

Appendix E

Greenhouse Gas Emissions Assumptions and Modeling

Heacock Truck Terminal Greenhouse Gas Appendix

Heacock Truck Terminal Greenhouse Gas Appendix
Assumptions

Heacock Truck Terminal Project Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location	
County	Riverside County
Air District	SCAQMD
Climate Zone	10
Operational Year	2020
Utility Provider	Southern California Edison
Source Receptor Area (SCAQMD)	24

	Base	2015 ¹	2020 ¹	2030
CO intensity	702.43634	531.7443094	411.6277	351.2182
% renewable	0%	24.30%	41.40%	50.00%

¹ <http://www.cpuc.ca.gov/renewables/>

Land Use	Building SQFT	Building KFS	(seat/ room/ space)	Acers	CalEEMod Land Use Type
Parking				11.2	Parking Lot
Landscaping				2.5	City Park (no building)
Guard Shack	450	0.45	0	0.01	Commercial - General Office

Construction

Construction Schedule

Phases (if applicable)	Start (month/date/year)	Finish (month/date/year)	Days
Site Preparation	6/7/2018	6/20/2018	10
Grading	6/21/2018	8/1/2018	60
Building Construction	8/2/2018	10/24/2018	60
Paving	8/2/2018	12/4/2018	90
Architectural Coating	10/25/2018	11/21/2018	5

Notes:

1. All phases will begin in the first construction year for a conservative construction fleet.
2. Site Preparation and Grading are anticipated to occur independent of each other and be completed prior to the start of building construction and paving.
3. Building Construction and Paving phases are anticipated to overlap.
4. Paving and Architectural Coating phases are anticipated to overlap.
5. Construction Activities are anticipated to occur 5 days per week (Monday thru Friday Only)
6. Construction assumes that a maximum of 47,000 cubic yards of soil import.
7. Architectural Coating phase assumes 100 g/L of VOCs associated with the coatings for the building as well as parking lot painting.

Construction Phases and Equipment Summary

The following provides the equipment estimated by CalEEMod to be used during each phase of site construction. The equipment is based on the size of the site and studies completed by SCAQMD. The following abbreviations are used in the following sections.

= number of each type of equipment that would operate on a max day.

Hrs/day = estimated hours per day each piece of equipment would operate (This is not representative of the total length of the construction day)

HP = horse power of the equipment.

LF = Load factor for the equipment

Site Preparation

Removal of existing vegetation

<u>Equipment Type</u>	<u>#</u>	<u>Hrs/day</u>	<u>HP</u>	<u>LF</u>
Rubber Tired dozers	3	8	247	0.4
Tractor/Loaders/Backhoes	4	8	97	0.37

Grading

Grading of total site

47,000 Cubic/yards of soil import
0 cubic/yards soil export
3,400 trucks

<u>Equipment Type</u>	<u>#</u>	<u>Hrs/day</u>	<u>HP</u>	<u>LF</u>
Excavators	2	8	158	0.38
Graders	1	8	187	0.41
Rubber Tired Dozers	1	8	247	0.4
Scrapers	2	8	367	0.48
Tractors/Loaders/Backhoes	2	8	97	0.37

Building Construction

Building of Guard Shack and Wall

Concrete Import 10,000 cubic yards Concrete Wall

<u>Equipment Type</u>	<u>#</u>	<u>Hrs/day</u>	<u>HP</u>	<u>LF</u>
Crane	1	7	231	0.29
Forklifts	3	8	89	0.2
Generator	1	8	84	0.74
Tractors/Loaders/Backhoes	3	7	97	0.37
Welders	1	8	46	0.45

Paving

Paving of 11.2 acres of site for parking

<u>Equipment Type</u>	<u>#</u>	<u>Hrs/day</u>	<u>HP</u>	<u>LF</u>
Pavers	2	8	130	0.42
Paving Equipment	2	8	132	0.36
Rollers	2	8	80	0.38

Architectural Coating

Paniting/Coating of the guard shack

<u>Equipment Type</u>	<u>#</u>	<u>Hrs/day</u>	<u>HP</u>	<u>LF</u>
Air Compressors	1	6	78	0.48

Construction Trips and Vehicle Miles Traveled

Phase Name	Worker		Vendor		Haul	
	# Trips	VMT/Trip	# Trips	VMT/Trip	# Trips	VMT/Trip
Site Preparation	18	14.7	0	6.9	0	20
Grading	20	14.7	0	6.9	100	20
Building Construction	251	14.7	98	6.9	0	20
Paving	15	14.7	0	6.9	0	20
Architectural Coating	50	14.7	0	6.9	0	20

Note: Worker and Vendor trips are number of one-way trips per day. Haul trips are total number of one-way trips associated with the phase

Updates to the Analysis subsequent to initial modeling.

- 1 The grading phase is increased to 60 days from the 30 originally modeled. This has the following impacts/changes on the analysis as presented:
 - Air Quality - No change as thresholds are based on daily emissions and daily emissions would not change.
 - Health Risk - Risk from grading is extended another 30 days.
 - GHG - Emissions for the onsite grading phase and workers reported in CalEEMod are doubled to account for doubling the number of days of grading activity.
- 2 Construction originally called for 1,500 cubic yards of export, or 100 total trucks over the 30 days. The Project description has been revised to remove the 1,500 cubic yards of export and instead incorporates 46,931 cubic yards of import. Therefore, to make the adjustments to the analysis, the emissions associated with the 1,500 cubic yards was removed, and the emissions from import of 47,000 cubic yards (conservative estimate) was added. While grading is estimated to last 60 days, import is estimated at 200 trucks per day for 17 days as worst case scenario (3,400 total Trucks). This assumes 14 cubic yards per truck.
- 3 It is anticipated that import would occur from the existing stockpiles at Heacock and Cactus. This would be approximately a 3 mile trip. However, as a conservative estimate of travel emissions, the modeling assumes the default 10 miles per trip.

Operational Assumptions

Note, other than the number of employees and number of trucks per day, the other estimates in this section are based on CalEEMod defaults for the size and type of landuse.

# of new employees/day	3 (total 5 employees/8 hour shifts 7 days/week)
Employee Trips	6 one-way vehicle trips per employee per day
Truck Trips	146 Total one-way truck trips per day HHD
	16 Total one-way truck trips per day MHD

Vehicle Trip Assumptions	168 Total one-way trips per day
	373.33 trips per KSF per day
	20 miles per trip for employees
	3.57% trips per day associated with employees
	25 miles per trip for trucks
	96.43% trips per day associated with trucks
	100.00% primary trips (trips intended to start/end at the site)
	3.57% Commute trips
	96.43% Commercial-work trips

Vehicle Fleet Assumptions	%	Vehicle Type
	0.025102	LDA employee
	0.001794	LDT1 employee
	0.008602	LDT2 employee
	0.000216	MCY employee
	0.768500	HHD Trucks
	0.195785	MHD Trucks

Net increase/decrease in energy use	1,561.50 kBtu Natural Gas (per year)
	3.47 kBtu/sqft
	175,048.52 kWh Electric (per year) - Total
	4,284.00 kWh Electric (per year) - Guard Shack
	9.52 kWh/sqft
	3.07 T-24
	2.79 NT-24
	3.66 Lighting
	170,755.00 kWh Electric (per year) - parking Lot
	0.35 kWh/sqft

Water use	79980.19 gallons/year indoor use (bathroom)
	2978703.37 gallons/year outdoor use (landscaping)
	Assumes all waste water goes to a sewer

Solid Waste Generation	0.42 Tons per year Total waste
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Heacock Truck Terminal Greenhouse Gas Appendix
Emissions Summary

**Heacock Truck Terminal Project
Unmitigated CalEEMod GHG Output - Summary**

CalEEMod

2016.3.2

Title:

Heacock Truck Terminal Project
Heacock - Modeling Updates for Grading Phase

Date: 5/3/2018
12/4/2018

Unmitigated Construction Emissions - Max Annual

	MT CO ₂ e				
	Onsite	Hauling	Vendor	Worker	Total
Site Preparation	18	0	0	1	18
Grading	171	4	0	6	181
Export	0	4	0	0	4
Import	0	75	0	0	75
Building Construction	72	0	73	74	219
Paving	94	0	0	7	101
Architectural Coating	1	0	0	1	2
Project Total					592
Amortized Construction					20

Note: Grading phase includes the revisions to the project after the original modeling. It is equal to the grading phase, minus the export phase (removed from project) plus the import phase (added to the project)

Unmitigated Operational Emissions - Max Annual

	<i>Unmitigated</i>
Area	0
Energy	33
Mobile	2,368
Waste	0
Water	7
Total Operational:	2,407
Amortized Construction:	20
Total Project:	2,427
Threshold:	3,000
Exceed Threshold:	No

Heacock Truck Terminal Air Quality Appendix
CalEEMod Output
Annual

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

**Heacock Truck Terminal Project
Riverside-South Coast County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	11.20	Acre	11.20	487,872.00	0
City Park	2.50	Acre	2.50	108,900.00	0
General Office Building	0.45	1000sqft	0.01	450.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	411.63	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading - See Assumptions

Trips and VMT - See Assumptions

Vehicle Trips - See Assumptions

Fleet Mix - See Assumptions

Energy Use - See Assumptions

Water And Wastewater - See Assumptions

Solid Waste - See Assumptions

Construction Off-road Equipment Mitigation - See Assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	300.00	60.00
tblConstructionPhase	NumDays	20.00	90.00
tblConstructionPhase	PhaseEndDate	12/12/2019	10/31/2018
tblConstructionPhase	PhaseEndDate	10/17/2019	10/24/2018
tblConstructionPhase	PhaseEndDate	8/23/2018	8/1/2018
tblConstructionPhase	PhaseEndDate	11/14/2019	12/5/2018
tblConstructionPhase	PhaseEndDate	7/12/2018	6/20/2018
tblConstructionPhase	PhaseStartDate	11/15/2019	10/25/2018
tblConstructionPhase	PhaseStartDate	8/24/2018	8/2/2018
tblConstructionPhase	PhaseStartDate	7/13/2018	6/21/2018
tblConstructionPhase	PhaseStartDate	10/18/2019	8/2/2018
tblConstructionPhase	PhaseStartDate	6/29/2018	6/7/2018
tblFleetMix	HHD	0.07	0.77
tblFleetMix	LDA	0.54	0.03
tblFleetMix	LDT1	0.04	1.7940e-003

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tblFleetMix	LDT2	0.18	8.6020e-003
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.3390e-003	0.00
tblFleetMix	MCY	4.6290e-003	2.1600e-004
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	1.1200e-003	0.00
tblFleetMix	MHD	0.02	0.20
tblFleetMix	OBUS	1.3650e-003	0.00
tblFleetMix	SBUS	9.5900e-004	0.00
tblFleetMix	UBUS	1.2130e-003	0.00
tblGrading	MaterialExported	0.00	1,500.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	411.63
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00
tblTripsAndVMT	HaulingTripNumber	188.00	100.00
tblVehicleTrips	CC_TL	8.40	20.00
tblVehicleTrips	CC_TTP	48.00	3.57
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	16.60	25.00
tblVehicleTrips	CW_TTP	33.00	96.43
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PR_TP	77.00	100.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	2.46	373.33
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	1.05	373.33

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tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	11.03	373.33
tblWater	OutdoorWaterUseRate	49,020.11	0.00

2.0 Emissions Summary

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2018	8-31-2018	1.8984	0.7875
2	9-1-2018	9-30-2018	0.6477	0.4013
		Highest	1.8984	0.7875

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0412	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.5000e-004	3.5000e-004	0.0000	0.0000	3.7000e-004
Energy	1.0000e-005	8.0000e-005	6.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	32.7653	32.7653	2.3000e-003	4.8000e-004	32.9653
Mobile	0.1733	7.1675	1.1482	0.0246	0.6654	0.0405	0.7059	0.1861	0.0388	0.2249	0.0000	2,364.680 1	2,364.680 1	0.1171	0.0000	2,367.607 3
Waste						0.0000	0.0000		0.0000	0.0000	0.0853	0.0000	0.0853	5.0400e-003	0.0000	0.2112
Water						0.0000	0.0000		0.0000	0.0000	0.0254	6.3734	6.3988	3.0600e-003	1.5000e-004	6.5212
Total	0.2145	7.1676	1.1485	0.0246	0.6654	0.0405	0.7059	0.1861	0.0388	0.2249	0.1106	2,403.819 1	2,403.929 7	0.1275	6.3000e-004	2,407.305 4

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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	0.0412	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.5000e-004	3.5000e-004	0.0000	0.0000	3.7000e-004
Energy	1.0000e-005	8.0000e-005	6.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	32.7653	32.7653	2.3000e-003	4.8000e-004	32.9653
Mobile	0.1733	7.1675	1.1482	0.0246	0.6654	0.0405	0.7059	0.1861	0.0388	0.2249	0.0000	2,364.6801	2,364.6801	0.1171	0.0000	2,367.6073
Waste						0.0000	0.0000		0.0000	0.0000	0.0853	0.0000	0.0853	5.0400e-003	0.0000	0.2112
Water						0.0000	0.0000		0.0000	0.0000	0.0254	6.3734	6.3988	3.0600e-003	1.5000e-004	6.5212
Total	0.2145	7.1676	1.1485	0.0246	0.6654	0.0405	0.7059	0.1861	0.0388	0.2249	0.1106	2,403.8191	2,403.9297	0.1275	6.3000e-004	2,407.3054

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/7/2018	6/20/2018	5	10	
2	Grading	Grading	6/21/2018	8/1/2018	5	30	
3	Building Construction	Building Construction	8/2/2018	10/24/2018	5	60	
4	Paving	Paving	8/2/2018	12/5/2018	5	90	
5	Architectural Coating	Architectural Coating	10/25/2018	10/31/2018	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 11.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 675; Non-Residential Outdoor: 225; Striped Parking Area: 29,272 (Architectural Coating – sqft)

OffRoad Equipment

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	100.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	251.00	98.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

3.1 Mitigation Measures Construction

- Use Cleaner Engines for Construction Equipment
- Use Soil Stabilizer
- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					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	0.0228	0.2410	0.1124	1.9000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	17.3800	17.3800	5.4100e-003	0.0000	17.5152
Total	0.0228	0.2410	0.1124	1.9000e-004	0.0903	0.0129	0.1032	0.0497	0.0119	0.0615	0.0000	17.3800	17.3800	5.4100e-003	0.0000	17.5152

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

3.2 Site Preparation - 2018

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	4.9000e-004	3.7000e-004	3.8100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8816	0.8816	3.0000e-005	0.0000	0.8822
Total	4.9000e-004	3.7000e-004	3.8100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8816	0.8816	3.0000e-005	0.0000	0.8822

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					0.0335	0.0000	0.0335	0.0184	0.0000	0.0184	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4800e-003	0.0608	0.1148	1.9000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	17.3799	17.3799	5.4100e-003	0.0000	17.5152
Total	3.4800e-003	0.0608	0.1148	1.9000e-004	0.0335	3.1000e-004	0.0338	0.0184	3.1000e-004	0.0187	0.0000	17.3799	17.3799	5.4100e-003	0.0000	17.5152

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3.2 Site Preparation - 2018

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	4.9000e-004	3.7000e-004	3.8100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8816	0.8816	3.0000e-005	0.0000	0.8822
Total	4.9000e-004	3.7000e-004	3.8100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8816	0.8816	3.0000e-005	0.0000	0.8822

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1302	0.0000	0.1302	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0764	0.8928	0.5263	9.3000e-004		0.0395	0.0395		0.0364	0.0364	0.0000	84.9728	84.9728	0.0265	0.0000	85.6341
Total	0.0764	0.8928	0.5263	9.3000e-004	0.1302	0.0395	0.1697	0.0540	0.0364	0.0903	0.0000	84.9728	84.9728	0.0265	0.0000	85.6341

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3.3 Grading - 2018

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	3.0000e-004	0.0140	1.7000e-003	4.0000e-005	8.6000e-004	5.0000e-005	9.1000e-004	2.4000e-004	5.0000e-005	2.9000e-004	0.0000	3.6966	3.6966	2.5000e-004	0.0000	3.7027
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	1.6300e-003	1.2300e-003	0.0127	3.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	8.9000e-004	0.0000	2.9386	2.9386	9.0000e-005	0.0000	2.9408
Total	1.9300e-003	0.0152	0.0144	7.0000e-005	4.1600e-003	7.0000e-005	4.2300e-003	1.1200e-003	7.0000e-005	1.1800e-003	0.0000	6.6352	6.6352	3.4000e-004	0.0000	6.6435

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					0.0482	0.0000	0.0482	0.0200	0.0000	0.0200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0152	0.2891	0.5508	9.3000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	84.9727	84.9727	0.0265	0.0000	85.6340
Total	0.0152	0.2891	0.5508	9.3000e-004	0.0482	1.5200e-003	0.0498	0.0200	1.5200e-003	0.0215	0.0000	84.9727	84.9727	0.0265	0.0000	85.6340

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3.3 Grading - 2018

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	3.0000e-004	0.0140	1.7000e-003	4.0000e-005	8.6000e-004	5.0000e-005	9.1000e-004	2.4000e-004	5.0000e-005	2.9000e-004	0.0000	3.6966	3.6966	2.5000e-004	0.0000	3.7027
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	1.6300e-003	1.2300e-003	0.0127	3.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	8.9000e-004	0.0000	2.9386	2.9386	9.0000e-005	0.0000	2.9408
Total	1.9300e-003	0.0152	0.0144	7.0000e-005	4.1600e-003	7.0000e-005	4.2300e-003	1.1200e-003	7.0000e-005	1.1800e-003	0.0000	6.6352	6.6352	3.4000e-004	0.0000	6.6435

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0804	0.7017	0.5274	8.1000e-004		0.0450	0.0450		0.0423	0.0423	0.0000	71.3302	71.3302	0.0175	0.0000	71.7671
Total	0.0804	0.7017	0.5274	8.1000e-004		0.0450	0.0450		0.0423	0.0423	0.0000	71.3302	71.3302	0.0175	0.0000	71.7671

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3.4 Building Construction - 2018

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	0.0110	0.3627	0.0741	7.7000e-004	0.0186	3.0100e-003	0.0216	5.3600e-003	2.8800e-003	8.2400e-003	0.0000	73.2832	73.2832	6.4400e-003	0.0000	73.4442
Worker	0.0409	0.0309	0.3189	8.2000e-004	0.0828	5.3000e-004	0.0833	0.0220	4.8000e-004	0.0225	0.0000	73.7590	73.7590	2.2000e-003	0.0000	73.8140
Total	0.0519	0.3936	0.3930	1.5900e-003	0.1013	3.5400e-003	0.1049	0.0273	3.3600e-003	0.0307	0.0000	147.0422	147.0422	8.6400e-003	0.0000	147.2582

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	0.0279	0.3280	0.5471	8.1000e-004		4.5400e-003	4.5400e-003		4.5400e-003	4.5400e-003	0.0000	71.3301	71.3301	0.0175	0.0000	71.7670
Total	0.0279	0.3280	0.5471	8.1000e-004		4.5400e-003	4.5400e-003		4.5400e-003	4.5400e-003	0.0000	71.3301	71.3301	0.0175	0.0000	71.7670

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3.4 Building Construction - 2018

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	0.0110	0.3627	0.0741	7.7000e-004	0.0186	3.0100e-003	0.0216	5.3600e-003	2.8800e-003	8.2400e-003	0.0000	73.2832	73.2832	6.4400e-003	0.0000	73.4442
Worker	0.0409	0.0309	0.3189	8.2000e-004	0.0828	5.3000e-004	0.0833	0.0220	4.8000e-004	0.0225	0.0000	73.7590	73.7590	2.2000e-003	0.0000	73.8140
Total	0.0519	0.3936	0.3930	1.5900e-003	0.1013	3.5400e-003	0.1049	0.0273	3.3600e-003	0.0307	0.0000	147.0422	147.0422	8.6400e-003	0.0000	147.2582

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0740	0.7884	0.6658	1.0300e-003		0.0430	0.0430		0.0396	0.0396	0.0000	93.6523	93.6523	0.0292	0.0000	94.3812
Paving	0.0147					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0886	0.7884	0.6658	1.0300e-003		0.0430	0.0430		0.0396	0.0396	0.0000	93.6523	93.6523	0.0292	0.0000	94.3812

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3.5 Paving - 2018

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	3.6700e-003	2.7700e-003	0.0286	7.0000e-005	7.4200e-003	5.0000e-005	7.4700e-003	1.9700e-003	4.0000e-005	2.0100e-003	0.0000	6.6119	6.6119	2.0000e-004	0.0000	6.6168
Total	3.6700e-003	2.7700e-003	0.0286	7.0000e-005	7.4200e-003	5.0000e-005	7.4700e-003	1.9700e-003	4.0000e-005	2.0100e-003	0.0000	6.6119	6.6119	2.0000e-004	0.0000	6.6168

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	0.0150	0.4518	0.7783	1.0300e-003		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	93.6522	93.6522	0.0292	0.0000	94.3811
Paving	0.0147					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0297	0.4518	0.7783	1.0300e-003		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	93.6522	93.6522	0.0292	0.0000	94.3811

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3.5 Paving - 2018

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	3.6700e-003	2.7700e-003	0.0286	7.0000e-005	7.4200e-003	5.0000e-005	7.4700e-003	1.9700e-003	4.0000e-005	2.0100e-003	0.0000	6.6119	6.6119	2.0000e-004	0.0000	6.6168
Total	3.6700e-003	2.7700e-003	0.0286	7.0000e-005	7.4200e-003	5.0000e-005	7.4700e-003	1.9700e-003	4.0000e-005	2.0100e-003	0.0000	6.6119	6.6119	2.0000e-004	0.0000	6.6168

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0699					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	0.0707	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398

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3.6 Architectural Coating - 2018

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	6.8000e-004	5.1000e-004	5.2900e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2244	1.2244	4.0000e-005	0.0000	1.2253
Total	6.8000e-004	5.1000e-004	5.2900e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2244	1.2244	4.0000e-005	0.0000	1.2253

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0699					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4000e-004	2.6500e-003	4.5800e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	0.0701	2.6500e-003	4.5800e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398

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3.6 Architectural Coating - 2018

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	6.8000e-004	5.1000e-004	5.2900e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2244	1.2244	4.0000e-005	0.0000	1.2253
Total	6.8000e-004	5.1000e-004	5.2900e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2244	1.2244	4.0000e-005	0.0000	1.2253

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	0.1733	7.1675	1.1482	0.0246	0.6654	0.0405	0.7059	0.1861	0.0388	0.2249	0.0000	2,364.680 1	2,364.680 1	0.1171	0.0000	2,367.607 3
Unmitigated	0.1733	7.1675	1.1482	0.0246	0.6654	0.0405	0.7059	0.1861	0.0388	0.2249	0.0000	2,364.680 1	2,364.680 1	0.1171	0.0000	2,367.607 3

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	168.00	168.00	168.00	1,517,871	1,517,871
Parking Lot	0.00	0.00	0.00		
Total	168.00	168.00	168.00	1,517,871	1,517,871

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
General Office Building	25.00	20.00	0.00	96.43	3.57	0.00	100	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	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
City Park	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
General Office Building	0.025102	0.001794	0.008602	0.000000	0.000000	0.000000	0.195785	0.768500	0.000000	0.000000	0.000216	0.000000	0.000000
Parking Lot	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120

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	32.6820	32.6820	2.3000e-003	4.8000e-004	32.8815
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	32.6820	32.6820	2.3000e-003	4.8000e-004	32.8815
NaturalGas Mitigated	1.0000e-005	8.0000e-005	6.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0833	0.0833	0.0000	0.0000	0.0838
NaturalGas Unmitigated	1.0000e-005	8.0000e-005	6.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0833	0.0833	0.0000	0.0000	0.0838

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5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1561.5	1.0000e-005	8.0000e-005	6.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0833	0.0833	0.0000	0.0000	0.0838
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
Total		1.0000e-005	8.0000e-005	6.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0833	0.0833	0.0000	0.0000	0.0838

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1561.5	1.0000e-005	8.0000e-005	6.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0833	0.0833	0.0000	0.0000	0.0838
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
Total		1.0000e-005	8.0000e-005	6.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0833	0.0833	0.0000	0.0000	0.0838

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	4284	0.7999	6.0000e-005	1.0000e-005	0.8048
Parking Lot	170755	31.8821	2.2500e-003	4.6000e-004	32.0767
Total		32.6820	2.3100e-003	4.7000e-004	32.8815

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	4284	0.7999	6.0000e-005	1.0000e-005	0.8048
Parking Lot	170755	31.8821	2.2500e-003	4.6000e-004	32.0767
Total		32.6820	2.3100e-003	4.7000e-004	32.8815

6.0 Area Detail

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0412	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.5000e-004	3.5000e-004	0.0000	0.0000	3.7000e-004
Unmitigated	0.0412	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.5000e-004	3.5000e-004	0.0000	0.0000	3.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0342					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.5000e-004	3.5000e-004	0.0000	0.0000	3.7000e-004
Total	0.0412	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.5000e-004	3.5000e-004	0.0000	0.0000	3.7000e-004

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0342					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.5000e-004	3.5000e-004	0.0000	0.0000	3.7000e-004
Total	0.0412	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.5000e-004	3.5000e-004	0.0000	0.0000	3.7000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.3988	3.0600e-003	1.5000e-004	6.5212
Unmitigated	6.3988	3.0600e-003	1.5000e-004	6.5212

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 2.9787	6.1789	4.4000e-004	9.0000e-005	6.2167
General Office Building	0.0799802 / 0	0.2198	2.6200e-003	6.0000e-005	0.3045
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		6.3988	3.0600e-003	1.5000e-004	6.5212

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 2.9787	6.1789	4.4000e-004	9.0000e-005	6.2167
General Office Building	0.0799802 / 0	0.2198	2.6200e-003	6.0000e-005	0.3045
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		6.3988	3.0600e-003	1.5000e-004	6.5212

8.0 Waste Detail

8.1 Mitigation Measures Waste

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0853	5.0400e-003	0.0000	0.2112
Unmitigated	0.0853	5.0400e-003	0.0000	0.2112

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.42	0.0853	5.0400e-003	0.0000	0.2112
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		0.0853	5.0400e-003	0.0000	0.2112

Heacock Truck Terminal Project - Riverside-South Coast County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.42	0.0853	5.0400e-003	0.0000	0.2112
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		0.0853	5.0400e-003	0.0000	0.2112

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
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Heacock Truck Terminal Project - Riverside-South Coast County, Annual

11.0 Vegetation

Heacock Truck Terminal Air Quality Appendix
CalEEMod Output
Annual - Revised Grading

Heacock - Modeling Updates for Grading Phase - Riverside-South Coast County, Annual

**Heacock - Modeling Updates for Grading Phase
Riverside-South Coast County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	0.45	1000sqft	0.01	450.00	0
Parking Lot	11.20	Acre	11.20	487,872.00	0
City Park	2.50	Acre	2.50	108,900.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	411.63	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions - Change in Export to 0 cubic yards and Import to 47,000 cubic yards.

Land Use - See Assumptions

Construction Phase - See Assumptions

Off-road Equipment - Onsite construction doesn't change, just offsite trucks

Grading - See Assumptions

Trips and VMT - Onsite workers and haul trucks don't change from original modeling only total haul trips.

Vehicle Trips - No Operational

Construction Off-road Equipment Mitigation - See Assumptions

Off-road Equipment - See Assumptions - Onsite equipment does not change just the amount of import/export

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	30.00	17.00
tblConstructionPhase	PhaseEndDate	8/29/2018	8/1/2018
tblConstructionPhase	PhaseStartDate	7/19/2018	6/21/2018
tblGrading	AcresOfGrading	0.00	75.00
tblGrading	AcresOfGrading	0.00	42.50
tblGrading	MaterialExported	0.00	1,500.00
tblGrading	MaterialImported	0.00	47,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	411.63
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripNumber	188.00	100.00
tblTripsAndVMT	HaulingTripNumber	5,875.00	3,400.00

2.0 Emissions Summary

#

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Export	Grading	6/21/2018	8/1/2018	5	30	
2	Import	Grading	6/21/2018	7/13/2018	5	17	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 11.2

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Import	Excavators	0	8.00	158	0.38
Import	Graders	0	8.00	187	0.41
Import	Rubber Tired Dozers	0	8.00	247	0.40
Export	Excavators	0	8.00	158	0.38
Import	Scrapers	0	8.00	367	0.48
Import	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Export	Rubber Tired Dozers	0	8.00	247	0.40
Export	Graders	0	8.00	187	0.41
Export	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Export	Scrapers	0	8.00	367	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
Import	0	0.00	0.00	3,400.00	14.70	6.90	10.00	LD_Mix	HDT_Mix	HHDT
Export	0	0.00	0.00	100.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Mitigated Construction Off-Site

- Not Used

3.3 Import - 2018

Unmitigated Construction On-Site

- Not Used

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.2200e-003	0.3350	0.0398	7.7000e-004	0.0147	9.4000e-004	0.0156	4.0300e-003	9.0000e-004	4.9300e-003	0.0000	74.3849	74.3849	7.2300e-003	0.0000	74.5657
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	7.2200e-003	0.3350	0.0398	7.7000e-004	0.0147	9.4000e-004	0.0156	4.0300e-003	9.0000e-004	4.9300e-003	0.0000	74.3849	74.3849	7.2300e-003	0.0000	74.5657

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.4500e-003	0.0000	9.4500e-003	1.0700e-003	0.0000	1.0700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	9.4500e-003	0.0000	9.4500e-003	1.0700e-003	0.0000	1.0700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

- Not Used

