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July 11, 2019

Patrick Tritz
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RE: Energy Use and Conservation – Latitude Business Park development - City of Corona, CA

This analysis evaluates both construction and operational energy efficiency as it relates to non-renewable fuel sources including Electrical, Natural Gas, Diesel and Gasoline. This effort was prepared according to requirements established within Public Resource Code (PRC) Section 21100(b)(3) and California Environmental Quality Act (CEQA) Guidelines Section 15126.4. The intent is to adequately address the following CEQA questions:

Would the project:

- 1. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*
- 2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

Project Description

The Project site is located on the west side of Temescal Canyon Road, between La Gloria Street Road and Tom Barnes Street, in the City of Corona, California. The proposed Project consists of developing multiple industrial/office/warehousing buildings totaling 519,665 SF of industrial usage and 456,629 Square Feet (SF) of warehousing usage and 148,000 industrial offices within a 45.58-acre project site. Also, as a design feature, the project would utilize Tier 4 construction equipment. It's expected that project construction would begin sometime in 2020 and be fully built out in 2021. The proposed project will consume electricity, natural gas, diesel and gasoline for both construction and operations activities.

Construction

Energy usage for construction equipment is best estimated using total horsepower hours and an assumed thermal efficiency of 30%. The most common measure of the energy efficiency of a tractor is referred to here as "specific volumetric fuel consumption" (SVFC), which is given in units of gallons per horsepower-hour (gal/hp-h). SVFC for diesel engines typically ranges from 0.0476 to 0.1110 gal/hp-h. Inverting these numbers yields a range of between 12-21 hp-h/gal.

Over the last 30 years, fuel efficiency at maximum power has increased from roughly 14.5 to 16.5 hp-h/gal (VirginiaTech, 2010).

Project construction dates were estimated based on an estimated construction kickoff starting in July 2019 and completing the project sometime in 2020. Based on the equipment, quantity, work time, Horsepower (HP), the project would require a total of 1,242,791.20 hp-h (See Table 1 Below). Based on this, the project would consume roughly 75,321 gallons of diesel for construction. It should be noted that fuel consumption would go up if diesel construction equipment is poorly maintained. Based on this, the project shall properly maintain all equipment per manufacture recommendations.

Table 1: Expected Construction Equipment

Equipment Identification	Construction Days	Hours per day	HP	Load Factor	Quantity	Horsepower Hours
Site Preparation	10					
Rubber Tired Dozers		8	247	0.4	3	23,712.00
Tractors/Loaders/Backhoes		8	97	0.37	4	11,484.80
Grading	30					
Excavators		8	158	0.38	2	28,819.20
Graders		8	187	0.41	1	18,400.80
Rubber Tired Dozers		8	247	0.4	1	23,712.00
Scrapers		8	367	0.48	2	84,556.80
Tractors/Loaders/Backhoes		8	97	0.37	2	17,227.20
Paving	20					
Pavers		8	130	0.42	2	17,472.00
Paving Equipment		8	132	0.36	2	15,206.40
Rollers		8	80	0.38	2	9,728.00
Building Construction	400					
Cranes		7	231	0.29	1	187,572.00
Forklifts		8	89	0.2	3	170,880.00
Generator Sets		8	84	0.74	1	198,912.00
Tractors/Loaders/Backhoes		7	97	0.37	3	301,476.00
Welders		8	46	0.45	1	66,240.00
Architectural Coating	300					
Air Compressors		6	78	0.48	1	67,392.00
Total Horsepower Hours						1,242,791.20
Total Diesel Fuel (Gal) @ 16.5 hp-h/gal						75,321
Construction Lists identified within CalEEMod Attachment A to this report which was used for the project GHG analysis						

Construction emissions from workers vendors and hauling are based on the estimated vehicle miles traveled (VMT) for the total construction duration which is 2,431,536 miles total. In

California, the average fuel intensity for on-road vehicles is 0.0615 gal/mile (University of California, Irvine, 2005). Based on this, the vehicular trips would consume roughly 149,539.5 gallons total during construction.

On-road vehicles are regulated by state and federal regulations and vehicular fleet efficiencies are getting better each year. Additionally, all construction equipment shall be maintained as needed per manufactures recommendations. Based on this, the short-term energy demand during construction of the project and would not result in a wasteful or inefficient use of energy.

Operations

Energy – Utility Demand

The State of California has implemented a number of energy reducing policies largely geared to reducing Greenhouse gasses (GHGs). The most notable is Assembly Bill (AB) 32 which was signed in 2006. Since then, the state has implemented two scoping plan updates which are geared to reduce GHG emissions by reducing energy consumption, increasing energy efficiency and increasing the usage of renewable sources. The state has also taken a strong step in increasing building efficiencies under Title 24, par 6 of California’s Code of Regulations.

Under Title 24, Newly constructed non-residential buildings are estimated to achieve a 5% reduction in electricity consumption under the 2016 standards (California Energy Commission, 2015).

In addition to the CEC’s efforts, in 2008, the California Building Standards Commission adopted the nation’s first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen 2016 standards became effective on January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources’ Model Water Efficient Landscape Ordinance
- Sixty five (65) percent of construction waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency

- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements; stricter water conservation, 65 percent diversion of construction and demolition waste, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 75 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs.

Furthermore, the state has implemented a number of regulations which force utility electrical utility providers to increase renewable portfolios or procurement. Specifically, the following policies are noted:

SB 1078 (2002) established the Renewables Portfolio Standard (RPS) program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010.

SB X1 2 (2011) expanded the RPS by establishing that 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 350 (2015) further expanded the RPS by establishing that 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030 be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency.

SB 100 (2018) has further accelerated and expanded the RPS, requiring achievement of a 50 percent RPS by December 31, 2026 and a 60 percent RPS by December 31, 2030. SB 100 also established a new statewide policy goal that calls for eligible renewable energy resources and

zero-carbon resources to supply 100 percent of electricity retail sales and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

Based on the project GHG analysis, the project would on average consume 3,071,580 kBtu of natural Gas and 4,860,103 kWh of electricity each year. Under that analysis, reductions from T24 (2016) and RPS were not accounted for which would improve the efficiency of the project in terms of energy consumption. Based on this, electricity use associated with project operation would not result in wasteful, inefficient, or an unnecessary use of energy. As noted earlier in this analysis the CalEEMod estimation tool output is provided as **Attachment A** to this letter.

Energy – Vehicular Usage

The proposed project was analyzed as a light industrial and industrial office project using trip generation rates identified in the project traffic study (LL&G Engineers, 2019). Based on these numbers, the proposed project would generate roughly 4,127 daily passenger car equivalent trips. The proposed project is within walking distance the Corona Cruiser Red Line (City of Corona - Corona Cruiser, 2019). The ease of access to this resource would result in reduced vehicle miles traveled, reducing gasoline use, and inhibiting wasteful, inefficient, or unnecessary use of energy. Furthermore, the project is within walking distance to shopping and eateries adjacent to the project site. Therefore, the project would have a less than significant impact.

Energy efficiency for vehicles have been increasing as efficiency is mandated by State specific policies geared to reduce GHG emissions using zero-emission vehicles. These policies are:

Executive Order (EO) B-16-12

In March 2012 EO B-16-12 directs state entities under the Governor’s direction and control to support and facilitate development and distribution of ZEVs. This EO also sets a long-term target of reaching 1.5 million zero-emission vehicles on California’s roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of this EO, the Governor convened an Interagency Working Group on Zero-Emission Vehicles that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet.

California Senate Bill 350

In 2015, SB 350 – the Clean Energy and Pollution Reduction Act – was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state’s 2030 and 2050 reduction targets (see Public Utilities Code Section 740.12).

These regulations ultimately are geared to reduce GHG emissions by powering vehicles by electric sources. These sources do actually produce offsite emissions from electric utility companies and consume electrical energy though the efficiencies of electricity production are much higher than standard gasoline or diesel-powered vehicles.


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The project will likely be required by the City to provide the wiring and a dedicated space(s) and for multiple electric vehicle charging stations within parking areas of the facility. This will allow employees to utilize electric vehicles for commuting to and from work.

Based on this, the long-term energy demand during operations of the project would not result in a wasteful or inefficient use of energy. As renewable portfolios increase and as electric vehicle operations become more standardized, energy consumptions and efficiency will decrease. Given this, a less than significant impact under CEQA with respect to Energy Waste is expected and the project would not result in a wasteful or inefficient use of energy. Furthermore, the project would not conflict with or obstruct the State's or Local plans for renewable energy or energy efficiency.

Sincerely Ldn Consulting,



Jeremy Loudon

Attachment A: CalEEMod outputs

References:

- California Energy Commission. (2015, June 3). Retrieved from http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/15-day_language/impact_analysis/2016_Impact_Analysis_2015-06-03.pdf
- City of Corona - Corona Cruiser. (2019). *Corona Cruiser Red Line Weeday Service*. Retrieved from <https://www.coronaca.gov/home/showdocument?id=5051>
- LL&G Engineers. (2019). *Latitude Business Park Traffic Impact Assessment*.
- University of California, Irvine. (2005). *Fuel Efficiency and Motor Vehicle Travel*. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.367.2859&rep=rep1&type=pdf>
- VirginiaTech. (2010). *Predicting Tractor Diesel Fuel Consumption*. Retrieved from <https://pdfs.semanticscholar.org/2631/d1ae4f63bcf1b067e69804f904968f318571.pdf>

Latitude Business Park - South Coast Air Basin, Annual

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South Coast Air Basin, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	148.00	1000sqft	15.19	148,000.00	0
Industrial Park	456.63	1000sqft	15.19	456,629.00	0
Unrefrigerated Warehouse-No Rail	519.66	1000sqft	15.19	519,665.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	536.32	CH4 Intensity (lb/MWhr)	0.022	N2O Intensity (lb/MWhr)	0.005

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - RPS 2022 included

Land Use - site ac

Construction Phase - CS

Vehicle Trips - Per TS

Energy Use -

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation - Tier 3

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	562,147.00	366,429.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	1,686,441.00	1,099,287.00
tblAreaCoating	Area_Nonresidential_Exterior	562147	366429
tblAreaCoating	Area_Nonresidential_Interior	1686441	1099287
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	30.00	10.00
tblConstructionPhase	NumDays	75.00	30.00
tblConstructionPhase	NumDays	55.00	20.00
tblConstructionPhase	NumDays	740.00	400.00
tblConstructionPhase	NumDays	55.00	300.00
tblLandUse	LandUseSquareFeet	456,630.00	456,629.00
tblLandUse	LandUseSquareFeet	519,660.00	519,665.00
tblLandUse	LotAcreage	3.40	15.19
tblLandUse	LotAcreage	10.48	15.19
tblLandUse	LotAcreage	11.93	15.19

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tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	702.44	536.32
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	VendorTripNumber	184.00	120.00
tblTripsAndVMT	WorkerTripNumber	457.00	308.00
tblTripsAndVMT	WorkerTripNumber	91.00	62.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TTP	28.00	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TL	16.60	9.37
tblVehicleTrips	CW_TL	16.60	9.37
tblVehicleTrips	CW_TL	16.60	9.37
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	CW_TTP	33.00	100.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00

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tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	2.49	3.37
tblVehicleTrips	ST_TR	1.64	9.74
tblVehicleTrips	ST_TR	1.68	2.21
tblVehicleTrips	SU_TR	0.73	3.37
tblVehicleTrips	SU_TR	0.76	9.74
tblVehicleTrips	SU_TR	1.68	2.21
tblVehicleTrips	WD_TR	6.83	3.37
tblVehicleTrips	WD_TR	11.42	9.74
tblVehicleTrips	WD_TR	1.68	2.21

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.3031	0.1382
2	4-1-2020	6-30-2020	1.1914	0.5822
3	7-1-2020	9-30-2020	1.6516	1.0042
4	10-1-2020	12-31-2020	2.0367	1.3627
5	1-1-2021	3-31-2021	1.8758	1.2858
6	4-1-2021	6-30-2021	1.8886	1.2920
7	7-1-2021	9-30-2021	1.9094	1.3062
		Highest	2.0367	1.3627

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	4.4037	1.3000e-004	0.0144	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0279	0.0279	7.0000e-005	0.0000	0.0297
Energy	0.0166	0.1506	0.1265	9.0000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	1,876.5848	1,876.5848	0.0734	0.0190	1,884.0734
Mobile	1.2076	6.6342	16.5716	0.0630	5.3484	0.0503	5.3987	1.4330	0.0469	1.4799	0.0000	5,815.4769	5,815.4769	0.2760	0.0000	5,822.3773
Waste						0.0000	0.0000		0.0000	0.0000	242.0342	0.0000	242.0342	14.3038	0.0000	599.6296
Water						0.0000	0.0000		0.0000	0.0000	79.9707	842.0430	922.0138	8.2483	0.2018	1,188.3561
Total	5.6279	6.7849	16.7125	0.0639	5.3484	0.0618	5.4102	1.4330	0.0584	1.4914	322.0050	8,534.1327	8,856.1377	22.9016	0.2208	9,494.4661

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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	4.4037	1.3000e-004	0.0144	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0279	0.0279	7.0000e-005	0.0000	0.0297
Energy	0.0166	0.1506	0.1265	9.0000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	1,346.2323	1,346.2323	0.0516	0.0140	1,351.7035
Mobile	1.2076	6.6342	16.5716	0.0630	5.3484	0.0503	5.3987	1.4330	0.0469	1.4799	0.0000	5,815.4769	5,815.4769	0.2760	0.0000	5,822.3773
Waste						0.0000	0.0000		0.0000	0.0000	181.5257	0.0000	181.5257	10.7279	0.0000	449.7222
Water						0.0000	0.0000		0.0000	0.0000	79.9707	842.0430	922.0138	8.2483	0.2018	1,188.3561
Total	5.6279	6.7849	16.7125	0.0639	5.3484	0.0618	5.4102	1.4330	0.0584	1.4914	261.4964	8,003.7801	8,265.2765	19.3039	0.2158	8,812.1889

	ROG	NOx	CO	SO2	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	18.79	6.21	6.67	15.71	2.24	7.19

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	1/14/2020	5	10	
2	Grading	Grading	1/15/2020	2/25/2020	5	30	
3	Paving	Paving	2/26/2020	3/24/2020	5	20	
4	Building Construction	Building Construction	3/25/2020	10/5/2021	5	400	
5	Architectural Coating	Architectural Coating	8/12/2020	10/5/2021	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,099,287; Non-Residential Outdoor: 366,429; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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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
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
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
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	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	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
Building Construction	9	308.00	120.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	62.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	0.0204	0.2121	0.1076	1.9000e-004	0.0903	0.0110	0.1013	0.0497	0.0101	0.0598	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505

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3.2 Site Preparation - 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	4.0000e-004	3.1000e-004	3.4100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8898	0.8898	3.0000e-005	0.0000	0.8904
Total	4.0000e-004	3.1000e-004	3.4100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8898	0.8898	3.0000e-005	0.0000	0.8904

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0101	0.1043	1.9000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	2.3300e-003	0.0101	0.1043	1.9000e-004	0.0903	3.1000e-004	0.0906	0.0497	3.1000e-004	0.0500	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505

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3.2 Site Preparation - 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	4.0000e-004	3.1000e-004	3.4100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8898	0.8898	3.0000e-005	0.0000	0.8904
Total	4.0000e-004	3.1000e-004	3.4100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8898	0.8898	3.0000e-005	0.0000	0.8904

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0668	0.7530	0.4794	9.3000e-004		0.0326	0.0326		0.0300	0.0300	0.0000	81.7264	81.7264	0.0264	0.0000	82.3872
Total	0.0668	0.7530	0.4794	9.3000e-004	0.1301	0.0326	0.1627	0.0540	0.0300	0.0840	0.0000	81.7264	81.7264	0.0264	0.0000	82.3872

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3.3 Grading - 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	1.3400e-003	1.0300e-003	0.0114	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9659	2.9659	9.0000e-005	0.0000	2.9680
Total	1.3400e-003	1.0300e-003	0.0114	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9659	2.9659	9.0000e-005	0.0000	2.9680

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.0495	0.4950	9.3000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	81.7263	81.7263	0.0264	0.0000	82.3871
Total	0.0114	0.0495	0.4950	9.3000e-004	0.1301	1.5200e-003	0.1316	0.0540	1.5200e-003	0.0555	0.0000	81.7263	81.7263	0.0264	0.0000	82.3871

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3.3 Grading - 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	1.3400e-003	1.0300e-003	0.0114	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9659	2.9659	9.0000e-005	0.0000	2.9680
Total	1.3400e-003	1.0300e-003	0.0114	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9659	2.9659	9.0000e-005	0.0000	2.9680

3.4 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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	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

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3.4 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	6.7000e-004	5.1000e-004	5.6900e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4829	1.4829	4.0000e-005	0.0000	1.4840
Total	6.7000e-004	5.1000e-004	5.6900e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4829	1.4829	4.0000e-005	0.0000	1.4840

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	2.8000e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.8000e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901

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3.4 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	6.7000e-004	5.1000e-004	5.6900e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4829	1.4829	4.0000e-005	0.0000	1.4840
Total	6.7000e-004	5.1000e-004	5.6900e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4829	1.4829	4.0000e-005	0.0000	1.4840

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2141	1.9378	1.7017	2.7200e-003		0.1128	0.1128		0.1061	0.1061	0.0000	233.9261	233.9261	0.0571	0.0000	235.3528
Total	0.2141	1.9378	1.7017	2.7200e-003		0.1128	0.1128		0.1061	0.1061	0.0000	233.9261	233.9261	0.0571	0.0000	235.3528

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3.5 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	0.0410	1.2996	0.3277	3.0600e-003	0.0764	6.3600e-003	0.0827	0.0220	6.0800e-003	0.0281	0.0000	296.5126	296.5126	0.0198	0.0000	297.0073
Worker	0.1385	0.1066	1.1802	3.4000e-003	0.3413	2.6500e-003	0.3440	0.0906	2.4400e-003	0.0931	0.0000	307.5429	307.5429	8.8600e-003	0.0000	307.7643
Total	0.1795	1.4062	1.5079	6.4600e-003	0.4177	9.0100e-003	0.4267	0.1127	8.5200e-003	0.1212	0.0000	604.0554	604.0554	0.0287	0.0000	604.7715

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	0.0331	0.2257	1.7635	2.7200e-003		4.1200e-003	4.1200e-003		4.1200e-003	4.1200e-003	0.0000	233.9258	233.9258	0.0571	0.0000	235.3526
Total	0.0331	0.2257	1.7635	2.7200e-003		4.1200e-003	4.1200e-003		4.1200e-003	4.1200e-003	0.0000	233.9258	233.9258	0.0571	0.0000	235.3526

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3.5 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	0.0410	1.2996	0.3277	3.0600e-003	0.0764	6.3600e-003	0.0827	0.0220	6.0800e-003	0.0281	0.0000	296.5126	296.5126	0.0198	0.0000	297.0073
Worker	0.1385	0.1066	1.1802	3.4000e-003	0.3413	2.6500e-003	0.3440	0.0906	2.4400e-003	0.0931	0.0000	307.5429	307.5429	8.8600e-003	0.0000	307.7643
Total	0.1795	1.4062	1.5079	6.4600e-003	0.4177	9.0100e-003	0.4267	0.1127	8.5200e-003	0.1212	0.0000	604.0554	604.0554	0.0287	0.0000	604.7715

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1882	1.7258	1.6409	2.6700e-003		0.0949	0.0949		0.0892	0.0892	0.0000	229.3209	229.3209	0.0553	0.0000	230.7040
Total	0.1882	1.7258	1.6409	2.6700e-003		0.0949	0.0949		0.0892	0.0892	0.0000	229.3209	229.3209	0.0553	0.0000	230.7040

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3.5 Building Construction - 2021

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	0.0342	1.1556	0.2921	2.9700e-003	0.0749	2.3500e-003	0.0772	0.0216	2.2500e-003	0.0239	0.0000	288.4542	288.4542	0.0186	0.0000	288.9191
Worker	0.1267	0.0941	1.0642	3.2300e-003	0.3345	2.5200e-003	0.3371	0.0889	2.3200e-003	0.0912	0.0000	291.7023	291.7023	7.8500e-003	0.0000	291.8986
Total	0.1609	1.2496	1.3562	6.2000e-003	0.4094	4.8700e-003	0.4143	0.1105	4.5700e-003	0.1150	0.0000	580.1565	580.1565	0.0264	0.0000	580.8177

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	0.0325	0.2212	1.7286	2.6700e-003		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	229.3206	229.3206	0.0553	0.0000	230.7038
Total	0.0325	0.2212	1.7286	2.6700e-003		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	229.3206	229.3206	0.0553	0.0000	230.7038

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3.5 Building Construction - 2021

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	0.0342	1.1556	0.2921	2.9700e-003	0.0749	2.3500e-003	0.0772	0.0216	2.2500e-003	0.0239	0.0000	288.4542	288.4542	0.0186	0.0000	288.9191
Worker	0.1267	0.0941	1.0642	3.2300e-003	0.3345	2.5200e-003	0.3371	0.0889	2.3200e-003	0.0912	0.0000	291.7023	291.7023	7.8500e-003	0.0000	291.8986
Total	0.1609	1.2496	1.3562	6.2000e-003	0.4094	4.8700e-003	0.4143	0.1105	4.5700e-003	0.1150	0.0000	580.1565	580.1565	0.0264	0.0000	580.8177

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	1.1549					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0124	0.0859	0.0934	1.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	13.0216	13.0216	1.0100e-003	0.0000	13.0468
Total	1.1673	0.0859	0.0934	1.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	13.0216	13.0216	1.0100e-003	0.0000	13.0468

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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	0.0141	0.0108	0.1200	3.5000e-004	0.0347	2.7000e-004	0.0350	9.2100e-003	2.5000e-004	9.4600e-003	0.0000	31.2605	31.2605	9.0000e-004	0.0000	31.2830
Total	0.0141	0.0108	0.1200	3.5000e-004	0.0347	2.7000e-004	0.0350	9.2100e-003	2.5000e-004	9.4600e-003	0.0000	31.2605	31.2605	9.0000e-004	0.0000	31.2830

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	1.1549					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5200e-003	6.5700e-003	0.0935	1.5000e-004		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	13.0216	13.0216	1.0100e-003	0.0000	13.0468
Total	1.1564	6.5700e-003	0.0935	1.5000e-004		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	13.0216	13.0216	1.0100e-003	0.0000	13.0468

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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	0.0141	0.0108	0.1200	3.5000e-004	0.0347	2.7000e-004	0.0350	9.2100e-003	2.5000e-004	9.4600e-003	0.0000	31.2605	31.2605	9.0000e-004	0.0000	31.2830
Total	0.0141	0.0108	0.1200	3.5000e-004	0.0347	2.7000e-004	0.0350	9.2100e-003	2.5000e-004	9.4600e-003	0.0000	31.2605	31.2605	9.0000e-004	0.0000	31.2830

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2419					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.1512	0.1799	2.9000e-004		9.3200e-003	9.3200e-003		9.3200e-003	9.3200e-003	0.0000	25.2772	25.2772	1.7300e-003	0.0000	25.3206
Total	2.2636	0.1512	0.1799	2.9000e-004		9.3200e-003	9.3200e-003		9.3200e-003	9.3200e-003	0.0000	25.2772	25.2772	1.7300e-003	0.0000	25.3206

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3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0255	0.0189	0.2142	6.5000e-004	0.0673	5.1000e-004	0.0679	0.0179	4.7000e-004	0.0184	0.0000	58.7193	58.7193	1.5800e-003	0.0000	58.7588
Total	0.0255	0.0189	0.2142	6.5000e-004	0.0673	5.1000e-004	0.0679	0.0179	4.7000e-004	0.0184	0.0000	58.7193	58.7193	1.5800e-003	0.0000	58.7588

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	2.2419					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9400e-003	0.0128	0.1814	2.9000e-004		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	25.2772	25.2772	1.7300e-003	0.0000	25.3206
Total	2.2448	0.0128	0.1814	2.9000e-004		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	25.2772	25.2772	1.7300e-003	0.0000	25.3206

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3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0255	0.0189	0.2142	6.5000e-004	0.0673	5.1000e-004	0.0679	0.0179	4.7000e-004	0.0184	0.0000	58.7193	58.7193	1.5800e-003	0.0000	58.7588
Total	0.0255	0.0189	0.2142	6.5000e-004	0.0673	5.1000e-004	0.0679	0.0179	4.7000e-004	0.0184	0.0000	58.7193	58.7193	1.5800e-003	0.0000	58.7588

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	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	1.2076	6.6342	16.5716	0.0630	5.3484	0.0503	5.3987	1.4330	0.0469	1.4799	0.0000	5,815.4769	5,815.4769	0.2760	0.0000	5,822.3773
Unmitigated	1.2076	6.6342	16.5716	0.0630	5.3484	0.0503	5.3987	1.4330	0.0469	1.4799	0.0000	5,815.4769	5,815.4769	0.2760	0.0000	5,822.3773

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	1,538.84	1,538.84	1538.84	5,248,501	5,248,501
Office Park	1,441.52	1,441.52	1441.52	4,916,563	4,916,563
Unrefrigerated Warehouse-No Rail	1,148.45	1,148.45	1148.45	3,916,991	3,916,991
Total	4,128.81	4,128.81	4,128.81	14,082,055	14,082,055

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-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Industrial Park	9.37	0.00	0.00	100.00	0.00	0.00	100	0	0
Office Park	9.37	0.00	0.00	100.00	0.00	0.00	100	0	0
Unrefrigerated Warehouse-No	9.37	0.00	0.00	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Office Park	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Industrial Park	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Unrefrigerated Warehouse-No Rail	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	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	1,182.3209	1,182.3209	0.0485	0.0110	1,186.8181
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,712.6735	1,712.6735	0.0703	0.0160	1,719.1880
NaturalGas Mitigated	0.0166	0.1506	0.1265	9.0000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	163.9113	163.9113	3.1400e-003	3.0100e-003	164.8854
NaturalGas Unmitigated	0.0166	0.1506	0.1265	9.0000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	163.9113	163.9113	3.1400e-003	3.0100e-003	164.8854

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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					
Industrial Park	1.5845e+006	8.5400e-003	0.0777	0.0652	4.7000e-004		5.9000e-003	5.9000e-003		5.9000e-003	5.9000e-003	0.0000	84.5551	84.5551	1.6200e-003	1.5500e-003	85.0576
Office Park	432160	2.3300e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	23.0617	23.0617	4.4000e-004	4.2000e-004	23.1988
Unrefrigerated Warehouse-No Rail	1.05492e+006	5.6900e-003	0.0517	0.0434	3.1000e-004		3.9300e-003	3.9300e-003		3.9300e-003	3.9300e-003	0.0000	56.2946	56.2946	1.0800e-003	1.0300e-003	56.6291
Total		0.0166	0.1506	0.1265	9.1000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	163.9113	163.9113	3.1400e-003	3.0000e-003	164.8854

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					
Industrial Park	1.5845e+006	8.5400e-003	0.0777	0.0652	4.7000e-004		5.9000e-003	5.9000e-003		5.9000e-003	5.9000e-003	0.0000	84.5551	84.5551	1.6200e-003	1.5500e-003	85.0576
Office Park	432160	2.3300e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	23.0617	23.0617	4.4000e-004	4.2000e-004	23.1988
Unrefrigerated Warehouse-No Rail	1.05492e+006	5.6900e-003	0.0517	0.0434	3.1000e-004		3.9300e-003	3.9300e-003		3.9300e-003	3.9300e-003	0.0000	56.2946	56.2946	1.0800e-003	1.0300e-003	56.6291
Total		0.0166	0.1506	0.1265	9.1000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	163.9113	163.9113	3.1400e-003	3.0000e-003	164.8854

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	4.34711e+006	1,057.5239	0.0434	9.8600e-003	1,061.5464
Office Park	1.46668e+006	356.8002	0.0146	3.3300e-003	358.1574
Unrefrigerated Warehouse-No Rail	1.22641e+006	298.3494	0.0122	2.7800e-003	299.4843
Total		1,712.6735	0.0703	0.0160	1,719.1880

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	3.09366e+006	752.5971	0.0309	7.0200e-003	755.4597
Office Park	996040	242.3073	9.9400e-003	2.2600e-003	243.2290
Unrefrigerated Warehouse-No Rail	770403	187.4165	7.6900e-003	1.7500e-003	188.1294
Total		1,182.3209	0.0485	0.0110	1,186.8181

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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	4.4037	1.3000e-004	0.0144	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0279	0.0279	7.0000e-005	0.0000	0.0297
Unmitigated	4.4037	1.3000e-004	0.0144	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0279	0.0279	7.0000e-005	0.0000	0.0297

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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	0.3397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.0626					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3400e-003	1.3000e-004	0.0144	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0279	0.0279	7.0000e-005	0.0000	0.0297
Total	4.4037	1.3000e-004	0.0144	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0279	0.0279	7.0000e-005	0.0000	0.0297

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	0.3397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.0626					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3400e-003	1.3000e-004	0.0144	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0279	0.0279	7.0000e-005	0.0000	0.0297
Total	4.4037	1.3000e-004	0.0144	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0279	0.0279	7.0000e-005	0.0000	0.0297

7.0 Water Detail

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7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	922.0138	8.2483	0.2018	1,188.3561
Unmitigated	922.0138	8.2483	0.2018	1,188.3561

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	105.596 / 0	367.9884	3.4546	0.0844	479.4928
Office Park	26.3046 / 16.1222	135.2424	0.8623	0.0214	163.1846
Unrefrigerated Warehouse-No Rail	120.171 / 0	418.7830	3.9314	0.0960	545.6787
Total		922.0138	8.2483	0.2018	1,188.3561

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	105.596 / 0	367.9884	3.4546	0.0844	479.4928
Office Park	26.3046 / 16.1222	135.2424	0.8623	0.0214	163.1846
Unrefrigerated Warehouse-No Rail	120.171 / 0	418.7830	3.9314	0.0960	545.6787
Total		922.0138	8.2483	0.2018	1,188.3561

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	181.5257	10.7279	0.0000	449.7222
Unmitigated	242.0342	14.3038	0.0000	599.6296

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	566.22	114.9375	6.7926	0.0000	284.7529
Office Park	137.64	27.9397	1.6512	0.0000	69.2194
Unrefrigerated Warehouse-No Rail	488.48	99.1570	5.8600	0.0000	245.6573
Total		242.0343	14.3038	0.0000	599.6296

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8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	424.665	86.2032	5.0945	0.0000	213.5647
Office Park	103.23	20.9548	1.2384	0.0000	51.9145
Unrefrigerated Warehouse-No Rail	366.36	74.3678	4.3950	0.0000	184.2430
Total		181.5257	10.7279	0.0000	449.7222

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
