeds Threshold?	NO

Notes:
MT CO_2e = metric tons of carbon dioxide equivalents.
Emissions may vary slightly due to rounding.
[1] Applicant applies the solid waste recycle program. 20 percent of solid waste would be recycled.
Source of emissions: FCS and CalEEMod—see Appendix A.
Source of thresholds: BAAQMD 2017.

As shown, the project is expected to generate 974 MT CO_2e per year; the project would not exceed the applicable BAAQMD significance threshold of 1,100 MT CO_2e per year. Therefore, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. As a result, the project would result in a less than significant impact on a cumulative basis with respect to GHG emissions and global climate change.

Project Compliance with Applicable Plans and Regulations

The City of Napa does not have a Climate Action Plan. County of Napa has not adopted the draft Climate Action Plan. Since no other local or regional Climate Action Plan is in place, the project is assessed for its consistency with CARB's adopted Scoping Plan. This would be achieved with an assessment of the project's compliance with Scoping Plan measures.

AB 32 Scoping Plan

The ARB's adopted AB 32 Scoping Plan (Scoping Plan) states, "The 2020 goal was established to be an aggressive, but achievable, mid-term target, and the 2050 GHG emissions reduction goal represents the level scientists believe is necessary to reach levels that would stabilize climate" (ARB 2008). The year 2020 GHG emission reduction goal of AB 32 corresponds with the mid-term target established by Executive Order S-3-05, which aims to reduce California's fair-share contribution of GHGs in 2050 to levels that would stabilize the climate.

The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity

sectors. As shown in Table 4, the project is consistent with the applicable strategies and would not conflict with the recommendations of AB 32 in achieving a statewide reduction in greenhouse emissions. Therefore, the impact would be less than significant.

Table 4: Scoping Plan Measures Consistency Analysis

Scoping Plan Reduction Measure	Project Consistency
1. California Cap-and-Trade Program Linked to Western Climate Initiative. Implement a broad-based California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap-and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms.	**Not applicable.** Although the cap-and-trade system is on-going, the project is not one targeted by the cap-and-trade system regulations, and, therefore, this measure does not apply to the project.
2. California Light-Duty Vehicle Greenhouse Gas Standards. Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	**Not directly applicable.** This is a statewide measure that cannot be implemented by a project applicant or lead agency. However, the standards would be applicable to the light-duty vehicles that would access the project site.
3. Energy Efficiency. Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	**Consistent.** This is a measure for the State to increase its energy efficiency standards in new buildings. The project is required to build to the latest standards and would increase its energy efficiency through compliance.
4. Renewable Portfolio Standard. Achieve 33 percent renewable energy mix statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.	**Not applicable.** This is a statewide measure that cannot be implemented by a project applicant or lead agency. Pacific Gas and Electric Company is required to increase its percent of power supply from renewable sources to 33 percent by the year 2020 pursuant to the Renewable Portfolio Standard. The project would purchase power that is comprised of a greater amount of renewable sources and could install renewable solar power systems that will assist the utility in achieving the mandate.
5. Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard.	**Not directly applicable.** This is a statewide measure that cannot be implemented by a project applicant or lead agency. All fuel consumption associated with the project's operational activities would use fuel that meets these standards.
6. Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. This measure refers to SB 375.	**Not applicable.** The project is not related to developing GHG emission reduction targets.

Table 4 (cont.): Scoping Plan Measures Consistency Analysis

Scoping Plan Reduction Measure	Project Consistency
7. Vehicle Efficiency Measures. Implement light-duty vehicle efficiency measures.	**Not directly applicable.** The standards would be applicable to the light-duty vehicles that would access the project site.
8. Goods Movement. Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.	**Not applicable.** The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
9. Million Solar Roofs Program. Install 3,000 Megawatts of solar-electric capacity under California's existing solar programs.	**Consistent.** The project would comply with Title 24, which requires new buildings to be "solar ready." However, the project would not be required to install solar panel as mitigation measures.
10. Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures.	**Not directly applicable.** This is a statewide measure that cannot be implemented by a project applicant or lead agency. The standards phase in over model years 2014 through 2018 and are applicable to the vehicles that access the project site.
11. Industrial Emissions. Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive CH_4 emissions and reduce flaring at refineries.	**Not applicable.** This measure would apply to the direct GHG emissions at major industrial facilities emitting more than 500,000 MT CO_2e per year. The project is not an industrial land use.
12. High Speed Rail. Support implementation of a high-speed rail system.	**Not applicable.** This is a statewide measure that cannot be implemented by a project applicant or lead agency. The proposed project would not preclude the implementation of this strategy.
13. Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	**Consistent.** The project would comply with the California Energy Code, and thus incorporate applicable energy efficiency features designed to reduce project energy consumption.
14. High Global Warming Potential Gases. Adopt measures to reduce high global warming potential gases.	**Not applicable.** This measure is applicable to the high global warming potential gases that would be used by sources with large equipment (such as in commercial refrigerators) that are not part of this residential project.
15. Recycling and Waste. Reduce CH_4 emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero waste.	**Consistent**. The project would recycle at least 20 percent of solid waste.

Table 4 (cont.): Scoping Plan Measures Consistency Analysis

Scoping Plan Reduction Measure	Project Consistency
16. Sustainable Forests. Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.	**Not applicable.** The project site is not forested; therefore, no preservation is possible.
17. Water. Continue efficiency programs and use cleaner energy sources to move and treat water.	**Consistent.** The project would comply with the California Energy Code and the California Updated Model Landscape Ordinance. With adherence to these regulations, the project will consume energy and water in an efficient manner.
18. Agriculture. In the near-term, encourage investment in manure digesters and at the five-year Scoping Plan update determine if the program should be made mandatory by 2020.	**Not applicable.** The project site is not intended for agricultural purposes. No grazing, feedlot, or other agricultural activities that generate manure occur on-site or are proposed to be implemented by the project.
Source of ARB Scoping Plan Reduction Measures: California Air Resources Board 2008.	

In summary, the project incorporates a number of features that would minimize GHG emissions. These features are consistent with project-level strategies identified by the ARB's Scoping Plan. As shown in Table 4, the project would be consistent or otherwise would not conflict with the applicable measures stated in the AB32 Scoping Plan. Furthermore, annual project-generated annual emissions would fall below the BAAQMD threshold of 1,100 MT CO_2e per year. Considering this information, the project would not significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32 or conflict with implementation of the Scoping Plan. The project promotes the goals of the Scoping Plan through implementation of design measures that reduce energy and water consumption, that increase the percentage of solid waste that is recycled, and that reduces the vehicle miles traveled. Therefore, the project wound not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The impact is less than significant.

GHG REDUCTION DESIGN FEATURES ASSUMED IN THE ANALYSIS

GHG-1 Prior to the issuance of building permits, the County shall ensure that building plans reflect the following measures are to be implemented in the areas of Transportation, Energy-efficiency, Water and Waste Consumption Measures to Reduce Project GHG Emissions.

1. Instate a program to ensure that CalGreen 2016 Title 24 energy standards (used by CalEEMod model 2016.3.2) would be necessary including, but not limited to:

- Sensors shall be installed in all rooms that detect if a guest is in the room and activate the HVAC.
- LED lights installed throughout.

GHG-2 Instate a recycling and compost program that would recycle at least 20 percent of waste created on-site.

Appendix A:
Modeling Result

Nova Warehouse

Napa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	400.50	1000sqft	9.19	400,500.00	0
Other Non-Asphalt Surfaces	88.70	1000sqft	2.04	88,700.00	0
Parking Lot	241.00	Space	2.17	96,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	491.65	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Nova Warehouse - Napa County, Annual

Project Characteristics - Utility Info based on Renewable Portofolio Standards

Land Use - Total project area is 22.76 acre, which includes warehouses, parking lots, onsite roads, landscape and undeveloped area. Information provided by client and site plan.

Construction Phase - anticipated start date April 2019.

Demolition - no demolition

Grading - confirmed by client that cut and fill would be balance on-site.

Vehicle Trips - average daily trips provided by Beth Painter and Ron Fedrick. 60 employee trips and 120 trucks trips per day.

Energy Use - info from Ron's email. The usage would be 52,000 kwp per month.

Water And Wastewater - info from client RFI response

Construction Off-road Equipment Mitigation - Basic Construction Mitigation Measures

Mobile Land Use Mitigation -

Energy Mitigation -

Waste Mitigation - info confirmed by client

Fleet Mix - fleet mix is adjusted based on average daily trips and default fleet mix.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	LightingElect	2.14	0.94
tblEnergyUse	NT24E	1.07	0.47
tblEnergyUse	T24E	0.32	0.14
tblFleetMix	HHD	0.04	0.27
tblFleetMix	LDA	0.57	0.21
tblFleetMix	LDT1	0.04	0.01
tblFleetMix	LDT2	0.17	0.06
tblFleetMix	LHD1	0.03	0.20
tblFleetMix	LHD2	6.5510e-003	0.05

tblFleetMix	MCY	5.6930e-003	0.00
tblFleetMix	MDV	0.12	0.04
tblFleetMix	MH	1.1230e-003	0.00
tblFleetMix	MHD	0.02	0.14
tblFleetMix	OBUS	3.8260e-003	0.00
tblFleetMix	SBUS	1.0210e-003	0.00
tblFleetMix	UBUS	1.8680e-003	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	491.65
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	ST_TR	1.68	0.45
tblVehicleTrips	SU_TR	1.68	0.45
tblVehicleTrips	WD_TR	1.68	0.45
tblWater	IndoorWaterUseRate	92,615,625.00	500,000.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.4018	3.7719	2.8789	6.8200e-003	0.4255	0.1579	0.5834	0.1593	0.1476	0.3069	0.0000	620.4837	620.4837	0.0921	0.0000	622.7851
2020	2.3970	2.4140	2.1163	5.4200e-003	0.1890	0.0941	0.2831	0.0513	0.0884	0.1398	0.0000	490.7665	490.7665	0.0599	0.0000	492.2630
Maximum	**2.3970**	**3.7719**	**2.8789**	**6.8200e-003**	**0.4255**	**0.1579**	**0.5834**	**0.1593**	**0.1476**	**0.3069**	**0.0000**	**620.4837**	**620.4837**	**0.0921**	**0.0000**	**622.7851**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.4018	3.7719	2.8789	6.8200e-003	0.3042	0.1579	0.4621	0.1023	0.1476	0.2499	0.0000	620.4833	620.4833	0.0921	0.0000	622.7848
2020	2.3970	2.4140	2.1163	5.4200e-003	0.1890	0.0941	0.2831	0.0513	0.0884	0.1398	0.0000	490.7663	490.7663	0.0599	0.0000	492.2628
Maximum	**2.3970**	**3.7719**	**2.8789**	**6.8200e-003**	**0.3042**	**0.1579**	**0.4621**	**0.1023**	**0.1476**	**0.2499**	**0.0000**	**620.4833**	**620.4833**	**0.0921**	**0.0000**	**622.7848**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**19.73**	**0.00**	**13.99**	**27.06**	**0.00**	**12.76**	**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	4-1-2019	6-30-2019	1.6125	1.6125
2	7-1-2019	9-30-2019	1.2606	1.2606
3	10-1-2019	12-31-2019	1.2768	1.2768
4	1-1-2020	3-31-2020	1.1442	1.1442
5	4-1-2020	6-30-2020	1.1310	1.1310
6	7-1-2020	9-30-2020	2.5187	2.5187
		Highest	2.5187	2.5187

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	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Energy	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	212.5998	212.5998	8.4600e-003	2.7700e-003	213.6360
Mobile	0.1194	2.4702	1.0197	6.4600e-003	0.2371	0.0139	0.2511	0.0661	0.0133	0.0794	0.0000	613.3904	613.3904	0.0301	0.0000	614.1419
Waste						0.0000	0.0000		0.0000	0.0000	76.4200	0.0000	76.4200	4.5163	0.0000	189.3273
Water						0.0000	0.0000		0.0000	0.0000	0.1586	0.6034	0.7620	0.0163	3.9000e-004	1.2865
Total	**1.9163**	**2.5383**	**1.0837**	**6.8700e-003**	**0.2371**	**0.0191**	**0.2563**	**0.0661**	**0.0185**	**0.0846**	**76.5786**	**826.6066**	**903.1852**	**4.5712**	**3.1600e-003**	**1,018.4057**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Energy	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	212.5998	212.5998	8.4600e-003	2.7700e-003	213.6360
Mobile	0.1186	2.4554	1.0127	6.4000e-003	0.2348	0.0138	0.2486	0.0654	0.0132	0.0786	0.0000	608.0714	608.0714	0.0299	0.0000	608.8191
Waste						0.0000	0.0000		0.0000	0.0000	61.1360	0.0000	61.1360	3.6130	0.0000	151.4619
Water						0.0000	0.0000		0.0000	0.0000	0.1586	0.6034	0.7620	0.0163	3.9000e-004	1.2865
Total	**1.9156**	**2.5235**	**1.0767**	**6.8100e-003**	**0.2348**	**0.0190**	**0.2538**	**0.0654**	**0.0184**	**0.0838**	**61.2946**	**821.2876**	**882.5822**	**3.6678**	**3.1600e-003**	**975.2174**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.04**	**0.58**	**0.64**	**0.87**	**1.00**	**0.68**	**0.98**	**1.00**	**0.65**	**0.93**	**19.96**	**0.64**	**2.28**	**19.76**	**0.00**	**4.24**

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	4/1/2019	4/12/2019	5	10	
2	Grading	Grading	4/13/2019	5/24/2019	5	30	
3	Building Construction	Building Construction	5/25/2019	7/17/2020	5	300	
4	Paving	Paving	7/18/2020	8/14/2020	5	20	
5	Architectural Coating	Architectural Coating	8/15/2020	9/11/2020	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 4.21

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 600,750; Non-Residential Outdoor: 200,250; Striped Parking Area: 11,106 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	246.00	96.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	49.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

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

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6341	0.6341	2.0000e-005	0.0000	0.6346
Total	**3.8000e-004**	**2.9000e-004**	**2.9200e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6341**	**0.6341**	**2.0000e-005**	**0.0000**	**0.6346**

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					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0407**	**0.0120**	**0.0526**	**0.0223**	**0.0110**	**0.0333**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6341	0.6341	2.0000e-005	0.0000	0.6346
Total	**3.8000e-004**	**2.9000e-004**	**2.9200e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6341**	**0.6341**	**2.0000e-005**	**0.0000**	**0.6346**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5520	83.5520	0.0264	0.0000	84.2129
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.1301**	**0.0357**	**0.1658**	**0.0540**	**0.0329**	**0.0868**	**0.0000**	**83.5520**	**83.5520**	**0.0264**	**0.0000**	**84.2129**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2700e-003	9.5000e-004	9.7300e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1138	2.1138	7.0000e-005	0.0000	2.1155
Total	**1.2700e-003**	**9.5000e-004**	**9.7300e-003**	**2.0000e-005**	**2.3700e-003**	**2.0000e-005**	**2.3900e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.1138**	**2.1138**	**7.0000e-005**	**0.0000**	**2.1155**

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					0.0586	0.0000	0.0586	0.0243	0.0000	0.0243	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5519	83.5519	0.0264	0.0000	84.2128
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.0586**	**0.0357**	**0.0943**	**0.0243**	**0.0329**	**0.0572**	**0.0000**	**83.5519**	**83.5519**	**0.0264**	**0.0000**	**84.2128**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2700e-003	9.5000e-004	9.7300e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1138	2.1138	7.0000e-005	0.0000	2.1155
Total	**1.2700e-003**	**9.5000e-004**	**9.7300e-003**	**2.0000e-005**	**2.3700e-003**	**2.0000e-005**	**2.3900e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.1138**	**2.1138**	**7.0000e-005**	**0.0000**	**2.1155**

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	0.1854	1.6547	1.3474	2.1100e-003		0.1013	0.1013		0.0952	0.0952	0.0000	184.5568	184.5568	0.0450	0.0000	185.6808
Total	**0.1854**	**1.6547**	**1.3474**	**2.1100e-003**		**0.1013**	**0.1013**		**0.0952**	**0.0952**	**0.0000**	**184.5568**	**184.5568**	**0.0450**	**0.0000**	**185.6808**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0400	1.0089	0.2818	2.0500e-003	0.0494	7.8300e-003	0.0572	0.0143	7.4900e-003	0.0218	0.0000	196.4788	196.4788	0.0109	0.0000	196.7505
Worker	0.0820	0.0615	0.6262	1.5100e-003	0.1526	1.1000e-003	0.1537	0.0406	1.0100e-003	0.0416	0.0000	136.0639	136.0639	4.3000e-003	0.0000	136.1715
Total	**0.1220**	**1.0703**	**0.9080**	**3.5600e-003**	**0.2019**	**8.9300e-003**	**0.2109**	**0.0549**	**8.5000e-003**	**0.0634**	**0.0000**	**332.5426**	**332.5426**	**0.0152**	**0.0000**	**332.9219**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1854	1.6547	1.3474	2.1100e-003		0.1013	0.1013		0.0952	0.0952	0.0000	184.5566	184.5566	0.0450	0.0000	185.6806
Total	**0.1854**	**1.6547**	**1.3474**	**2.1100e-003**		**0.1013**	**0.1013**		**0.0952**	**0.0952**	**0.0000**	**184.5566**	**184.5566**	**0.0450**	**0.0000**	**185.6806**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0400	1.0089	0.2818	2.0500e-003	0.0494	7.8300e-003	0.0572	0.0143	7.4900e-003	0.0218	0.0000	196.4788	196.4788	0.0109	0.0000	196.7505
Worker	0.0820	0.0615	0.6262	1.5100e-003	0.1526	1.1000e-003	0.1537	0.0406	1.0100e-003	0.0416	0.0000	136.0639	136.0639	4.3000e-003	0.0000	136.1715
Total	**0.1220**	**1.0703**	**0.9080**	**3.5600e-003**	**0.2019**	**8.9300e-003**	**0.2109**	**0.0549**	**8.5000e-003**	**0.0634**	**0.0000**	**332.5426**	**332.5426**	**0.0152**	**0.0000**	**332.9219**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1516	1.3718	1.2047	1.9200e-003		0.0799	0.0799		0.0751	0.0751	0.0000	165.6011	165.6011	0.0404	0.0000	166.6112
Total	**0.1516**	**1.3718**	**1.2047**	**1.9200e-003**		**0.0799**	**0.0799**		**0.0751**	**0.0751**	**0.0000**	**165.6011**	**165.6011**	**0.0404**	**0.0000**	**166.6112**

3.4 Building Construction - 2020

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	0.0292	0.8337	0.2221	1.8600e-003	0.0450	4.5800e-003	0.0495	0.0130	4.3800e-003	0.0174	0.0000	178.1484	178.1484	9.2800e-003	0.0000	178.3803
Worker	0.0680	0.0492	0.5063	1.3300e-003	0.1390	9.7000e-004	0.1400	0.0370	8.9000e-004	0.0379	0.0000	120.0667	120.0667	3.3800e-003	0.0000	120.1513
Total	**0.0971**	**0.8829**	**0.7284**	**3.1900e-003**	**0.1839**	**5.5500e-003**	**0.1895**	**0.0500**	**5.2700e-003**	**0.0553**	**0.0000**	**298.2151**	**298.2151**	**0.0127**	**0.0000**	**298.5316**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1516	1.3718	1.2047	1.9200e-003		0.0799	0.0799		0.0751	0.0751	0.0000	165.6009	165.6009	0.0404	0.0000	166.6110
Total	**0.1516**	**1.3718**	**1.2047**	**1.9200e-003**		**0.0799**	**0.0799**		**0.0751**	**0.0751**	**0.0000**	**165.6009**	**165.6009**	**0.0404**	**0.0000**	**166.6110**

3.4 Building Construction - 2020

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	0.0292	0.8337	0.2221	1.8600e-003	0.0450	4.5800e-003	0.0495	0.0130	4.3800e-003	0.0174	0.0000	178.1484	178.1484	9.2800e-003	0.0000	178.3803
Worker	0.0680	0.0492	0.5063	1.3300e-003	0.1390	9.7000e-004	0.1400	0.0370	8.9000e-004	0.0379	0.0000	120.0667	120.0667	3.3800e-003	0.0000	120.1513
Total	**0.0971**	**0.8829**	**0.7284**	**3.1900e-003**	**0.1839**	**5.5500e-003**	**0.1895**	**0.0500**	**5.2700e-003**	**0.0553**	**0.0000**	**298.2151**	**298.2151**	**0.0127**	**0.0000**	**298.5316**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902
Paving	2.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0164**	**0.1407**	**0.1465**	**2.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9300e-003**	**6.9300e-003**	**0.0000**	**20.0282**	**20.0282**	**6.4800e-003**	**0.0000**	**20.1902**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	4.2000e-004	4.3200e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0239	1.0239	3.0000e-005	0.0000	1.0247
Total	**5.8000e-004**	**4.2000e-004**	**4.3200e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0239**	**1.0239**	**3.0000e-005**	**0.0000**	**1.0247**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901
Paving	2.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0164**	**0.1407**	**0.1465**	**2.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9300e-003**	**6.9300e-003**	**0.0000**	**20.0282**	**20.0282**	**6.4800e-003**	**0.0000**	**20.1901**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	4.2000e-004	4.3200e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0239	1.0239	3.0000e-005	0.0000	1.0247
Total	**5.8000e-004**	**4.2000e-004**	**4.3200e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0239**	**1.0239**	**3.0000e-005**	**0.0000**	**1.0247**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.1270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	**2.1294**	**0.0168**	**0.0183**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.0000e-004**	**0.0000**	**2.5582**

3.6 Architectural Coating - 2020

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	1.8900e-003	1.3700e-003	0.0141	4.0000e-005	3.8700e-003	3.0000e-005	3.9000e-003	1.0300e-003	2.0000e-005	1.0500e-003	0.0000	3.3449	3.3449	9.0000e-005	0.0000	3.3472
Total	**1.8900e-003**	**1.3700e-003**	**0.0141**	**4.0000e-005**	**3.8700e-003**	**3.0000e-005**	**3.9000e-003**	**1.0300e-003**	**2.0000e-005**	**1.0500e-003**	**0.0000**	**3.3449**	**3.3449**	**9.0000e-005**	**0.0000**	**3.3472**

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	2.1270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	**2.1294**	**0.0168**	**0.0183**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.0000e-004**	**0.0000**	**2.5582**

3.6 Architectural Coating - 2020

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	1.8900e-003	1.3700e-003	0.0141	4.0000e-005	3.8700e-003	3.0000e-005	3.9000e-003	1.0300e-003	2.0000e-005	1.0500e-003	0.0000	3.3449	3.3449	9.0000e-005	0.0000	3.3472
Total	**1.8900e-003**	**1.3700e-003**	**0.0141**	**4.0000e-005**	**3.8700e-003**	**3.0000e-005**	**3.9000e-003**	**1.0300e-003**	**2.0000e-005**	**1.0500e-003**	**0.0000**	**3.3449**	**3.3449**	**9.0000e-005**	**0.0000**	**3.3472**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	0.1186	2.4554	1.0127	6.4000e-003	0.2348	0.0138	0.2486	0.0654	0.0132	0.0786	0.0000	608.0714	608.0714	0.0299	0.0000	608.8191
Unmitigated	0.1194	2.4702	1.0197	6.4600e-003	0.2371	0.0139	0.2511	0.0661	0.0133	0.0794	0.0000	613.3904	613.3904	0.0301	0.0000	614.1419

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	180.23	180.23	180.23	581,348	575,534
Total	180.23	180.23	180.23	581,348	575,534

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	9.50	7.30	7.30	100.00	0.00	0.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.569185	0.038999	0.171806	0.120317	0.026328	0.006551	0.017860	0.035422	0.003826	0.001868	0.005693	0.001021	0.001123
Parking Lot	0.569185	0.038999	0.171806	0.120317	0.026328	0.006551	0.017860	0.035422	0.003826	0.001868	0.005693	0.001021	0.001123
Unrefrigerated Warehouse-No Rail	0.210700	0.014400	0.063600	0.044500	0.203700	0.050700	0.138200	0.274200	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	138.4382	138.4382	7.0400e-003	1.4100e-003	139.0338
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	138.4382	138.4382	7.0400e-003	1.4100e-003	139.0338
NaturalGas Mitigated	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1616	74.1616	1.4200e-003	1.3600e-003	74.6023
NaturalGas Unmitigated	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1616	74.1616	1.4200e-003	1.3600e-003	74.6023

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
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
Parking Lot	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
Unrefrigerated Warehouse-No Rail	1.38974e+006	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1616	74.1616	1.4200e-003	1.3600e-003	74.6023
Total		**7.4900e-003**	**0.0681**	**0.0572**	**4.1000e-004**		**5.1800e-003**	**5.1800e-003**		**5.1800e-003**	**5.1800e-003**	**0.0000**	**74.1616**	**74.1616**	**1.4200e-003**	**1.3600e-003**	**74.6023**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
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
Parking Lot	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
Unrefrigerated Warehouse-No Rail	1.38974e+006	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1616	74.1616	1.4200e-003	1.3600e-003	74.6023
Total		**7.4900e-003**	**0.0681**	**0.0572**	**4.1000e-004**		**5.1800e-003**	**5.1800e-003**		**5.1800e-003**	**5.1800e-003**	**0.0000**	**74.1616**	**74.1616**	**1.4200e-003**	**1.3600e-003**	**74.6023**

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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	620775	138.4382	7.0400e-003	1.4100e-003	139.0338
Total		**138.4382**	**7.0400e-003**	**1.4100e-003**	**139.0338**

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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	620775	138.4382	7.0400e-003	1.4100e-003	139.0338
Total		**138.4382**	**7.0400e-003**	**1.4100e-003**	**139.0338**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Unmitigated	1.7895	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5761					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.4000e-004	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Total	**1.7895**	**6.0000e-005**	**6.7500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0131**	**0.0131**	**3.0000e-005**	**0.0000**	**0.0139**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5761					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.4000e-004	6.0000e-005	6.7500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0139
Total	**1.7895**	**6.0000e-005**	**6.7500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0131**	**0.0131**	**3.0000e-005**	**0.0000**	**0.0139**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.7620	0.0163	3.9000e-004	1.2865
Unmitigated	0.7620	0.0163	3.9000e-004	1.2865

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
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0.5 / 0	0.7620	0.0163	3.9000e-004	1.2865
Total		**0.7620**	**0.0163**	**3.9000e-004**	**1.2865**

7.2 Water by Land Use

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
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0.5 / 0	0.7620	0.0163	3.9000e-004	1.2865
Total		**0.7620**	**0.0163**	**3.9000e-004**	**1.2865**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	61.1360	3.6130	0.0000	151.4619
Unmitigated	76.4200	4.5163	0.0000	189.3273

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	376.47	76.4200	4.5163	0.0000	189.3273
Total		**76.4200**	**4.5163**	**0.0000**	**189.3273**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	301.176	61.1360	3.6130	0.0000	151.4619
Total		**61.1360**	**3.6130**	**0.0000**	**151.4619**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation